

**FOSTERING ACADEMIC RESILIENCE IN AT-RISK  
SECONDARY SCHOOL STUDENTS THROUGH  
A COLLABORATIVE INTERVENTION**

*Thesis*  
*Submitted for the Degree of*  
**DOCTOR OF PHILOSOPHY IN EDUCATION**

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## **Certificate**

This is to certify that the thesis entitled "**FOSTERING ACADEMIC RESILIENCE IN AT-RISK SECONDARY SCHOOL STUDENTS THROUGH A COLLABORATIVE INTERVENTION**" is an authentic record of research work carried out by **NEENA K. KOTTALIL**, for the degree of Doctor of Philosophy in Education of University of Calicut, under my supervision and guidance and that no part thereof has been presented before for any other Degree, Diploma or Associateship in any other University.

Calicut University  
. 12. 2012

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## **DECLARATION**

I, **Neena K. Kottalil**, do hereby declare that this thesis entitled "**FOSTERING ACADEMIC RESILIENCE IN AT-RISK SECONDARY SCHOOL STUDENTS THROUGH A COLLABORATIVE INTERVENTION**" is a genuine record of the research work done by me under the supervision of **Dr. Abdul Gafoor, K.** Associate Professor, **Department of Education, University of Calicut**, and that no part of the thesis has been presented earlier for the award of any other Degree, Diploma or Associateship in any other University.

Calicut University  
. 12. 2012

**Neena K. Kottalil**

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School as a cross section of society includes students of varying potentialities, social class, economic status, and family background. Students vary in support received from community, family and peer group. Like wise, individual, family, school and community factors contribute to academic and personal risks in students. School has to protect and nurture every child irrespective of the risk conditions, as education is conceived as an instrument that helps all children to efficiently meet the challenges of increasingly exciting and competitive world by equipping them to successfully adapt to difficulties. Amid growing consensus on teachers as the largest and the most important school-based factor which determines the quality performance and achievement of all students, shifting composition of classrooms challenges educators to be more responsive to the diverse needs of all children. Here lies the significance of academic resilience, needed by all students, especially at-risk students to perform well.

At-risk condition means the constraints that a student has to meet by chance or not that hinder the normal functioning of student. Risk factors are spread over four domains namely within-child, family, school, and community. Risk factors of the different domains closely connect to form a risk network and hamper both personal and academic activities of students. Such students are devoid of conducive learning and living environments and are called as students at-risk.

Some students manifest good academic achievement despite at-risk conditions. Studies had identified the successful adaptation of students in presence of poverty, an at-risk condition (Garmezy, 1983, 1991). Such students who demonstrate good academic achievement despite risk are referred to as academically resilient. The phrase academic resilience means successful academic performance in presence of difficulties. Literature on resilience shows that though resilience is an innate and dynamic developmental process, it can be fostered in students through inculcation of protective factors. Protective factors are the factors that help to

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overcome risk and to manifest good performance in specific fields. Protective factors are present in different domains namely within-child, family, school, and community. If the protective factors in these areas form a strong protective network, such students will become more academically resilient.

Protective factors are the real sources of resilience. At-risk students seek maximum support from the protective domains to lead a smooth academic life. Protective factor is a measurable characteristic in a group of individuals or their situation, which predicts positive outcome in the context of adversity (Mc Millan & Reed, 1994). Within-child protective factors include social competence, problem solving skill, autonomy, and sense of purpose (Benard, 1993), motivation and goal orientation (Mc Millan & Reed, 1994). Family protective factors include parental support, parental monitoring, and parental involvement (Arellano & Padilla, 1996), and positive and high expectations (Berliner & Benard, 1995; Horn & Chen, 1998). School protective factors include teacher expectations (Winfield & Manning 1992; Wang, Haertel, & Walberg, 1997), caring and support (Benard, 2004), higher levels of educational support (Alva, 1991), and instruction (Wang, Haertel, & Walberg, 1997; Waxman, Gray, & Padron, 2003). Presence of a caring adult (Garmezy, 1991), and availability of resources (Wang, Haertel, & Walberg, 1997) are frequented community protective factors.

Adolescence is a transitional period that brings in major physical, cognitive, and socio-emotional changes. Studies of individual differences among adolescents provide information on protective factors that may help adolescents in at-risk contexts. Central to this is resilience concept (Rutter, 1979, Garmezy, 1983). Fostering protective factors will help to develop academic resilience in at-risk school students. There are evidences in resilience literature about the positive outcomes of fostering academic resilience in at-risk students. These include Stanton Case Study (CRESPAR, 1998), Promoting Achievement in School through Sport-PASS (McClendon, Nettles, & Wigfield, 2000) and Young Scholar Programme (Newman, Myers, Newman, Lohman, & Smith, 2000).

### **Need and Significance of the Study**

In Indian context, at-risk children are present in every classroom at all levels. These students have learning difficulties, aggressiveness, homelessness, and physical and psychological disabilities, and they suffer harassment due to the cultural norms. Most of such children are avoided by teachers and others while many are humiliated by putting label such as retarded, learning disabled, socially backward, emotionally disturbed, educationally deficient or culturally disadvantaged (Wang, 1996). Most, schools cater these students with strategies like special classes, ability grouping, tracking, resource rooms and transition classes. In these special arrangements, teachers often focus on developing the basic skills through remedial teaching than on the development of broader cognitive, metacognitive, and socio-emotional abilities to adjust with their debilitating situation. In turn, these students receive neither high expectations nor rich content, nor instructional strategies required to prop up high achievement.

This study is on whether multi-risk conditions within-child, in family, and in school affect certain socially significant developmental outcomes; like academic achievement, social competence, problem solving skill, critical consciousness, autonomy, sense of purpose; and whether a collaborative intervention can enhance these set of protective factors, plus peer support, family resources, family psychological nurturance, family environment, and authoritative parenting in students at-risk. This question, framed by coupling the findings of worldwide researches on resilience with observations on local socio-educational situation, and answers thereof have practical and theoretical as well as local and global significance.

In the immediate context of Kerala, hosts of studies indicate individual, familial, school, and community factors that relates to students' performance in school. Individual factors contributing to student achievement include sense of personal worth, feeling of belongingness, total personal adjustment,

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and achievement motivation (Gul Muhamed,1995), personality variables (Soma sundaram, 1980), and affective variables (Soman,1977; Ramachandran,1981). Social familial variables (Abraham, 1975; Nair, 1984) also were widely explored in relation to student achievement in Kerala. These include home learning facility, family acceptance of education, family cultural level, family environmental index, social-familial index, parental education, parental occupation, parental income level, S.E.S., and family size (George, 1989), attitudes (Kadeeja,1991; Ramesan,2000), parental encouragement, parental guidance, and provision of physical facilities (Gafoor,2001), and parenting styles (Manjusha,2006). From a practice perspective it is clear that, if there are problems in these domains, students are at-risk of academic failure. In situations where one adversity condition present particularly high risk for some important outcomes, giving priority to this over the others is logical (Luthar, 1993). However, in many instances all areas will be important; though, not all risk factors present equivalent threats. Hence, multiple-risk studies take numerous risk factors and accumulation of risks that account for children's developmental outcomes better (Sampson & Laub, 1994) have to pursue. In such studies, conceptually critical multiple outcomes are accorded equivalent salience and either considered separately or integrated in to a composite.

There are other theoretical reasons as well to take up a study that consider multiple-risks. The risk factors associated with student achievement can be both distal and proximal (Baldwin, Baldwin & Cole, 1990). Distal risk factors are those like socio-economic status and home conditions that are experienced not directly by the child, but are mediated by "proximal" variables such as ineffective parenting. "Proximal" risk factors in themselves may not be sufficient condition for being at high risk; and hence "distal" risk factors are important considerations (Baldwin et al., 1990). Additionally, in practice, it is difficult to identify all the proximal (Masten, Best, & Garnezy, 1990) risk factors in students' environment.

Socially and academically, in Kerala, competition is high for whatever opportunities that unfolds before the younger generation. Therefore, significance of

academic achievement and grades increases as social processes use failure-success as a rationale for provision of further opportunities for development. Naturally, society will keep aside those who are at-risk of failure. Therefore, conditions showing significant association with child maladjustment in any one of the socially relevant developmental outcomes need to be considered at-risk (Masten, Best, & Garmezy, 1990; Richters & Weintraub, 1990). Socio-Economic conditions, school conditions and student characteristics below a critical level adversely affect the academic outcomes; and hence they are risk factors.

Currently, number of children whose academic career are discoloured by under performance in school due to reasons like poverty, broken family, illness, drug addiction, frequent relocations and other adversities is increasing. If child faces a number of risks, there will be a significant decline in the cognitive and behavioral outcomes in middle childhood and adolescence. If a child is experiencing increased number of demographic and psychological risk factors, there is increased chance for developing adjustment problems in that child (Rutter, 1979). Moreover, children are becoming highly stressed at younger and younger ages today (Youngs, 1995). When environmental demands exert strain on the person's psychological and biological adaptive capacity, he or she become at-risk for illness (Cohen, 1995). Possibility of poor adaptation and poor achievement is high in such situations. Teaching community feel helpless in solving this problem.

However, researches show the way out. Some students are successful in school while other students of the same social and economic backing are not. Research on those students who succeed in school despite the presence of adverse conditions has important implications for the educational improvement of students at-risk of academic failure. It will be useful for policy makers, administrators, teachers, and parents to find out why some students are academically resilient and others are academically vulnerable, and to find out what can be done in classroom to help students win despite vulnerabilities.

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Researches demonstrate also that risk and safe conditions are not as clear as one would assume by the preceding account. Many fundamental developmental processes operate in similar ways among low and high risk children (Graham & Hudley, 1994; Graham & Hoehn, 1995; Luthar, 1999) so that attempt to derive theories that would apply only to “poor children” or at-risk families is unnecessary (Garcia Coll, Lamberty, Jenkins, McAdoo, Crnic, & Wasik, 1996). Hence, resilience may be promoted not necessarily due to adversity but may be promoted in anticipation of inevitable adversities (International Resilience Project Design, 1994).

Research on resilience carries substantial potential for ongoing refinements of existing theories of normal human development. Resilience is an active process of self-righting, learned resourcefulness and growth- it is the ability to function psychologically at a level far greater than expected given the individual’s capabilities and previous experiences (Paton, Smith, & Violanti, 2000). Resilience emerges as cognitive, behavioral, and emotional abilities and its transaction with the environment (Cicchetti & Lynch, 1993, Luthar, Cicchetti, & Becker, 2000). Demonstration of the positive adaptation by children, particularly from the low-income families suffering stigmatization and discrimination, is a resilient outcome (Spencer, 1990; Spencer & Dupree, 1996). Studying resilient children could teach us better ways to reduce risk, promote competence, and shift the course of development in more positive directions (Glantz & Johnson, 1999). Understanding the processes contributing to positive adjustment under condition of adversity can help to broaden the understanding of developmental processes that may not be evident in normal environments.

Echoing the distal and proximal factors in risk research, identification of both internal assets of the individual and external strengths present in the environment of the individual is a strong feature of resilience research. Decades of research has documented parents’ critical role in children’s literacy development (Chomsky, 1972; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991; Cairney & Munsie, 1995). Caring and support across all the three external systems namely

family, school and community is the most critical variable during childhood and adolescence (Rutter, Maughan, Mortimore, Ouston, & Smith, 1979). Presence of multiple protective factors relates to increase in positive outcomes (Werner & Smith, 1982; Radke- Yarrow & Sherman, 1990; Garmezy, 1991; Bradley, Whiteside-Mansell, Mundfrom, Casey, Kelleher, & Pope, 1994). One among the objectives of this study, hence, is to identify the protective factors that differ among varied risk groups of secondary school students.

Paralleling exploration of multiple-risks, composite constructs also have been profitably examined in research on childhood resilience, with incorporation of multi-method, multi-informant strategies of assessment (Pianta, Egeland, & Sroufe, 1990, Richters & Martinez, 1993). When risks experienced generally fall in more moderate range (Luthar, 1991) evidence of superior functioning in conceptually important domains may be required to justify labels of resilience. Additionally, when multiple outcomes are assessed, a critical question is whether these should be examined separately or integrated. If the assessed outcomes represent largely discrete constructs, it is best to examine them separately. It is most meaningful to examine vulnerability and protective processes separately for major outcomes and to discuss findings in terms of the particular domain under consideration. Hence, it is vital to identify more specifically the factors that are responsible to the positive educational outcomes of children who are experiencing multiple environmental risk factors (Boykin, 1986; Ogbu, 1986; Spencer, 1999). Theory and research on resilience has attempted to understand how economically and otherwise disadvantaged children experiencing high risk demonstrate successful adaptation despite adversities (Garmezy, 1985; Cicchetti & Garmezy, 1993; Cicchetti & Rogosch, 1997; Masten & Coatsworth, 1998). Accordingly, this study intends to identify the secondary school achievement domains - Mathematics, Basic Science, Social Science, and Information Technology - affected by risk dimensions.

Though little consensus exists regarding the measurement of outcome in resilience (Luthar, Cicchetti, & Becker, 2000) and is measured as the absence of

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adjustment problems, and presence of positive adjustment or both; for school-age children researchers agree that, appropriate indicators would be academic success and positive relationships with peers as well as adults (Masten, Coatsworth, Neemann, Gest, Tellegen, & Garmezy, 1995). As protective factors play a significant role in academic achievement, and, as students can utilize within-child, family, and school factors themselves more easily, than community protective factors; this study on fostering academic resilience focused on within-child, and family protective factors.

Protective factors include both individual and environmental characteristics that ameliorate or buffer a child's response to risk factors (Masten & Garmezy, 1985). Multiple protective factors can increase the chances of positive outcomes among at-risk groups (Jessor, Van Den Bos, Vanderryn, Costa, & Turbin 1995; Fergusson & Lynskey, 1996; Jessor, Turbin, & Costa, 1998a, 1998b; Frustenberg, Cook, Eccles, Elder, & Sameroff, 1999). Since, interventions targeting attitudes are effective with pre-adolescents and adolescents in particular (Weissberg & Greenberg, 1998); fostering resilience during this period of transition when children face normative developmental challenges (Felner, Brad, Adan, Mulhall, Flowers, Sartain, & Dubois, 1993; Eccles, Lord, & Roesser, 1996) might be more effective. This study take the view that, programmes aimed at fostering resilience should take all families and children into adequate consideration (Takanishi, 1996; Jessar et al., 1998b). Surely, the study recognizes that, teacher's caring attitude and high expectation will enhance the resilience in students (Wang, Haertel, & Walberg, 1998). Among the four areas of protective factors, within-child, family, and school factors are much vital to academic resilience because students themselves are able to utilize the protective factors in these areas more easily than from community. Both teachers and parents should become aware of this fact and construct some strategies to help the children from these dangers. Inculcation of academic resilience by fostering the protective factors is very much significant in this context. In the development of adolescents, especially the role of resilience is vital (Luthar &

Zigler, 1991; Brady, 1993; Raphael, 1993; Werner, 1995; Carbonell, Reinherz, & Giaconia, 1998; Mc Cubbin, Thompson, Thompson, & Fromer, 1998). Hence, the present intervention for fostering academic resilience focused on within-child, and family protective factors among adolescents in high schools of Kerala.

In Kerala, schools in the rural areas still suffer from the problems related with infrastructure, qualified teachers, sanitation facilities, and inadequate co-operation from parents and community members, and lack of connection between school and community resources to help the students to develop to their maximum potential. The number of at-risk students is large in such backward rural schools. This study thus focused on rural secondary schools in the survey phase and utilized the observations from there to develop and test an intervention programme on students in an average performing rural government school, by involving their parents too in the process of fostering academic resilience.

In spite of adequate research findings favouring the effectiveness of inculcating resilience, and identifying the problems and risks of the students, the studies paying attention to help at-risk students to win over adversities are rare in Kerala. If schools and the teachers take this as a mission, both the students and parents and ultimately the society gain. This study is an effort to design an intervention to help at-risk students to win over adversities and demonstrate achievement mainly focusing on the asset-focused and process focused strategies of resilience promotion. To accomplish this goal, study started with an explorative survey to identify how the risk factors and protective factors are distributed among secondary school students, and how level of risk affects students' achievement. Based on the findings of the survey, the study developed an intervention programme to foster academic resilience in at-risk secondary school students.

### **Statement of the Problem**

“Fostering Academic Resilience in At-Risk Secondary School Students through a Collaborative Intervention”

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This study first explores protective factors in academically at-risk students and subsequently tests the effectiveness of an intervention which collaborates students, parents, and community, for inculcating academic resilience measured as academic achievement despite risk, through fostering the protective factors among rural secondary school students in Malappuram district of Kerala.

### **Definition of the Key Terms**

#### **1. Academic Resilience**

Academic resilience is defined as the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions, and experiences (Wang, Haertel, & Walberg, 1994).

In this study, academic resilience stands for academic achievement in presence of risks. It is measured as achievement in Mathematics in presence of child and family risks, and gain in within-child, and family protective factors.

#### **2. At-risk**

At-risk refers to individual or social factors that are associated with a greater likelihood of poor developmental outcomes (Masten & Garmezy, 1985).

In this study, at-risk school students stand for secondary school students who are facing physical, psychological, familial, and school situations that hamper achievement. The situations may be related to the combination of factors in self, family, and school.

#### **3. Collaborative Intervention**

Collaboration can be defined as a process through which parties who see different aspect of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible (Gray, 1989).

Intervention means a set of programmes facilitated by the experimenter to change the relative position of the participants in relation to their psychological, familial, and school environment bringing in changed developmental outcomes.

In this study, collaborative intervention stands for an intervention to develop academic resilience in students in which students, parents, and community take the effort cooperatively.

### **Objectives of the Study**

This study intends to develop and test the effectiveness of a programme to foster academic resilience in at-risk students based on the protective factors identified among secondary school students. To accomplish this major objective, the study has the following minor objectives.

1. To identify the protective factors that differ among low-, average-, and high-risk groups of secondary school students based on child-risk, family-risk, and school-risk.
2. To identify the secondary school subjects from Mathematics, Basic Science, Social Science, and Information Technology, achievement in which are significantly affected by risk dimensions namely child-risk, family-risk, and school-risk.
3. To develop a programme to foster academic resilience by inculcating protective factors in at-risk students at secondary school level.
4. To test the effectiveness of the programme in fostering academic resilience among at-risk secondary school students.
5. To compare the effectiveness of FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Family cum Child focused intervention for fostering Academic Resilience) in developing academic resilience in terms of protective factors and student achievement among at-

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risk secondary school students, in the total sample and low-and high-groups on Child-Risk and Family-Risk.

6. To test the effect of FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Family cum Child focused intervention for fostering Academic Resilience) on achievement after adjusting for the pre-intervention differences if any in achievement, child-risk and family-risk.
7. To compare the effectiveness of FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Family cum Child focused intervention for fostering Academic Resilience) on academic resilience in terms of achievement after adjusting for the pre-intervention differences if any in achievement, child-risk and family-risk.
8. To compare the delayed post-test scores of within-child protective factors, and family protective factors of FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Family cum Child focused intervention for fostering Academic Resilience) on academic resilience.

### **Variables**

As the study is designed with a survey phase leading to an experimental phase, variables in the two phases are listed separately.

#### **Variables in the Survey Phase**

Survey phase of the study explored the influence of student attributes namely risk conditions, on criterions namely protective factors and achievement.

#### **Attribute variables**

Survey phase has the following attribute variables, viz.,

- i. Child-Risk

- ii. Family-Risk, and
- iii. School-Risk

**Criterion variables**

The criterion variables in the survey phase were the following protective factors and indices of academic achievement, viz.,

- i. Social Competence
- ii. Problem Solving Skill
- iii. Critical Consciousness
- iv. Autonomy
- v. Sense of Purpose
- vi. Peer Support
- vii. Family Resources
- viii. Family Psychological Nurturance
- ix. Family Environment
- x. Authoritative Parenting
- xi. Curriculum Adaptation to Student Diversity
- xii. Caring Teachers
- xiii. Achievement in Mathematics
- xiv. Achievement in Basic Science
- xv. Achievement in Social Science, and
- xvi. Achievement in Information Technology

**Variables in the Experimental Phase**

The experimental phase of the study took up independent variable, dependent variables, and moderator variables.

**Independent variable**

Independent variable in this study is the treatment for fostering academic resilience with following levels viz.,

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- a. FAR (Family focused intervention for fostering Academic Resilience)
- b. CAR (Child focused intervention for fostering Academic Resilience)
- c. FCAR (Family cum Child focused intervention for fostering Academic Resilience), and
- d. Control group (no treatment)

#### **Dependent variables**

Indicators of academic resilience viz., academic achievement and protective factors are the dependent variables. Specifically, there were 11 variables viz., Academic Achievement, plus 10 protective factors as listed below.

- i. Social Competence
- ii. Problem Solving Skill
- iii. Critical Consciousness
- iv. Autonomy
- v. Sense of Purpose
- vi. Peer Support
- vii. Family Resources
- viii. Family Psychological Nurturance
- ix. Family Environment
- x. Authoritative Parenting

This list of protective factors in the experimental phase excludes two school protective factors viz., Curriculum Adaptation to Student Diversity, and Caring Teachers considered during survey phase because the intervention focuses only on within-child and family protective factors and hence its effect on school protective factors are not investigated. Academic achievement in subject identified as vulnerable to the three domains of risk and affected by protective factors in phase 1 (Mathematics) only is considered in phase 2.

### **Moderator variables**

The effect of the intervention on the academic resilience is studied for two levels (low and high) of child-risk and family-risk. Hence, i) Child- risk, and ii) Family- risk are moderator variables in this study.

### **Research Questions**

In order to clarify the above mentioned broad objectives of the study, each of the objectives is formulated as research questions to make it more specific. They are listed below.

1. Which among the select protective factors viz., i. Social Competence, ii. Problem Solving Skill, iii. Critical Consciousness, iv. Autonomy, v. Sense of Purpose, vi. Peer Support, vii. Family Resources, viii. Family Psychological Nurturance, ix. Family Environment, x. Authoritative Parenting, xi. Curriculum Adaptation to Student Diversity, and xii. Caring Teachers does significantly differ by the levels (low, average, and high) of risks sourced from within-child, family, and school in secondary school students?
2. Which school subjects viz., Mathematics, Basic Science, Social Science, and Information Technology demonstrate significant difference in achievement based on levels of risk sourced from within-child, family, and school in secondary school students?
3. Can FAR (Family focused intervention for fostering Academic Resilience) enhance protective factors and student achievement, in the total sample and low-and high-groups on child-risk and family-risk.
4. Can CAR (Child focused intervention for fostering Academic Resilience) enhance protective factors and student achievement, in the total sample and low-and high-groups on child-risk and family-risk.
5. Can FCAR (Family cum Child focused intervention for fostering Academic Resilience) enhance protective factors and student achievement, in the total sample and low-and high-groups on child-risk and family-risk.

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6. Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on gain in each of the select protective factors viz., i. Social Competence, ii. Problem Solving Skill, iii. Critical Consciousness, iv. Autonomy, v. Sense of Purpose, vi. Peer Support, vii. Family Resources, viii. Family Psychological Nurturance, ix. Family Environment, and x. Authoritative Parenting? If so, which level of intervention is more effective in enhancing each of the protective factors, in the total sample and low-and high-groups on child-risk and family-risk.
7. Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on enhancing student achievement? If so, which level of intervention is more effective in enhancing student achievement , in the total sample and low-and high-groups on child-risk and family-risk.
8. Do the intervention groups (FAR, CAR, FCAR) have significantly higher achievement than the control group after adjusting for the pre-intervention differences if any in achievement, child-risk, and family-risk?
9. Do the interventions (FAR, CAR, FCAR) differ in their effect on achievement after adjusting for the pre-intervention differences if any in achievement, child-risk, and family-risk?

### **Hypotheses**

The research questions were reformulated into the following hypotheses.

1. Mean scores of protective factors viz.,
  - i. Social Competence
  - ii. Problem Solving Skill
  - iii. Critical Consciousness
  - iv. Autonomy
  - v. Sense of Purpose
  - vi. Peer Support
  - vii. Family Resources

- viii. Family Psychological Nurturance
- ix. Family Environment
- x. Authoritative Parenting
- xi. Curriculum Adaptation to Student Diversity, and
- xii. Caring Teachers

in secondary school students differ significantly based on their level (low, average, and high) of risk from within-child source.

2. Mean scores of protective factors viz.,

- i. Social Competence
- ii. Problem Solving Skill
- iii. Critical Consciousness
- iv. Autonomy
- v. Sense of Purpose
- vi. Peer Support
- vii. Family Resources
- viii. Family Psychological Nurturance
- ix. Family Environment
- x. Authoritative Parenting
- xi. Curriculum Adaptation to Student Diversity, and
- xii. Caring Teachers

in secondary school students differ significantly based on their level (low, average, and high) of risk from family source.

3. Mean scores of protective factors viz.,

- i. Social Competence
- ii. Problem Solving Skill
- iii. Critical Consciousness
- iv. Autonomy
- v. Sense of Purpose
- vi. Peer Support

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- vii. Family Resources
- viii. Family Psychological Nurturance
- ix. Family Environment
- x. Authoritative Parenting
- xi. Curriculum Adaptation to Student Diversity, and
- xii. Caring Teachers

in secondary school students differ significantly based on their level (low, average, and high) of risk from school source.

4. Mean achievement scores of each secondary school subject viz.,
  - i. Mathematics,,
  - ii. Basic Science,
  - iii. Social Science, and
  - iv. Information Technology,

significantly differ by the levels (low, average, and high) of risk sourced from (a) within-child, (b) family, and (c) school.

5. Mean gain score of each of the protective factor viz.,
  - i. Social Competence
  - ii. Problem Solving Skill
  - iii. Critical Consciousness
  - iv. Autonomy
  - v. Sense of Purpose
  - vi. Peer Support
  - vii. Family Resources
  - viii. Family Psychological Nurturance
  - ix. Family Environment ,and
  - x. Authoritative Parenting

is significantly higher in FAR group than in the control group.

6. Mean post-test scores of achievement in select subject(s) is significantly higher in FAR (Family focused intervention for fostering Academic Resilience) group than that in the control group.
7. Mean gain score of each of the protective factor viz.,
  - i. Social Competence
  - ii. Problem Solving Skill
  - iii. Critical Consciousness
  - iv. Autonomy
  - v. Sense of Purpose
  - vi. Peer Support
  - vii. Family Resources
  - viii. Family Psychological Nurturance
  - ix. Family Environment, and
  - x. Authoritative Parentingis significantly higher in CAR group than in the control group.
8. Mean post-test scores of achievement in select subject(s) are significantly higher in CAR (Child focused intervention for fostering Academic Resilience) group than that in the control group.
9. Mean gain score of each of the protective factor viz.,
  - i. Social Competence
  - ii. Problem Solving Skill
  - iii. Critical Consciousness
  - iv. Autonomy
  - v. Sense of Purpose
  - vi. Peer Support
  - vii. Family Resources
  - viii. Family Psychological Nurturance
  - ix. Family Environment, and
  - x. Authoritative Parenting

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is significantly higher in FCAR group than in the control group.

10. Mean post-test scores of achievement in select subject(s) are significantly higher in FCAR (Family cum Child focused intervention for fostering Academic Resilience) group than that in the control group.
11. Immediate post-test scores of student achievement in select subject(s) are significantly higher in FAR group in comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any.
12. Immediate post-test scores of student achievement in select subject(s) are significantly higher in CAR group in comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any.
13. Immediate post-test scores of student achievement in select subject(s) are significantly higher in FCAR group in comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any.

### **Methodology**

The study was completed in two phases, a survey phase leading to an experimental phase.

#### **Phase 1: Survey**

The first phase is an explorative survey of the protective and risk factors among secondary school students, and finding the relation between risk factors and academic achievement. Development and finalization of tools, identification of school subjects vulnerable to risk and identification of school subjects influenced by protective factors were the major events in this phase.

**Sample used in survey phase**

Survey was conducted among secondary school students of Malappuram district. Six hundred and twenty students drawn from 15 randomly selected standard VIII classes constitute the sample. Data from 478 students that were complete in all respects were used for analysis.

**Measures used**

The study employed three sets of instruments for measuring (1) risk factors, (2) protective factors, and (3) academic achievement. Specifically the study developed and used the following sets of tools viz.,

- i. Scales of risk factors
- ii. Scales of within-child protective factors
- iii. Scales of family protective factors, and
- iv. Scales of school protective factors

Measures of achievement were from teacher made tests.

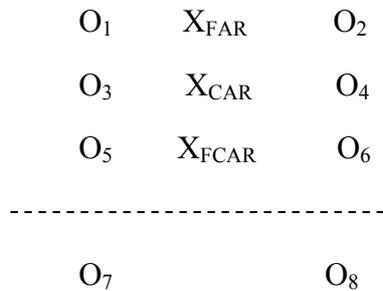
**Phase 2: Testing the effectiveness of intervention for inculcating academic resilience**

This phase employed a quasi-experimental design to test the effectiveness of intervention for inculcating academic resilience via fostering the protective factors. This phase is consisting of the development of intervention for fostering academic resilience, implementation of the intervention, and testing its effectiveness.

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### **Design of experimentation**

A quasi-experimental Pre-test – Post-test Control Group Design as depicted below is used.



Here,

O<sub>1</sub>, O<sub>3</sub>, O<sub>5</sub>, and O<sub>7</sub> are the pre-tests on the dependent variables.

X<sub>FAR</sub>, X<sub>CAR</sub>, X<sub>FCAR</sub> are the experimental treatments.

O<sub>2</sub>, O<sub>4</sub>, O<sub>6</sub>, and O<sub>8</sub> are the two sets of post-tests (immediate and delayed) on the dependent variables.

The groups were matched on academic achievement (total and mathematics), and on dimensions namely child-risk and family-risk.

### **Sample used in experimental phase**

For experimental treatment, one among the 10 schools sampled for the survey was randomly selected. In this school, four classes of standard VIII, from among the eight classes, approximately matching on child-risk, family-risk, and academic achievement (total and mathematics) were used in the experimental phase. In each class, data from 30 students, purposefully drawn to statistically match the four experimental groups on pre-experimental risks and achievement measures, only were used in analyzing the effectiveness of the intervention.

### **Programme for Fostering Academic Resilience**

The study developed a three-level intervention viz., FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Child cum Family focused intervention for fostering Academic Resilience) for fostering academic resilience. It composed of in and out of classroom activities, protective factor awareness programme to parents, and utilization of community resources. This collaborative intervention programme of students, parents, and community resources is based on the resilience literature and protective factors identified from survey phase. Twelve resilience-enhancing individual and group activities in 29 lessons put into operation in steps viz., Readiness, Protective Factor, Focus, Orientation, Features, Organization, Task and Reflections were the key treatment in two experimental groups, viz., CAR and FCAR. FAR and FCAR groups received parental awareness programmes utilizing community resources, and written communication to parents, apart from applying informal feedback channels.

### **Statistical Analyses**

The techniques of analysis of data employed in this study are the following.

1. Analysis of Variance (one-way)
2. Analysis of Covariance
3. Two tailed test of significance of difference between means
4. One tailed test of significance of difference between means

### **Scope of the Study**

Study identified individual, familial, school, and community factors that debilitate students' performance in school by reviewing resilience literature and studies on correlates of student outcomes in Kerala. The study included multiple risk factors, both distal and proximal, from within-child, family and school domains and tested whether they affect student outcomes in school achievement in four subjects,

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and twelve socially and educationally desirable qualities and conditions namely protective factors. The study discovers school subjects significantly affected by risk from the three domains. The study further spots out both internal assets of the individual and external strengths in the environment of secondary school students.

Combining the survey design with a quasi-experimental Pre-test – Post-test Control Group Design, this study draws valid findings that are generalisable to the population. Survey sample was drawn using multistage sampling, applying random selection at educational district, school and classroom level, with practical precautions to draw a representative sample of the population of rural secondary school students in Kerala.

The study developed reliable and valid scales for measuring risk sourced from within-child, family and school. The study further developed reliable and valid scales of within-child protective factors, scales of family protective factors and scales of school protective factors that can be further used among secondary school students in Kerala, and elsewhere after revalidation. An intervention programme, with twelve resilience-enhancing individual and group activities in 29 lessons, that enhances internal assets of the individual-cognitive, behavioral, and emotional abilities- and external strengths in the family environment, that equip academically at-risk students, especially in rural adolescents was developed. The internal assets and external strengths acquired by undergoing the programme are found retainable. The programme can be adopted by teachers and other interested adults in other areas for helping their students to perform in spite of the adversities.

Combination of the survey cum experimental design, with three treatment groups plus control matched on academic achievement (total and mathematics), and on child-risk and family-risk, helped to conclude that a collaborative student-cum family centered intervention will help significantly enhance student achievement in mathematics among students facing personal, familial and institutional risk.

## **Limitations**

Conceptualization of the study is done by bearing in mind the secondary school student population in government and government-aided sectors in Kerala. However, for practical reason, the sample is drawn from standard VIII students in Malappuram district only. Further, the experimental sample is drawn from a single rural government school in that district. Since the district is geographically located in the centre of the state of Kerala and 20 percent of school student population in Kerala at present belongs to this district, the findings of the study will be generalisable to the larger school population of the state, and to those with similar socio-educational situations.

There are multiple protective factors, more than 140, which could be identified by the researcher from literature. For practical reasons, through a categorization based on the importance given and frequency of use of them in literature these were reduced into twelve at first and then to ten during the experimental phase. This was a judgmental process on the part of the researcher and other researchers can arrive at very different list of protective factors. The study has taken care to pool protective factors such that the qualities mentioned as protective factors not selected for the study are as far as possible inclusive in those selected.

The four groups used for the experimentation could be matched prior to intervention with regard to four relevant variables, viz., academic achievement (total), and achievement in mathematics, child-risk and family-risk. The other relevant variables namely protective factors could not be matched for the groups, since, it is practically highly difficult, if possible, to match the four intact groups on another 10 variables apart from the four already used for the purpose. Hence, to nullify any pre-experimental differences on these variables and to draw valid inferences regarding the effect of the treatment on the protective factors, control-treatment comparison is done using gain score calculated as the pretest-posttest differences (rather than differences in post-test scores).

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Teachers can promote educational resilience. Teachers are powerful stakeholders in making their students take choices, acquire knowledge and skills and achieve a fulfilling life. As the intervention programme was considered for four select classes among the 8 in the select school, and participating the teachers in the process would affect the control group in which also these teachers are teaching, teachers' co-operation in this study is limited to providing the data on achievement and providing post-intervention informal feedback to the researcher. The programme for intervention was largely conducted by the experimenter interacting with students' sample, and in collaboration with the parents, head teacher and community resources like local self-government representatives, alumni members, and educational experts in the locality.

Longer, multilayer, multi-component community-based intervention models (Weissberg & Greenberg, 1998) evaluated through descriptive, non-experimental strategies (Zigler & Styfco, 1993; Weissberg & Greenberg, 1998) are reported to effect sustainable change in both individuals and systems. But for practical reasons the study is of moderate duration and focused more on the inculcation of protective factors in students by inviting the maximum participation of students, which turned out to be effecting retainable raise in the protective factors.

This research explores whether certain conditions called risks and qualities within the individual, family and school influence certain socially significant developmental outcomes (here academic achievement), and whether a scheme of interventions enhance quality referred to as protective factors and hence the desired outcome among secondary school students with risk. Hence, the reviewed literature in this study falls into three broad areas namely risk factors, protective factors, and academic resilience. Investigator compiled a review that embraces the emergence of the concept of resilience, childhood resilience, and academic resilience. Theoretical stances of pioneers in the resilience research on the different risk conditions under which resilience become necessary, and the protective factors that are the real sources of resilience are detailed. The major issues, methods and strategies in studying resilience and the emerging directions of resilience research are added. Further, relevant studies are abstracted and conclusions drawn.

The reviewed literature shows that resilience is not a new phenomenon. The concept of individual resilience in the face of adversity has been around for a very long time as evident in myths, fairy tales, art and literature over the centuries that portray heroes and heroines (Campbell, 1970). Films and stories are plenty with individuals who overcome difficulties successfully. However, developmental psychologists recognized the importance of resilience only during 1970s-1980s. The notable theoretical contributions on resilience were made during 1970s by developmental scientists like Garmezy (1971, 1974), Anthony (1974), Murphy (1974), Murphy and Moriarty (1976), Rutter (1979), and Werner and Smith (1982). They focused attention on children at-risk for problems and psychopathology who nonetheless succeed in life (Masten, 1999). Later on, the concept of resilience was enriched with the works conducted by an array of researchers on protective factors. The documented literature shows that the study of 'resilience' has great significance in organizing programmes, policies and interventions directed at promoting competence and preventing problems in the lives of children.

From the longitudinal study conducted by Werner and Smith (1988) and from the literature on school effectiveness by Rutter, Maughan, Mortimore, Ouston, and Smith (1979), Comer (1984), Edmonds (1986), and from the findings of the ethnographic studies (Heath & McLaughlin, 1993; Weis & Fine, 1993), it is clear that characteristics of school, family and environment can contribute to manifestation of resilience.

### **Resilience: Origin, Definition and Ambiguities**

In this section etymology of resilience, its psychopathological origin, continuing debates about uncertainty about the concept of resilience are discussed along with various definitions of the concept.

#### **Etymology of resilience**

Resilience, the ability to bounce back or cope successfully despite substantial adversity, though a relatively new concept to explain human behavior, has received significant attention from various domains (Rutter, 1985). The word “resilience” originated from the Latin word “*resilio*”, which means ‘to jump back’ (Klein, Nicholls, & Thomalla, 2003). There is no equivalent word for resilience in some languages; for example, in Spanish there is no comparable word for resilience. They use the phrase ‘*la defensa ante la adversidad*’ (defense against adversity).

Concept of resilience stems from disciplines of psychiatry and psychology, especially early psychiatric literature on children invulnerable to adversities principally by Norman Garnezy, Emmy Werner and Ruth Smith (Waller, 2001; Johnson & Wielchelt, 2004); though ecology (Batabyal, 1998), and physics (Van der Leeuw & Leygonie, 2000) are also referred to as the source disciplines of this concept.

The term resilience is used in a variety of disciplines viz., ecology and conditions of environment, microbiology, cellular regeneration, materials processing, engineering, business, economics and stock market, nursing and

medicine, psychology, anthropology, sociology, and psychiatry, apart from education and child development. Literature on psychology and psychiatry is rich with the term resilience.

During the past two decades, research on resilience in human beings flourished in the areas of developmental psychopathology, sociology, psychology and anthropology; primarily by qualitative approaches to unveil the resilience, especially in children. Hence, the reviewed literature requires mentioning the changes in the concept as viewed from the perspectives of these disciplines. Also, emphasize during different periods of the development of resilience literature was different. Hence, the literature review adopts a historical tracing out of the concept first.

### **Psychopathological Origin of Resilience**

Psychological resilience is a concept originated from the field of psychopathology during 1970s; specifically in the literature on schizophrenia. The empirical literature on schizophrenia constitutes a salient founding base for the development of resilience (Masten, Best, & Garmezy, 1990).

By 1960's, psychologists and psychiatrists interested in the etiology of psychopathology had started to study children at-risk for serious problems because of their biological heritage, prenatal hazards or their environments. The pioneers in the field of resilience concentrated on analyzing risks and negative effects of adverse life events on children viz., divorce, abuse, neglect or war. Investigators observed that some at-risk children were developing well by successfully adapting to adversities. In 1962, Murphy argued for a change in the focus of the research on individual difference in children. Murphy's words and researches on the schizophrenics had a strong impact in the field of psychology. The historical bases for the concept of invulnerability or resilience were established in early 1970's (Garmezy, 1971; Garmezy & Neuchterlien, 1972; Anthony, 1974; Garmezy, Masten, Nordstrom, & Terrorase, 1979). Later, investigations of specific

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populations of resilient children were carried out by Garmezy (1974), Garmezy and Rutter (1983), Anthony (1987) and Werner and Smith (1988). During 1972, the systematic study of resilience in psychology emerged from the study of children at-risk for problems and psychopathology (Masten & Garmezy, 1985; Masten, 1999). Investigators were Garmezy (1971, 1974), Anthony (1974), Murphy (1974), Murphy and Moriarty (1976), Rutter (1979), and Werner and Smith (1982).

By the 1970's and 1980's researchers have discovered that schizophrenics were characterized by a pre-morbid history of relative competence at work, social relations, marriage and capacity to fulfill responsibility (Garmezy, 1970; Zigler & Glick, 1986), and that the aspects of pre-morbid social competence might be viewed as prognostic of relatively resilient trajectories.

During the emergence of systematic psychology in 19<sup>th</sup> and early 20<sup>th</sup> centuries, utmost interest of the psychologists was on individual adaptation to the environment. Concept of resilience is evident in theories of natural selection to Freud's psychoanalytic ego psychology. Since the middle of the 20<sup>th</sup> century, the field of psychology dealing with the aspects of positive adaptation was dominated by research on risk and the treatment of symptoms. 20<sup>th</sup> century psychology concepts like mastery motivation, competence and self efficacy also focused on positive aspects of adaptation in development (Masten & Coatsworth, 1995). Case studies conducted by Focht and Beardslee (1996) and Devlin and O'Brien (1999) highlighted how children behave and live in presence of negative life events like severe stress and adversity leading to mal-adaptive functioning, though some children challenge these situations and show resilience (Rutter, 1985).

The focus of the research conducted by Garmezy (1971, 1974), Anthony (1974), Murphy (1974), Murphy and Moriarty (1976), Rutter (1979), and Werner and Smith (1982) was the phenomenon of doing well in the context of risk and the successful high risk children were referred to variously as 'invulnerable', 'stress - resistant' or 'resilient'.

## **Vocabulary of resilience**

The vocabulary of resilience is a set of tools used for promoting resilience than a set of words that allows a person to make a discourse on it. If the adults have language proficiency in resilience, they will be able to help the children to identify resilient characters in themselves and others. An individual can use vocabulary of resilience to strengthen the feelings and beliefs associated with resilience and to guide the behavior of their own and that of their children. Children who have assimilated the vocabulary will be capable of recognizing resilience in themselves and others.

Some of the terms synonymous with resilience are invulnerable (Anthony, 1974; Cohler, 1987), adaptation and long-term success despite adverse circumstances (Felner, Aber, Primavera, & Cauce, 1985), persistence (Wilson-Sadberry, Winfield, & Royster, 1991), and positive coping (Nettles & Pleck, 1993).

In 1991, Alva coined the term ‘academic invulnerability’ to describe students who ‘sustain high levels of achievement, motivation and performance, despite the presence of stressful events and conditions that place them at-risk of doing poorly in school and ultimately dropping out of school.’

## **Defining Resilience**

A consistent theme among the dictionary definitions of resilience is a sense of recovery and rebounding despite adversity or change. It is "ability to recover from or adjust easily to change or misfortune" (Merriam-Webster Dictionary 2002, p. 596) or "the ability to recover quickly from illness, depression, change, or misfortune; buoyancy; the property of a material that enables it to resume its original shape or position after being bent, stretched, or compressed; elasticity", (American Heritage Dictionary, 2005). Word Net.com, a word defining Web site, adds "the occurrence of rebounding or springing back," and Cancer WEB's online medical dictionary defined resilience as "energy (per unit of volume) released upon

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unloading; springiness." Fraser (1991) described resilience as an individual's ability to bounce back to a normal state following adversity.

Like education, resilience is variously defined in extant-theoretical writings. Various authors define resilience as,

1. A dynamic process in which individuals demonstrate positive adaptation despite challenging or threatening circumstances (Masten, Best, & Garmezy 1990; Luthar, Cicchetti, & Becker 2000).
2. A dynamic developmental process that equips an individual to function adaptively in presence of adversities with the utilization of certain protective factors to minimize the effects of risk factors (Rutter, 1990; Cicchetti & Rogosch, 1997).
3. The capacity to cope with unanticipated dangers after they have become manifest, learning to bounce back (Wildavsky, 1991).
4. A fundamental quality of individuals, groups and organisations, and systems as a whole to respond productively to significant change that disrupts the expected pattern of events without engaging in an extended period of regressive behaviour (Horne & Orr, 1998).
5. The ability of an individual or organization to expeditiously design and implement positive adaptive behaviours matched to the immediate situation, while enduring minimal stress (Mallak, 1998).
6. An active process of self-righting, learned resourcefulness and growth-the ability to function psychologically at a level far greater than expected given the individual's capabilities and previous experiences (Paton, Smith & Violanti, 2000).
7. The process of capacity for or outcome of successful adaptation despite challenging circumstances (Masten, Best, & Garmezy, 1990).
8. An individual's successful response to risk (Rutter, 1987).

9. An inside out process that begins with one person's belief and emanates outward to transform whole families, classrooms, schools and communities (Fullen, 1993).
10. Universal capacity which allows a person, group or community to prevent, minimize or overcome the damaging effects of adversity (Grotberg, 1995).
11. The positive pole of the ubiquitous phenomenon of individual difference in people's responses to stress and adversity (Rutter, 1990).
12. A universal capacity which allows a person, group or community to prevent, minimize or overcome the damaging effects of adversity (Grotberg, International Resilience Project, 1994).
13. The human capacity and ability to face, overcome, be strengthened by and even be transformed by experiences or adversity (Resilience Net, 1997).
14. A child's mastery of age-salient objectives, in the face of adversity by drawing internal and external resources that enhance processes of adaptation specific to each developmental stage (Wyman, Cowen, Work, Hoyt-Myers, Magnus, & Fagan, 1999).

The above definitions help one to describe resilience as 1) a universal developmental process, 2) of positive adaptation 3) in response to risk or challenges. This positive adaptation is characterized by 4) not engaging in an extended period of regressive behaviour or enduring minimal stress, and it involves 5) utilization of certain protective factors, 6) of individuals, groups and organisations, by 7) designing and implementing positive adaptive behaviours to draw internal and external resources. This capacity of responding to, and, 8) transforming the whole families, classrooms, schools and communities, results in 9) psychological functions at a level far greater than expected, from 10) specific developmental stage.

According to Masten, Best, and Garmezy (1990) and Masten (1994) resilience can be applied to three kinds of phenomena:

1. Overcoming odds against successful development
2. Sustained competence in the presence of acute or chronic life stressors

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### 3. Recovery from trauma

Thus, resilience is a dynamic process encompassing positive adaptation within the context of significant adversity. Two conditions that lie behind this notion are: 1) Exposure to significant threat or severe adversity; and 2) Achievement of positive adaptation despite major assaults on developmental process (Werner & Smith, 1982; Garmezy, 1990; Masten, Best, & Garmezy, 1990; Rutter, 1990; Luthar & Zigler, 1991). Concept of resilience includes both positive and negative aspects. Words like 'successful', 'positive adaptation', and 'recover' denoting its desirable aspects; and the words like 'risk'; 'challenge'; 'adversity' and 'depression' denote its negative aspects. 'Adversity' is the most commonly used word to denote the pre-supposed negative condition for resilience to happen. Resilience has immense value in life because every human being has to face adversities. Resilience is the capacity to face, and overcome the hurdles in life. It helps individuals to become more strengthened.

### **Uncertainty about the Concept of Resilience**

Resilience being a still emerging and developing area of knowledge, controversy and debate regarding exact nature of resilience has not yet settled down. The meaning of resilience and its operational definition has been the subject of considerable debate and controversy over the years (Wang & Gordon, 1994; Masten, 1999; Luthar, Cicchetti, & Becker, 2000). Some of the areas still being debated about this concept are summarized below.

**1. Resilience: Trait or Process?** A controversy regarding the resilience is whether it is a trait or process; whether it is a trait present in varying degrees within individuals or a process that is developmental in nature (Smokowski, 1998). Originally, resilience was referred to as a personality trait. From the research conducted during 1980s and 1990s by Werner and Smith (1982), Werner (1984), Masten and Garmezy (1985), and Rutter (1993) it became clear that resilience is a phenomenon having a dynamic quality. Over the past two decades, resilience is

redefined as a dynamic, modifiable process (Luthar, Cicchetti, & Becker, 2000). Individual has to face new vulnerabilities with changing life circumstances that leads to the development of new strengths. Being dynamic, resilience varies throughout individual's life and from one person to another; a child resilient in one situation may not be resilient in another. However, coping successfully in one situation strengthens an individual's ability to cope in the future (Garmezy, 1993).

Masten (1994) recommended that the term resilience be used exclusively when referring to the maintenance of positive adjustment under challenging life conditions. Masten was against the use of the term "resiliency" in adverse life situations because this term carries the connotation of a personality trait. Present consensus about resilience is that it is a dynamic developmental process equipping the individual to function adaptively in presence of adversities with the utilization of certain protective factors to minimize the effects of risk factors (Cicchetti & Rogosch, 1997; Rutter, 1999; Luthar, Cicchetti & Becker, 2000).

Additional confusion regarding process versus trait may derive from the occasional use of the term "resilient children", even by scholars who conceptualize resilience as a dynamic process (Werner, 1984; Masten, Best, & Garmezy, 1990; Rutter, 1993). The phrase "resilient children" does not imply to a discrete personal attribute like intelligence or empathy. It refers to two coexisting conditions of resilience. 1) Presence of threat to a given child's well being and 2) evidence of positive adaptation in this child, despite the adversity encountered (Richters & Weintraub, 1990; Luthar, 1993; Luthar & Cushing, 1999).

**2. Resilience: Noun or Verb?** Emerging from the process vs. trait controversy is the confusion in how to label the person having resilience. Literature on resilience reveals the use of the word 'resilient' by scholars like Baldwin et al., (1990) and Gonzalez and Padilla (1997) who conceptualizes resilience as a dynamic process. Strong opinion was raised by researchers (Werner, 1984; Masten, Best, and Garmezy, 1990; Richters & Weintraub, 1990; Luthar, 1993; Rutter, 1993;

Luthar & Cushing, 1999) that the phrase 'resilient children' or the word 'resilient' may convey the meaning of a personality attribute as against the co-existence of two conditions i.e., presence of an adversity and successful adaptation in presence of it, therefore, it is better to use “a child possessing resilience”.

**3. Discriminating Ego resiliency Vs. Resilience:** Ego resiliency, a construct developed by Block and Block (1980), refers to a personal characteristic of the individual. It involves flexible, optimal coping or regulation. It refers to the dynamic capacity of individual to modify their modal level of ego control as a function of the demands of the environment. High ego resiliency is the resourceful adaptation to changing circumstances and contingencies, analysis of the fit between situational demands and behavioural possibilities and the flexible use of the available repertoire of problem-solving strategies. Ego resiliency encompasses a set of trait reflecting general resourcefulness and sturdiness of character, and flexibility of functioning in response to varying environmental circumstances.

The terms ego-resiliency and resilience differ on two major dimensions (Luthar, 1996). Ego-resiliency is a personality characteristic of the individual, whereas resilience is a dynamic developmental process. Ego resiliency does not presuppose exposure to substantial adversity, whereas resilience does so. In future research efforts, investigators should use the terminology with clear indication when their work is focused on a process and not a personality trait. Competence despite adversity is referred to by the term "resilience" and never "resiliency" which carries the misleading connotation of discrete personal attribute (Masten, 1994). Resiliency is used in the literature but resilience is the apt term because resilience is related to culture, ethnicity and gender and children and adults at-risk.

**4. Invulnerability Vs. Resilience:** Conceptions of resilience have changed over years. In some early writings (Anthony, 1974), those who adapted well despite multiple risks were labeled as 'invulnerable'. This was misleading because it implied that risk evasion was absolute and unchanging. As research evolved, it became clear

that positive adaptation despite exposure to adversity involves a developmental progress, such that new vulnerabilities and strengths often emerge with changing life circumstances (Werner & Smith, 1982; Masten & Garmezy, 1985). Individuals respond to different circumstances with varying degrees of resilience and vulnerability (Luthar, Cicchetti, & Becker, 2000; Waller, 2001). Thus, the term 'resilience' better describes the relative nature of the concept than the term 'invulnerable'(Luthar et al., 2000).

**5. Resilience: Natural or Nurtured?** In one view, resilience is an innate quality of the individual; in the other, resilience is a product of interaction between the individual's characteristics and family and social environments. Resilience is an enduring aspect of the person. Genetic and other constitutionally based qualities both determine and are in turn modified by life experiences (Wolff, 1995). Good intelligence plays a major part, as does an easy, adaptable, sociable temperament together with an appealing appearance. Such qualities that attract positive responses from others that in turn contribute to the inner sense of self-worth, competence and self-efficacy has been identified as vital components of resilience.

**6. Ambiguous Operationalization and Measurement.** The theoretical and research literature on resilience reflects little consensus. There are substantial variations in operationalization and measurement of its key constructs. Approaches taken to operationalize resilience have varied across laboratories (Cicchetti & Garmezy, 1993; Stouthamer-Loeber, Loeber, Farrington, Zhang, Van kammen, & Maguin, 1993; Gordon & Song, 1994; Kaufman, Cook, Arny, Jones & Pittinsky, 1994; Tolan, 1996; Luthar & Cushing, 1999; Tarter & Vanyukov, 1999). This is because, adversity conditions examined have ranged from single stressful life experiences like exposure to war to multiple negative events. Likewise, there is substantial diversity in defining positive adjustment among individuals at-risk. Resilience researchers have used two approaches to conceptualize the connection between conditions of risk and manifest competence. The first approach is person-based data analytic approaches - identifying individuals with high adversity and high

competence and comparing them with others having low adversity and high competence. The second approach calls of variable based analysis relies on either main effect models or those involving interaction effects - (Luthar & Cushing, 1999).

**7. Multidimensional Nature of Resilience.** Diversity of operational definitions has led to the question, whether the resilience researchers are dealing with the same entity or with fundamentally different phenomena (Kaplan, 1999). Some variability in methods is essential to expand understanding of any scientific construct (Luthar, 1996). Being multidimensional in nature, the dimensions of resilience will change according to the nature of adversities (Luthar, Cicchetti, & Becker, 2000). Therefore, researchers cannot hang on a single universal definition of resilience. While undertaking a study, the researcher should define both adversity and competence and should specify the approaches they used for defining it and also provide intellectually convincing justifications on the basis of conceptual and empirical grounds. Considering the evidence of construct validity for the existence of a hypothetical concept, research in the area of resilience appears to be in good standing (Carnap, 1950; Pap, 1953; Meehl, 1977).

Some high risk children manifest competence in some domains but exhibit problems in other areas, has led some scientists to question the veridicality of the construct. In studies of resilience, there should undoubtedly be some uniformity across theoretically similar adjustment domains, but not across those that are conceptually distinct (Luthar, 1996, 1998). Uneven functioning across domains is a common occurrence in the process of ontogenesis, such that a range of developmental outcomes is inevitably constructed within normal, abnormal and resilient trajectories. The evidence of uneven functioning across different domains carries a critical message for researchers to specify the particular spheres to which their data apply and must clarify that success in these domains by no means implies positive adaptation across all important areas (Cicchetti & Garnezy, 1993, Luthar, 1993).

Accordingly, researchers are increasingly using circumscribed terms such as "emotional resilience" (Kline & Short, 1991), "behavioral resilience" (Carpentieri, Mulhern, Douglas, Hanna, & Fairdough, 1993), and "educational resilience" (Wang, Haertel, & Walberg, 1994) and thereby bringing greater precision to terminology commonly used in the literature.

**8. Multiple Domains in Operationalizing Positive Adaptation.** Connected with multidimensional nature of resilience another complication is related to the process of defining "optimal" indicators of resilience within individual studies. Specifically, resilience research includes diverse adaptation domains as evidence, bringing in inconsistencies. Cicchetti and Rogosch (1996) recognized the notion of multifinality in developmental processes. Resilience researchers typically considered multiple theoretically important domains in operationalizing "positive adaptation." A common strategy is to include several stage - salient tasks on which, if successful, the child would be viewed as having met societal expectations associated with that life stage (Sroufe & Rutter, 1984; Cicchetti & Schneider -Rosen, 1986; Masten & Coatsworth, 1998). Among at-risk toddlers, indicators of resilience might include behaviors reflecting secure attachments to their caregivers and the development of an autonomous self (Sroufe, Egeland, & Kreutzer, 1990). For school-age children, appropriate indicators would be academic success and positive relationships with peers as well as adults (Masten, Coatsworth, Neumann, Gest, Tellegen, & Garnezy, 1995).

**9. Little Consensus on Protective and Vulnerability Factors.** Central concepts in resilience research are protective and vulnerability or risk factors. There is little consensus among models of resilience due to varied and inconsistent use of terms like "protective" or "vulnerability" factors. A range of inconsistencies has been noted in the use of pivotal terms like "protective" and "vulnerability" (Luthar, 1993; Luthar & Cushing, 1999). The earliest and most cogent descriptions of models of resilience (Garnezy, Masten, & Tellegen, 1984; Rutter, 1987; Masten, Garnezy, Tellegen, Pellegrini, Larkin, & Larsen, 1988) reserved the concept "protective" for

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effects involving interactions between specific attributes and risk, where an individual with a particular attribute was relatively unaffected by high versus low levels of adversity.

**10. Resilience may often be Unstable:** Research findings on resilience may often be unstable because statistics obtained from tails of continua are always unstable due to the presence of smaller numbers. Resilience researchers deal with two tails of continua i.e., high adversity and high competence. Two major issues must be considered while dealing with the instability of statistical findings on resilience (Gordon, Rollock, & Miller, 1990, Kaufman, Cook, Arny, Jones, & Pittinsky, 1994; Tolan, 1996). 1) The number of individuals one is dealing with depends on the criteria used to define high adversity and high competence in a particular study (Cicchetti & Rogosch, 1997). 2) When competence criteria are operationalized less stringently, the number of resilient children in a particular sample could be far from trivial (Cicchetti & Rogosch, 1997). Person-based analytic approaches present a different set of complication with regard to instability in research results. Variable based approaches rely on either main effect or interaction effect associations to detect protective factors.

**11. Resilience Vs. Positive Adjustment:** Some scholars who advocate for scientific parsimony contend that the notion of resilience adds nothing to the more general term “positive adjustment” and argue that the focus on resilience does not augment developmental theory. However, several studies have indicated varying antecedents of resilience as compared with positive adjustment in general (Rutter, 1990). Although the term resilience and the broader construct of positive adjustment overlap (Tarter & Vanyukov, 1999), there is considerable value in retaining resilience as a distinct construct (Luthar, Cicchetti & Becker, 2000). The notion of resilience represents a helpful heuristic in developmental science, for it provides a framework for thinking about development that differs from many classical theories (Luthar, 1996). Though specifying the achievement of positive adjustment in the

face of significant adversity, resilience encapsulates the view that adaptation can occur through trajectories that defy “normative” expectations (Cicchetti, 1996).

Another reason for retaining the conceptual distinctiveness of resilience is that the positive adjustment patterns occurring with, versus without, conditions of adversity often have different correlates and thus reflect distinct constructs (Luthar, 1998, 1999). Study of resilient trajectories carries substantial potential for ongoing refinements of existing theories of normal human development. Though pathways to “resilience” and “positive adjustment” will be judged to be more similar than different, yet recent findings suggest that assuming such congruence at this time would be pre-mature. Understanding processes contributing to positive adjustment under condition of adversity can help to broaden the understanding of developmental processes that may not be evident in “good enough” normative environments. Thus the resilience research can contribute to developmental theory. So in the ontogenesis of developmental research, retaining distinctions between resilience as opposed to positive outcomes in general is important.

**12. Empirically Derived Studies with Little Conceptual Recognition.** Progress in the area of resilience is seriously constrained as studies remain largely empirically derived as opposed to theoretical base. There is little conceptual recognition of the importance of multiple contexts in children’s development. The accumulation of more correlates of resilience and failure will not be helpful if it is done outside the context of serious theory building in human development (Rigsby, 1994).

### **From Resilience to Childhood Resilience and Academic Resilience**

From the foregoing account, it is clear that during the past decades, research on resilience flourished in the areas of developmental psychopathology, psychology, sociology and anthropology. Resilience is multidimensional in nature. Early years of development are very significant. Apart from home, atmosphere of the school and experiences gained from the school also influence the healthy growth of the child.

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School life helps the child to develop social and academic skills required to become good citizens and successful adults. But due to problems related with poverty, health and social conditions, many students experience academic failure. Owing to individual and environmental differences, individual children respond to adverse conditions in different ways. Though adversities create problems with academic achievement of students, some children perform well. Research on students who succeed in school despite the presence of adverse conditions has important implications for the educational improvement of students at-risk of academic failure. Research on resilience points out that some students are successful in school while other students of the same social and economic backing are not.

During the 1960's social theorists became more aware of the drastic condition surrounding the poor. With the help of ideas contributed by educational theorists and researchers, teachers developed instructional strategies for improving the academic performance of economically backward students. During these periods, social psychology was dominated by the construct of cultural deprivation. Social scientists examined the different social classes and their relationships and they labeled poor children and their families as 'deprived', 'underprivileged' and 'disadvantaged'. Socially and economically backward children were provided with maximum opportunities for achievement. Still the gap between the socializing experiences from home and community and those from the school was clear and wide. Thus, the academic barrier to economically disadvantaged children with multiple - risks persisted in 1960s.

During 1970's cultural deprivation paradigm was eclipsed by cultural difference paradigm. According to this perspective, poor academic performance of children from low income families were attributed to the conflict between the cultures of low-income, ethnic minority groups and the school culture. Emphasis of cultural difference paradigm was more on learning and teaching styles and the role of language.

During the late 1980s, the “at-risk” view has emerged. At-risk children means children who are different in many aspects from the normal. It can also be applied to any group of children who experience adversities that negatively affect their academic and future success.

The above mentioned three perspectives viz., cultural deprivation, cultural difference and at-risk have acted as a backing and contributed many studies emphasizing the improvement of academic performance of low-income, minority children and youth. Studies (Straus, 1983; Wallerstein, 1983; Goldstein, 1990; Watt, Moorehead-Slaughte, Japzon, & Keller, 1990; Pianta, Egeland, & Sroufe, 1990; Newcomb & Bentler, 1990; Garmezy, 1991) examined the influential role of poverty, educational disadvantage, and family environment on cognitive ability, language development, school achievement, drug use, criminal activity and employment. A new developmental model of psychopathology emerged as a result of these studies. This new model succeeded in addressing both vulnerability and resistance of individuals from infancy to adulthood. This developmental model was that some children are capable of escaping adversity without any damage.

Garmezy (1974), Garmezy and Rutter (1983), Anthony (1987), and Werner and Smith (1988) conducted investigation on specific populations of resilient children. In these studies children were classified as being at-risk of psychiatric disorders, delinquency and other negative life outcomes due to individual, family and environmental factors. These studies focused on the successfully adapted children.

Researchers in clinical psychology, psychiatry and child development contributed to the field of developmental psychopathology. Researchers like Rolf, Masten, Cicchetti, Neuchterlein, and Weintraub (1990) documented primary information regarding the phenomenon of psychological resilience in a number of different at-risk populations. A number of researchers studied about the at-risk children, for example, children exposed to family violence (Straus, 1983), children

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exposed to early parental death (Brown, Harris & Bifulo, 1986), children of divorced parents (Wallerstein, 1983; Watt, Moorehead-Slaughter, Japzon & Keller, 1990), children with family histories of mental illness (Goldstein, 1990), children exposed to high levels of maternal stress (Pianta, Egeland & Sroufe, 1990), drug addicted children (Newcomb & Bentler, 1990), children born at medical risk (O'Dougherty & Wright, 1990), and children exposed to poverty (Garmezy, 1991). These studies acted as powerful theoretical and empirical basis for developing new programmes in the area of educational research. Physical, socio emotional, cognitive, and environmental factors and their importance and suitability in the healthy development of an individual became clear. With the help of these findings one can identify ways for fostering and sustaining academic success of at-risk students; i.e., developing academic resilience in academically at-risk students. The questions emerged out of these studies were, what are the factors responsible for the survival of these children? What helps them to become immune to the negative factors which affect them? These questions focused on the individual strengths to face adversities.

#### **Defining Academic Resilience**

Academic resilience is relatively a new entrant to resilient literature. During the first half of the first decade of 21<sup>st</sup> century an internet search for “academic resilience” returned no results.

Academic Resilience refers to educational achievement outcome anomalies that occur after an individual has been exposed to statistical risk factors (Morales & Trotman, 2004).

The most widely used definition of educational resilience is stated as the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions, and experiences (Wang, Haertel & Walberg, 1994).

Concept of academic resilience originated from the works on psychosocial resilience and from the works of the pioneers in psychosocial resilience like Rutter (1987) and Garmezy (1991). Academic resilience researchers concentrate on the individuals who are doing well in the school related aspects in the context of adversities. Definitions of high achievement and risk factors vary from study to study. For example, Gordan (1995) looked at African-American students who were able to graduate from high school, whereas Gandara (1995) used more stringent criteria and studied low socioeconomic status Mexican Americans who went on to earn M.D.s, J.D.s, or Ph.D.s. Regardless of the specific criteria used, academic resilience focuses on anomalous or unlikely academic outcomes.

Academic resilience research also has a history of focusing on specific ethnic subpopulations, especially in United States. In addition to African Americans and Mexican Americans, other groups studied include East Asian immigrants (Gibson, 1986), Puerto Ricans (Taylor & Wang, 2000), Native Americans (Heavyrunner & Marshall, 2003), and Asian-Americans (Crosnoe & Glen, 2004). The mission of researching and understanding academic resilience is to learn about and spread resilience to underachieving groups (Milstein & Henry, 2000; Gardynik & McDonald, 2005).

### **Integration of Major Frameworks that Guide Research in Resilience**

Thus far, three major frameworks have guided the research on resilience. This triarchic framework is the basis of much research on resilience (Masten, Garmezy, Tellegen, Pellegrini, Larkin, & Larsen, 1988, Wyman, Cowen, Work, & Parker, 1991; Seifer, Sameroff, Baldwin, & Baldwin, 1992; Fergusson, Horwood, & Lynskey, 1994; Fergusson & Lynskey, 1996; Cowen, Work, & Wyman, 1997; Luthar, 1999). These three frameworks relates to 1) Reciprocal associations among diverse influences, 2) Child's adjustment status across different spheres, and 3) Multiple levels of influence on children's adjustment.

### **Community, family, and child framework**

The first guiding principle is identified by Garmezy (1985) and Werner and Smith (1982, 1992), in which salient protective and vulnerability processes affecting at-risk children are viewed as operating at three broad levels, viz.,

1. At the community level ,e.g.:- neighborhood and social supports
2. At the family level, e.g.:- parental warmth or maltreatment
3. At the child level, e.g.:- traits such as intelligence or social skillfulness.

### **Ecology and the child**

The second set of guiding perspectives consists of transactions between the ecological context and the developing child, such as Sameroff and Chandler's (1975) ecological theory, Bronfenbrenner's (1977) transactional perspective, and Cicchetti and Lynch's (1993) integrative ecological transactional model of development.

In the ecological transactional model, contexts such as culture, neighborhood and family are conceptualized as consisting of a number of nested levels varying in proximity to the individual. These levels transact with each other over time in shaping ontogenic development and adaptation. Such contextual surrounds and transactional interchanges have formed the conceptual bases for resilience research involving diverse risks including family poverty, experiences of maltreatment, and others (Crittenden, 1985; Baldwin, Baldwin, Kasser, Zax, Sameroff, Seifer, 1993; Cicchetti & Lynch, 1993; Cicchetti, Rogosch, Lynch, & Holt, 1993; Connell, Spencer, & Aber, 1994; Leadheader & Bishop, 1994).

### **Organizational perspective**

The third guiding perspective is put forward by Cicchetti and Schneider-Rosen (1986), and Sroufe (1979) and it is the structural organizational perspective. Central idea in this perspective is the belief that generally there is continuity and

coherence in unfolding of competence over time. Distal historical factors and current influences are important to the process of development, but active individual choice and self-organization are believed to exert critical influences on development (Cicchetti & Toth, 1994). A number of resilience researchers have adopted the organizational perspective as their guiding theoretical approach (Egeland & Farber, 1987; Cicchetti, Rogosch, Lynch, & Holt, 1993, Egeland, Carlson, & Sroufe, 1993, Gest, Newmann, Hubbard, Masten, & Tellegen, 1993, Wyman, Cowen, Work, & Kerley, 1993; Luthar, 1995, Masten, Coatsworth, Newmann, Gest, Tellegen, & Garmezy, 1995; Cicchetti & Rogosch, 1997; Masten, Hubbard, Gest, Tellegen, Garmezy, & Ramirez, 1999; Luthar & Suchman, 2000).

### **Integrative model**

Many fundamental developmental processes operate in similar ways among low and high risk children (Graham & Hudley, 1994; Graham & Hoehn, 1995; Luthar, 1999) so that attempting to derive theories that would apply only to “poor children” or at-risk families is unnecessary (Garcia Coll, Lamberty, Jenkins, McAdoo, Crnic, Wasik, & Vasquez, 1996). What is important is that when broad developmental theories are brought to bear in resilience research, they should specifically expand to consider prominent features within the particular adversity under study (Luthar, 1999). Such a theory – extension effort is presented by Garcia Coll et al., 1996) as an integrative model for studying minority youth.

Within social stratification theory, this model emphasizes eight major constructs that affect the development of minority children, viz,

- 1) Social position variables; race, gender
- 2) Racism and discrimination
- 3) Segregation; residential and psychological
- 4) Promoting or inhibiting environments; school and health care
- 5) Adaptive culture ;traditions and legacies
- 6) Child characteristics; age, temperament

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- 7) Family values and beliefs
- 8) Children's developmental competencies

The attraction of this model lies both in the centrality accorded to several constructs as well as in the clear specification of paths of influence.

### **Academic Risk: The Concept, Categories and Measurement**

With the emergence of developmental psychopathology as a new discipline, a “vocabulary of risk” came in to existence. During the 20<sup>th</sup> century, the field of psychology was dominated by research on risk and the treatment of symptoms of at-risk children. During the last decade as well, much importance was given to ‘children and families at-risk’ by public as well as educationists. This section discusses connection between resilience and risk, types of risks, issues in risk measurements and measurement issues of multiple risks in particular.

### **Risk factors and Resilience**

Resilience is closely allied with the term at-risk. Though originated in the field of medicine, the term at-risk is frequently used in the field of education. Many factors play their role in the academic failure of a student. If students are able to withstand the risk factors, they demonstrate academic success. From the olden time onwards, children of poverty have been labeled as academically at-risk (Natriello, Mc Dill, & Pallas, 1990). Poverty is the most adverse condition causing poor academic achievement and it overlaps with other conditions. Schools that serve children of poverty and colour may fail to provide a supportive climate. Schools at times introduce risk factors (Boykin, 1986) through low academic expectations, inadequate serving of educational resources and through discontinuity between the pattern and values of low income and mainstream families. So individual, familial and school characteristics and interaction between them may contribute to academic at-risk condition of students.

Risk is an elevated probability of an undesirable outcome. Risk factor is a measurable characteristic in a group of individuals or their situation that predicts negative outcome in future on a specific outcome criterion. Stressful life events like poverty, homelessness, parental divorce, natural disasters, and teenage pregnancy are examples of risk factors. Cumulative risk is the total effect of multiple risk factors. Risk gradient is a visual depiction of risk or cumulative risk showing how a negative criterion of outcome rises as a function of rising risk level.

All individuals are at-risk in one situation or other. Everyone has to face one or other adversities. At-risk student is one who is in danger of failing to complete his or her education with adequate academic skills, knowledge, and attitudes to function as a responsible citizen of his or her community (Kawakami, 1995).

Low socio-economic status, ethnic minority status, drug addiction, marital discord, single parent family status, psychological history of family, legal problems, lack of social support, poverty and the like create number of psychological problems to children related with their health, education, and well-being (Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987; Brooks-Gunn, 1994). If one experience a high number of risk factors, it may lead to adjustment problems, though all risk factors do not possess equivalent meaning, multiple risk studies that take numerous risk factors in joint consideration will better account for children's developmental outcomes.

### **Single Vs. Cumulative Risks**

In the early studies of resilience, researchers concentrated on a single indicator for defining risk. But individuals have to face more than one risk factor at any given time during life. Therefore, there will be an additive influence of these risk factors on the development of individual. Sometimes all of these risk factors result in similar problems (Masten & Wright, 1998). Therefore, a shift was happened from studying single risk factor to cumulative risk. As mentioned earlier, multiple risk factors indicate that if a child is experiencing increased number of demographic and psychological risk factors, there will be an increased chance for

developing adjustment problems in that child (Rutter, 1979). All risk factors do not possess equivalent meaning and also present different levels of experience. In such a situation, multiple risk studies take numerous risk factors in joint consideration and the accumulation of risk has been shown to account for children's developmental outcomes (Sampson & Laub, 1994).

There are two major forms for cumulative risk assessment, viz., risk indices and stressful life experience scores. Cumulative risk score results from the summing up of risk factors that a child experiences in life. Life stress score results from the addition of a number of negative life events that a child encountered during a period of time. Risk factors increase the possibility of experiencing poor outcome by the children.

### **Global Vs. Local Risk Factors**

For utilizing the resilience concept in a therapeutic way, it is very important to identify specific risk and protective factors. Research in this area identified both global and local risk factors. Global risk factors are genetic influences, parental mental illness, marital difficulties, parenting problems, and parental illness (Devlin & O'Brien 1999). Local risk factors are disturbances in individual's personal functioning that leads to interpersonal and attachment difficulties (Beardslee, Versage, & Gladstone, 1998)

### **Uncertainties in Risk Measurement**

Study on influence of the multiple risk factors on child's intellectual development and psychological symptoms (Werner & Smith, 1982) revealed that, if a child has to face a number of prenatal and environmental risks, there will be significant decline in the cognitive and behavioral outcomes in his or her middle childhood and adolescence. Likewise, an assessment of ten risk factors that contribute to the psychological functioning of mother, family socio-economic status, minority status, family interaction style, life events, family size and family support

(Sameroff et al., 1987) revealed that presence of a number of risk factors simultaneously predicted the IQ and social emotional status of the children significantly better than any one risk factor or subset of these factors. In short, presence of the risk factors will predict different levels of adjustment. But there are exceptions, i.e., always presence of multiple risk factors will not lead to problems for all children.

Some children will be resilient to multiple risks, showing little symptoms and overall positive adjustment (Werner & Smith, 1982; Masten, Best, & Garmezy, 1990; Cowen, Work, Wyman, Parker, Wannon, & Gribble 1992; Masten, 2001). So, researchers who examine the effects of multiple risks include measures of both positive and negative adjustment outcomes. This helps them to identify factors that classify children resilient or vulnerable to the effects of multiple risks (Lengua, 2002). In research on resilience, measurement of outcome will help to determine which mechanisms are the best predictors of resilience (Luthar & Zigler, 1991). But there is a little consensus regarding the measurement of outcome in resilience research (Luthar, Cicchetti, & Becker, 2000). In some cases, resilience might be measured as the absence of adjustment problems, the presence of positive adjustment or both.

When multiple outcomes are assessed, a critical question to be considered is whether these should be examined separately or integrated and decision in this regard must be based on the conceptual distinctness of the domain in question. If the assessed outcomes represent largely discrete constructs, it is best to examine them separately. For example, there is accumulating evidence that among inner-city youth, resilience as indexed by academic striving may have little to do with resilience as indicated by peer acceptance; the two may sometimes counter to each other (Seidman, Allen, Aber, Mitchell, & Feinman, 1994; Luthar, 1995; Luthar & McMahon, 1996). In such instances, it is most meaningful to examine vulnerability and protective processes separately for major outcomes and to discuss findings in terms of the particular domain under consideration.

In situations where the adversity condition presents particularly high risk for some important outcomes, giving priority to these over others is logical (Luthar, 1993). However, in many instances, all areas will be equally important. In such cases, multiple outcome - all conceptually critical - can be accorded equivalent salience and either considered separately or integrated in to a composite is theoretically justified for interpreting results. This strategy is exemplified in the Zigler Phillip's Social Competence Index (Zigler & Glick, 1986) which involves composites based on several theoretically interlinked areas of adult functioning including occupational, educational and marital history. Composite constructs such as these also have been profitably examined in research on childhood resilience, with incorporation of multi-method, multi-informant strategies of assessment (Pianta, Egeland, & Sroufe, 1990; Richters & Martinez, 1993).

Another question with regard to competence criteria is whether labels of resilience necessitate excellent versus average levels of competence and here also choices must be conceptually guided by nature of the risk studied. When the stressor entails severe to catastrophic events (Gest, Reed & Masten, 1999, Masten, Hubbard, Gest, Tellegen, Garmezy, & Ramirez, 1999), the maintenance of near-average functioning should suffice. On the other hand, when risks experienced generally fall in more moderate range (Luthar, 1991), evidence of superior functioning in conceptually important domains may be required to justify labels of resilience.

### **Ontogenetic instability**

According to some researchers, resilience is a phenomenon having tenuous scientific utility because it reflects ontogenetic instability. There can be considerable ontogenetic instability in the phenomenon of resilience, for individuals at high risk rarely maintain consistently positive adjustment over the long term.

Some at-risk children excel at a particular situation in time, many others manifest substantial deterioration in their levels of adaptation (Coie, Watt, West,

Hawkins, Asarnow, Markman, Ramey, Shure, & Long, 1993; Tolan, 1996; Kaplan, 1999; Tarter & Vanyukov, 1999). At-risk children who excel in critical domains continue to reflect generally positive adaptation profiles over time. A longitudinal research reveals that across a period of over thirty years, resilient children maintained high functioning in everyday life (Werner, 1994, 1995). Results of diverse investigations by Egeland, Carlson, and Sroufe (1993), Cowen, Wyman, Work, Kim, Fagen, Magnus (1997), Masten et al., (1999) indicate that resilience is not necessarily a transient or ephemeral phenomenon (Luthar, 1998). As resilience is clearly not a static state empirical attentiveness to ontogenetic fluctuations is critical (Cicchetti, Rogosch, Lynch, & Holt, 1993, Coie et al., 1993, Egeland et al., 1993).

### **Statistical risk Vs. Vulnerability**

The construct of resilience presupposes exposure to significant risks. Uncertainties in risk measurement bring difficulty in determining whether all individuals viewed as resilient experienced comparable levels of adversity. Two salient issues raised in this regard are, 1) concept of statistical risk versus actual risk (Richters & Weintraub, 1990) and 2) subjective versus objective ratings of risk (Bartelt, 1994; Gordon & Song, 1994). Concerns regarding statistical versus actual risk stem from the widespread practice in resilience research of treating a particular index as reflecting adversity if it shows significant statistical associations with child maladjustment (Masten et al., 1990; Richters & Weintraub, 1990).

### **"Distal" and "proximal" levels of risk**

As with definitions of competence, several perplexing issues arise around operationalizing risk in studying stress-resistance. Researchers have emphasized the need to distinguish between "distal" and "proximal" levels of risk (Baldwin, Baldwin, & Cole, 1990; Masten, Best, & Garmezy, 1990; Richters & Weintraub, 1990).

Distal variables, such as socio-economic status or parental mental illness are not directly experienced by the child, but are mediated by proximal variables such as ineffective parenting or conflict between parents (Masten, 1994). Conceptual difficulties associated with using distal variables in risk research have been discussed at length by Richters and Weintraub (1990).

Even with so-called "proximal" variables, their high-risk nature cannot necessarily be assumed a priori. For example, authoritarian parenting styles may constitute a high risk proximal variable among some but not all families. Among disadvantaged children living in dangerous environments, favourable outcomes have been found to be associated with restrictive and authoritarian family patterns rather than with democratic ones (Baldwin, Baldwin, & Cole, 1990).

A second concern with defining proximal risk environments is that in practice, it is impossible to identify precisely all the proximal factors that affect outcomes, or to demonstrate conclusively that any given variable does, in fact, constitute a risk factor. In the context of ineffective parenting, for example, considerable evidence show that children in the same family not only receive differential treatment from their parents (Daniels & Plomin, 1985; Plomin & Daniels, 1987; Reiss, Plomin, & Hetherington, 1991), but also differ in how they influence, and respond to, their parents' behaviours. For instance, while active girls may elicit especially positive behaviors from parents, this is not the case for active boys (Maccoby & Jacklin, 1983).

In short, generalization that children exposed to "proximal" variables are inevitably at-risk is open to question, just as inferences that "distal" variables such as parental mental illness invariably represent high levels of risk. Given the complex web of factors influencing children's psychosocial development, it cannot be assumed that any environmental risk factor-wherever it falls on the distal-proximal continuum-carries equivalent levels of risk to all children exposed to it. Understanding of childhood resilience would be facilitated to the extent that distal

risk factors are examined in terms of the proximal factors that may mediate their effects. The long term objective of most studies on stress-resistance is to derive implications for intervention, a goal best achieved with data indicating specific processes, such as parental neglect or family conflict, via which global risk factors such as parental psychopathology might operate.

### **Measurement of multiple risks**

Commonly employed strategies to define risk in resilience research include 1) The life events or "daily hassles" approaches, that involve computing the number of negative events experienced by a child, 2) The use of individual stressful experiences such as parental divorce, and 3) Simultaneous consideration of multiple familial and socio demographic indices, such as impaired maternal psychological functioning, low parental occupation and income, absence of a parent, and minority group membership.

Empirical evidence indicates that cumulative variables often have a synergistic effect, wherein the effects of co-existing stressors far exceeds the effects of any single factor considered individually (Rutter, 1979; Sameroff & Seifer, 1983; Sameroff et al., 1987). When multiple risk indices are used in studies on resilience, for yielding an overall index of risk, the most straightforward strategy is a simple additive one.

In research by Sameroff et al., (1987) and Sameroff and Seifer (1990) a series of indices previously established to be high risk in nature were selected, such as high maternal anxiety, minority group status and large family size. Using simple counts of one versus zero, those risk indices faced by a particular child were added to compute the overall risk encountered. A similar additive strategy has been adopted with continuous data (Masten, Morison, Pellegrini, & Tellegen, 1990). In this case, scores on different risk scales were standardized, and these  $z$  scores were added to indicate the total risk faced.

Summative approaches to assessing risk are questioned on various grounds. For example, it is argued that the items added have high overlap (e.g. poverty and minority group status), or they differ dramatically in their seriousness as risk factors. Problems such as these, however, are inherent in most psychological scales. For example, in current measures of life events, or even among self-report measures on symptoms or personality, multiple items on a scale are added; the items have high shared variance (they must do so, in the interest of internal consistency); and the items often vary considerably in how strongly they are related to a particular outcome.

From a conceptual perspective, it might be argued that summated risk scores convey nothing about the specific processes via which these factors might affect adjustment. On the positive side of the coin, several factors argue in favour of using summative approaches to assessing risk. From a psychometric standpoint, "scales" involving summated risk variables have high face validity. They are also likely to be more reliable than measures involving individual risk factors since in general; increasing the number of items on a scale increases its reliability (Carmines & Zeller, 1979). With appropriate research designs and sufficiently large samples, additional psychometric properties of these "scales" such as internal consistency, test-retest reliability, and criterion validity could be established for specific high-risk groups. Conceptually, it has been argued that the inclusion of different levels of organization, i.e., the individual, the family and the cultural context, are necessary to achieve comprehensive definitions of risk (Sameroff & Seifer, 1990). Empirical data support this argument. In reality, biological or psychosocial risk factors rarely act in isolation and the simultaneous consideration of multiple stressors accounts for far more variance in outcomes than any one stressor considered individually (Sameroff et al., 1987; Masten, 1989; Rutter & Quinton, 1994; Sameroff & Seifer, 1990).

In some instances, overall correlations have been established between exposure to the risk and poor outcomes among the children, problems remain about

the specific life circumstances of different individuals in a particular sample (Cicchetti & Garmezy, 1993; Masten, 1994; Kaplan, 1999).

Individual differences in proximal process not necessarily invalidate resilience research that is based on global or distal risk indices (Luthar, 1993; Luthar & Cushing, 1999). An unusually well-functioning mother in one family, or the presence of a nurturing grandparent in another, may buffer the child against the risk. This led to the search for protective factors, that is, the location of a set of processes that distinguish a substantial proportion of the healthy children from the maladjusted ones (Gest, Newmann, Hubbard, Masten, & Tellegen, 1993). Therefore, the label "resilient" may sometimes be more appropriate for protective families than the healthy children within them (Baldwin et al., 1990). It is valuable to examine what differentiates relatively well functioning youth from those who face the adversities less positively.

Regarding the issue of subjective perceptions of risk in resilience research, Gordon and Song (1994), opined that the meaning of a particular adverse event to the experiencing individual can differ substantially from that of the resilience researcher (Bartelt, 1994). Some individuals may see themselves as being relatively well off, even though scientists may define their life circumstances as being highly stressful.

Concerns about subjective ratings are ubiquitous in psychological research and are not unique to studies of resilience. Ratings of parent-child relationships, or of peer relationships, vary considerably depending on whose reports they are based on, parent's, the target child's or an "objective" observer's (Achenbach, Mc Canaughy & Howell, 1987; Reynolds & Graves, 1989; Kazdin, 1990; Hart, Lahey, Loeber, & Hanson, 1994; Weiss, Suwanlert, Chaiyasit, Weiss, Walter, and Anderson, 1998).

Uncertainties regarding proximal risks in the lives of individual children or the dissonance between children's subjective perceptions and "objective" ratings, do

not fault resilience research that is based on probabilistic associations involving risk indices. If researchers have determined that the odds of maladjustment are high in the presence of certain risk, then try to determine the factors associated with relatively positive child outcomes and to examine the proximal processes by which the distal risk marker confers vulnerability on affected groups of children (O'Conner & Rutter, 1996).

### **From risk to resilience: The International Resilience Project**

The focus of the International Resilience Project was to identify risk factors to which children have to cope up. The intention of the studies concentrated on locating the damage happened to children and rendering services to develop them in presence of risks. During that time, researchers like Werner and Smith (1982) and Garmezy (1985) focused on some children who were well-adjusted, happy and successful while confronting with adversities. Such children wondered the researchers. Regarding this, the most important comment was from Frankenburg (1987). He opined at the Fifth International Conference on Early Identification of Children at Risk: Resilience Factors in Prediction, that the main theme of the four previous conferences was locating the problems of the children only. This may lead to an undesirable effect that their parents may think negatively about their children. So the focus of the Fifth International Conference should be the resilience and 'Self-righting factors' that will protect at-risk children from developmental hazards. This opinion shifted the focus of research from pathology to resilience. Another view in support of this was made by the Bernard van Leer Foundation (1994). The Foundation supported the conference held in the Kingdom of Lesotho in 1991, which concentrated on Building on People's Strengths: Early Childhood in Africa. Other national and international meeting on resilience focused on children who are able to overcome the odds.

## **Protective Factors:**

### **Definition, Sources, Categories, and Measurement**

The following sections discuss the definitions put forward by various resilience researchers, real sources of resilience identified by International Resilience Project, major categories and sub divisions of protective factors and contribution of chief resilience researchers in the realm of protective factors, and its measurement aspects.

### **Protective Factors and Resilience**

Though children are conquerable to continual risks (Werner & Smith, 1992; Garbarino, 1995; Boothby, Crawford, & Halperin, 2006), the relation between childhood risk and one's response to negative conditions in adult life is not ultimate (Higgins, 1994) because, some are more resilient than others. Having the opportunity to express one's imagination, to tell one's story; to connect one's inner experience, drive, call, and feelings to the outer world is a powerful protective factor in the lives of young people, especially those growing up with multiple challenges (Higgins, 1994).

According to bio-ecological model proposed by Bronfenbrenner (1979) and Bronfenbrenner and Morris (1998) development of child passes through multiple contexts and it is influenced by many factors at many levels including individual characteristics, family processes, environment and interaction of these factors. Adjustment of a child is affected by risk factors in a variety of domains (Greenberg, Kusche, Cook, & Quamma, 1998). The number of the risk factors present will determine the extent of adjustment (Sameroff & Seifer, 1990). Studies conducted by Werner and Smith (1982), and Wyman, Cowen, Work, and Parker (1991) have examined the contribution of individual characteristics to adjustment of children who are experiencing multiple risk factors.

Like the nature and action of risks, protective factors also have the same cumulative effect in lives of individuals. More the protective factors that are present in child's life, the more likely they manifest resilience. Educators should conceive resilience as something valuable that can be fostered throughout the development of a student through strengthening the protective processes at critical moments in his/her life. Case studies conducted by Focht and Beardslee (1996) and Devlin and O'Brien (1999) highlighted how children behave and live in presence of negative life events. Such severe stress and adversity will result in mal-adaptations in the functioning of children. But some children challenge these situations and show resilience. Rutter (1985) identified this point. This perspective forced to identify the protective factors that enable to minimize the effects of adversities.

Garmezy (1985) and Werner and Smith (1982, 1992), identified that the salient protective and vulnerability processes affecting at-risk children are operating at three broad levels, namely at the community level (e.g.:-neighborhood and social supports); at the family level (e.g.:- parental warmth or maltreatment); and at the child level (e.g.:- traits such as intelligence or social skillfulness).

The protective factors have cumulative effect on the life of an individual. If an individual possess many protective factors, he/she will be more able to display resilience. In short, protective factors are most significant vital factors in the development of resilience. Researchers like West and Farrington (1973), Rutter et al., (1979), Rutter (1984), Garmezy (1985), Anthony (1987), Masten, Best, and Garmezy (1990), and Gore and Eckenrode (1994) emphasized that caring and support across all three external systems namely family, school and community is the most significant variable throughout childhood and adolescence. In 1968, Erikson identified this point that caring and support is the basis for trusting relationship in life which acts as the foundation for healthy future development.

A primary focus of resilience theory is the identification of protective factors that lead individuals to overcome adversity and exhibit successful adjustment.

Protective factors include both individual and environmental characteristics that ameliorate or buffer a child's response to risk factors (Masten & Garmezy, 1985). Glasser (1979) argued that a key to the vast majority of human misery is the inability to locate and sustain satisfying relationships with one or more people. Recent research suggests that protective factors may have both genetic and environmental elements (Kim-Cohen et al., 2004). Rutter et al., (1979) suggested that caring and support across all the three external systems namely family, school and community are the most critical variable during childhood and adolescence.

### **Definitions of Protective Factor**

Protective factor can be defined as a measurable characteristic in a group of individuals or their situation that predicts positive outcome in the context of risk or adversity (Mc Millan & Reed, 1994).

According to Masten, Best, and Garmezy (1990) some factors of children's like attributes of personalities, temperaments and abilities make them capable to exploit their environment. These attributes can be considered as protective factors which will foster resilience through buffering the adversities and reducing the negative consequences of stressful life events.

From the growing body of research on resilience, the vital features identified are the internal assets of the individual and external strengths present within systems which support the growth and development of the individual. In the literature on resilience, both these features are termed as 'Protective factors' (Garmezy, 1985, 1994; Rutter, 1987; Gore & Eckenrode, 1994) or 'protective mechanisms' (Rutter, 1987). Protective factors are static entities and protective mechanisms are active processes.

Resilience is a term used to describe a set of qualities that foster the process of successful adaptation and transformation despite risk and adversity (Werner & Smith, 1992).

The phenomenon of resilience is closely tied to the concept of protective factors. Resilience refers to a dynamic process in which individuals demonstrate positive adaptation despite challenging or threatening circumstances (Masten, Best, & Garmezy 1990; Luthar, Cicchetti, & Becker 2000). Thus resilience refers to children who overcome adversity to achieve good developmental outcomes. Researchers have recognized that resilient children could teach us better ways to reduce risk, promote competence, and shift the course of development in more positive directions (Glantz, & Johnson, 1999).

Many factors have been identified as possibly having protective quality in children at-risk. Research exploring the interplay among multiple risk and protective factors has identified both internal and external resources in the successful adaptation of children at-risk. In her longitudinal study of children who had experienced multiple risks, Werner (1990) determined that one-third of the children grew up to become competent young adults. She described the successful children as protected from the stress in their backgrounds by a combination of individual and family or environmental protective factors. Protective factors identified within early childhood are more advanced communication, locomotion, and self-help skills. In addition, Werner and Smith (1982), Garmezy (1985), and Rutter (1987) viewed attributes of the child as making a substantial contribution to positive outcomes in the face of adversity. Specific attributes include the qualities of average or above-average intellectual development with good attention and interpersonal skills. As a result, from early childhood on, resilient children tend to have positive relationships with others, including competent peer friends (Werner, 2000). Other studies have also documented the protective role of positive peer relations with current and future competence (Hartup 1996; Ladd, Kochenderfer, & Coleman, 1996).

Other protective factors associated with successful outcomes of at-risk children are high parental expectations, caring and supportive family life, and opportunities for children to participate and contribute in meaningful ways (Garmezy, 1991; Werner, 2000). Researches has shown that children who attended

center-based preschool arrived at kindergarten with higher achievement and children's experiences with early literacy activities make a significant difference in cognitive development (Brody, Stoneman, & Flor, 1996; Reynolds, 2000; Lee & Burkam, 2002). Positive effects of high-quality, center-based programs on children's cognitive and language skills through the preschool years have also been demonstrated in experimental interventions for children from low-income families (Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000; Ramey, Campbell, Burchinal, Skinner, Gardner, & Ramey 2000). Decades of research has documented parents' critical role in children's literacy development (Chomsky, 1972; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991; Cairney & Munsie, 1995). There is emerging literature indicating that the presence of multiple protective factors is related to increased positive outcomes (Werner & Smith 1982; Radke- Yarrow & Sherman 1990; Garmezy 1991; Bradley Whiteside-Mansell, Mundfrom, Casey, Kelleher, Pope, 1994).

Researches conducted by Dohrenwend and Dohrenwend (1981), Garmezy (1983), Cohen and Wills (1985), Wheaton (1985), and Plancherel et al., (1994) and have concentrated more on some personal and environmental resources that have the capacity to buffer the negative effects of normative and non normative stress on health. These resources, whether internal or external are termed as protective factors (Plancherel et al., 1994).

Protective factors in the form of internal assets include social competence, problem solving skill, autonomy and a sense of purpose and future. These are the common characteristics displayed by the resilient children (Rutter, 1980, 1984, 1985; Waters & Sroufe, 1983; Garmezy, 1985; Werner & Smith, 1988; Masten, Best & Garmezy, 1990; Gore & Eckenrode, 1994; Consortium on the school - Based Promotion of Social Competence, 1994).

Protective factors in the form of external assets are the three primary systems in the world of child namely family, school and community. Among these external

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assets, in the case of the primary socializing agency of the child - family - the most important protective factors include the consistency and quality of care and support that a child experiences from the parents and siblings during infancy, childhood and adolescence.

According to Rutter et al., (1979) another important external protective factor is the school. If children from disadvantaged and broken families attend schools having good academic profile and attentive, loving and caring teachers, they will display resilient characteristics. Studies of Geary (1988), Werner and Smith (1988) and Coburn and Nelson (1989) revealed that individual teachers can play a significant role in the development of resilience in children. Another external protective factor named community can also play a vital role in fostering resilience in children through providing social support networks by kin and social service agencies.

Researchers like West and Farrington (1973), Rutter, Maughan, Mortimore, Ouston, and Smith (1979), Rutter (1984), Garmezy (1985), Anthony (1987), Masten, Best and Garmezy (1990), and Gore and Eckenrode (1994) opined that caring and support provided by external systems like family, school and community is the most significant variable throughout childhood and adolescence. Provision of care and support to children has so much importance in their healthy development and it forms the basis of developing trustworthy relationships throughout their life. This is supported by Erikson (1963) i.e., in the concept of trust vs. mistrust - as a stepping stone to the bright and healthy future.

Identification of both internal assets of the individual and external strengths present in the environment of the individual in which one grows and develops is a strong feature of resilience research. These internal assets and external strengths are referred as protective factors by Garmezy (1985, 1994), Rutter (1987), Gore and Eckenrode (1994) and protective mechanisms by (Rutter, 1987).

Werner and Smith (1982, 1992), Luthar and Zigler (1991), Werner (1993), and Rutter (1995) have conducted many research on at-risk populations and identified different protective factors as well as protective mechanisms that will help individuals to face adversities in life.

### **Individual characteristics contributing to adjustment of children at-risk**

It is vital to identify more specifically the factors that are responsible to the positive educational outcomes of the minority children who are experiencing multiple environmental risk factors (Boykin, 1986; Ogbu, 1986; Spencer, 1999). Theory and research on resilience has led to understand how economically disadvantaged minority children experiencing high risk demonstrate successful adaptation despite adversities (Garmezy, 1985; Cicchetti & Garmezy, 1993; Cicchetti & Rogosch, 1997; Masten & Coatsworth, 1998). Such competent children show two major features.

- Children utilize their own attributes like intelligence, persistence, self-control and problem solving (Hart, Olsen, Robinson & Mandlco, 1997).
- Children seek the support of the number of proximal systems like family and school (Garmezy, 1988; Henderson & Berla, 1994). Due to its multidimensional nature, resilience emerges as cognitive, behavioral, and emotional ability and its transaction with the environment (Cicchetti & Lynch, 1993; Luthar, Cicchetti & Becker, 2000).

During early period of childhood, children who are showing resilience in presence of high risk were perceived by their parents as active, affectionate, and socially responsive individuals. These children will manifest some characteristics like self-help skills, sensory motor acquisition and language development. During early adolescence, they will display good problem solving skills, communication skills and perceptual motor development. During late adolescence, resilient individuals will have high internal locus of control, and achievement-oriented

attitude, and positive self-esteem. When become adults, they will be able to unite various support factors present in their environment (Werner & Smith, 1977).

### **Sources of Resilience (Identified by International Resilience Project)**

International Resilience Project is a multinational study designed to discover the actual role of parents, caregivers, and children in promoting resilience. A total of 30 countries were participated in the investigation which was implemented between September 1993 and August 1994. Sample selected for the project includes 589 children with their families and caregivers. International Resilience Project investigated the construct of resilience at an international level; the project enabled the public to imbibe the combination of factors that results in childhood resilience. Hypothetical situations of adversity to collect responses of children and adults, checklist of resilience-related statements, three standardized tests, and descriptions of the actual experiences of the respondents constitute the instruments. International Resilience Project identified thirty six factors under three headings consisting of five parts which promoting resilience. These three headings are the real sources of resilience which constitute I HAVE, I CAN, and I AM factors. These three sources are the main factors that constitute resilience. These three sources and five parts are presented in Table 1 and explained as follows.

**Table 1***Sources of Resilience Identified by International Resilience Project*

<b>Source</b>	<b>Components of the Source</b>	<b>Examples</b>
<b>I HAVE</b> (External supports)	Trusting relationships Structure and rules at home Role models Encouragement to be autonomous Access to health, education, welfare and security services	I have people who help me when I am sick, in danger, or need to learn. I have very caring parents for sharing my problems.
<b>I CAN</b> (Social and interpersonal skills)	Communicate Problem solve Manage my feelings and impulses Gauge the temperament of myself and others Seek trusting relationships	I can successfully complete my responsibilities. I can help others when they are in trouble.
<b>I AM</b> (Internal personal strengths)	Lovable and my temperament is appealing Loving, empathic, and altruistic Proud of myself Autonomous and responsible Filled with hope, faith, and trust	I am a person people can love and believe. I am an optimistic person.

Children who are showing any of these characters can be named as resilient. Children can use any one of these sources for overcoming adversities.

I HAVE factors are the external supports and resources that promote resilience. Before entering into a world of I CAN and I AM, child must be able to find out the external supports and resources for developing the feelings of safety and security which acts as the foundation to develop resilience. These external supports play a significant role throughout the life. I CAN factors are the social and interpersonal skills of a child. Through the interaction with parents, care givers, friends and teachers, children have full of opportunities to develop these skills. I AM factors are internal to the child, depicting the personal strengths. Feelings, attitudes, interests and beliefs exhibited by the child are coming under this category.

Throughout different stages of development, children will depend more on *I Have*, *I Can* and *I Am* factors for facing life. During the period of childhood, children will rely more on *I Have* factor by establishing relationships with other elder people like parents, teachers or care givers. As they grow, children will extend their strength through exhibiting many *I Can* factors and then they constantly strengthen their personal capabilities through the establishment of *I Am* factor. So during different developmental stages of a child, teacher, parents or other care givers should use appropriate language of resilience to make them emotionally healthy.

### **Categories of Protective Factors (Benard, 1995)**

According to Benard (1995) the protective factors can be classified into three major categories viz., caring and supportive relationships, positive and high expectations, and opportunities for meaningful participation.

#### **1. Caring and Supportive Relationships**

From Maslow's theory of Need Hierarchy, one can infer that love and belongingness need should be satisfied for a child for his or her healthy emotional development. So, presence of at least one caring person has to play a significant role in the development of a child who provides support and care for development and learning.

Longitudinal study conducted by Werner and Smith (1989) revealed that in the lives of resilient children, among the most frequently encountered positive role models outside family circle, was a favourite teacher who was not only an instructor of academic skills but also a confidant and positive model for personal identification. Noddings (1988) opined that a caring relationship with a teacher gives youth the motivation to succeed. According to Higgins (1994) teachers can convey loving support to students by listening to students and validating their feelings and by demonstrating kindness, compassion and respect.

In short, a caring individual whether in family, in school or in community can serve as a strong protective factor of resilience.

## **2. High Expectations**

According to Rutter et al., (1979) schools that establish high expectations for all youth and provide them necessary support for achievement will have high rates of academic success and have lower rates of problem behaviours such as dropping out, drug abuse, teen pregnancy and delinquency than other schools. Delpit (1996) opined that teacher's high expectations can structure and guide the behaviour and can also challenge students beyond what they believe they can do.

According to Benard (1997) turnaround teachers can recognize students' strengths, mirror them and help students see where they are strong. Turnaround teacher is one who models the resilient behaviours they desire from their students (Benard, 1997). Turnaround teacher helps the students to become resilient by equipping them to,

- not take adversity personally in their lives.
- not see adversity as permanent.
- not see setbacks as pervasive (Seligman, 1995 ).

Turnaround teachers are student centered. They use the strengths, interests, goals, dreams, and intrinsic motivation of students as the beginning point for learning.

Positive and high expectations can operate at several levels in classrooms and schools. Most obvious and powerful relationship is that teacher and other school staff spread the message that each and every student is resourceful to achieve success. According to Kidder (1990) a good teacher can give a child at least a chance to feel, "*she thinks I am worth something; may be I am.*"

With the help of relationships that convey high expectations, students develop confidence to believe in themselves and in their future, and also develop self esteem, self-efficacy, autonomy and optimism critical to resilience.

### **3. Opportunities for Participation**

According to Rutter et al., (1979), Rutter (1984) and Kohn (1993) turnaround teachers consider students as responsible individuals and allow them to participate in all aspects of the functioning of school. They provide opportunities for students to express their opinion and imagination, make choices, solve problems, work with and help others and give their gifts back to the community in a physically and psychologically safe and structured environment. All these contribute to development of resilience. Like caring and respect, participation in various activities is also a need of human beings. Sarason (1990) opined that schools ignoring these needs of both students and teachers become alienating places.

Schools having high expectations naturally provide youth with opportunities for meaningful participation within school. Such practices include asking questions around current social issues that encourage critical thinking, involving students in curriculum planning and evaluation, and governance and employing co-operative approaches like peer tutoring, co-operative learning, mentoring and community service. Schools which restructure its nature based on these protective factors become a protective shield for all students to develop resilience.

#### **Protective Processes (Rutter, 1987)**

In 1987, Rutter identified four major protective processes for fostering resilience. The following steps advocated by Rutter (1987) to inculcate resilience and to protect students from adversity are in accordance with children at extreme and multiple adverse conditions like discarded/ neglected children, poverty, gang involvement, and teen pregnancy.

1. Reducing negative outcomes by altering the risk or child's exposure to the risk.
2. Reducing negative chain reaction following risk exposure.
3. Establishing and maintaining self-esteem and self-efficacy.
4. Opening up opportunities.

### **1. Reducing Negative Outcomes**

It is a specialized programme characterized by removal of child from his or her adverse environment and sent to a school. It will reduce the exposure to risk. Risk factors can also be reduced through by provision of free or reduced price breakfast, lunch, clothing and the like. Make classroom environment more democratic and promote healthy interactions among peers. Establish meaningful link between community and family, so latter will be benefitted by the actions of the community. All these programmes can be effectively organized by a school.

### **2. Reducing Negative Chain Reactions**

Gang involvement, dropping out of school and teen pregnancy are special downward spirals from which a child rarely recovers. These will create frequent problems in their lives. Special interventions are to be needed to recover the child from such negative events.

Recovery programmes like providing part time job to drop outs and allowing them to attend school at different hours than traditional schools are effective. Negative chain reactions resulted from lack of education can be solved through maintaining flexible school structure, providing counselling and support, organizing smaller classes and experiential learning.

In 1991, Scott-Jones found that altering the negative chain following pregnancy depended heavily on adolescent mothers' additional training and education. Rutter (1987) suggested strategies for reducing the negative chain reactions for adolescent mothers which include provision of quality prenatal care

and programmes designed to encourage adolescent parents to continue schooling to reduce the likelihood of welfare dependency. A child can be recovered from negative chain reactions with the help of a teacher who acts as a mentor for the student, and spending extra time with the student. Other solutions include obtaining resources from the community for food, shelter and counseling.

### **3. Self-esteem and Self-efficacy**

These two are the developmental processes that can be learned through positive interactions with peers or adults and through successful accomplishment of a task. So the schools should organize programmes which provide opportunities for meaningful interactions with peers, teachers and other care-givers. Also design community linked programmes and services through which students can carry out simple but meaningful tasks. This will help them to develop a control over things in their environment along with a positive belief that they are valuable and worthy individuals.

### **4. Opening up Opportunities**

Persistence can be fostered in students through offering opportunities to acquire skills and invest in prosocial activities. Nettles (1991) identified that students who participated in activities sponsored by community based programmes displayed the characteristics like,

- More certainty of graduating from high school.
- Increased sense of personal control.
- Heightened academic self-concept.
- Increased efforts to achieve future goals.

According to Clark (1991) cross-racial friendship among students in integrated settings can build self-esteem and self-efficacy in students.

In developing a resilience framework, major areas for potential intervention were identified by Winfield (1991) that include policy, school, classroom and community. These areas can be crossed with the above mentioned four protective processes identified by Rutter (1987) to form a matrix. This matrix can be used while designing practices and programmes for developing resilience.

### **Major Categories of Protective Factors**

In the field of resilience, a number of protective factors were identified by Rutter et al., (1979), Garmezy (1991, 1993), Radke-Yarrow, Nottelmann, Martinez, Fox, and Belmont, (1992), Cowen, Hightower, Pedro-Carroll, Work, Wyman, and Haffey, (1996), and Cicchetti and Rogosch (1997). These protective factors can be classified into three groups viz., individual protective factors, family protective factors and community protective factors. Children who are showing strong resilience will possess a treasure of protective factors within themselves, in their family and community.

126 factors were mentioned from 80 studies on resilience as protective to academic adversity of students belonging to various age groups from early childhood to adolescence, predominantly among western populations, including marginalized and vulnerable groups. There is evident overlapping among these 134 factors as the investigator used different nomenclature and differing level of specificity of the constructs. Hence these factors were grouped into 17 categories belonging to within-child, within- family, within- school and within-community protective factors as given in Table 2.

**Table 2***Classification of Protective Factors*

<b>Category of protective factor</b>	<b>Protective factors identified</b>
Within-Child protective factor	Motivational factors, Self-beliefs, Cognitive factors, Meta-cognitive factors, Emotional relationships, Social skills
Within-Family protective factor	Parental expectations, Parental involvement, Total family environment
Within-School protective factor	School organizational factors, School atmosphere, Teacher behaviour, Instructional factors, Peer behaviour
Within- community protective factors	Personal support, Community resources, Cultural support

**Within-child Protective Factors**

More than one third of the protective factors can be grouped in six categories belonging to within-child domain. Within-Child protective factors include a network of motivational factors, self-beliefs, cognitive skills, meta-cognitive factors, social factors and emotional relationships. The 46 within-child factors identified from the reviewed literature are presented in Table 3 and Table 4.

Motivational factors identified are enhancing protection against academic-risk in students which belong to within-child domain are student commitment, involvement, achievement motivation, motivation, dispositional attributes of the individual, positive disposition, academic and individual aspiration, task orientation, academic motivation and resourcefulness. According to Anderson and Keith (1997), motivational components are very important in the academic success of at-risk students.

Self-beliefs such as self esteem, autonomy, self-understanding, self-efficacy, sense of efficacy, belief in self, academic self-concept, students' belief about their total ability are found to contribute to the development of resilience.

**Table 3**  
*Within-child Protective Factors of Academic Resilience Belonging to Motivation and Self-Beliefs*

	<b>Component factors</b>	<b>Proponent and Year</b>
<b>Motivational Factors</b>	Student commitment	Lee, Winfield, & Wilson(1991);
	Involvement	Waxman & Huang (1996); Resnick, Bearman, Blum, Bauman, Harris, Jones, Tabor, Beuhring, Sieving, Shew, Ireland, Bearinger, & Udry (1997); Waxman, Huang, & Wang (1997); Sirin & Rogers-sirin (2004)
	Achievement motivation	Waxman, Huang, & Padron (1997)
	Motivation	Waxman & Huang (1996); Waxman, Huang, & Padron (1997); Read (1999)
	Dispositional attributes of the individual	Werner & Smith (1977)
	Positive disposition	Borman & Rachuba (2001)
	Academic and individual aspiration	Gordon et al.,( 2001)
	Task orientation	Deborah, Mary, & Adaline (2002)
	Academic motivation	Deborah, Mary, & Adaline (2002)
	Resourcefulness	Berliner & Benard (1995)
<b>Self Beliefs</b>	Self esteem	Parker, Cowen, Work, & Wyman ( 1990); Nettles & Pleck( 1993); Cowen et al., Cowen, E. L., Hightower, A. D., Pedro-Carroll, I. L., Work, W. C., Wyman, P. A., & Haffey, W. G. (1996); Csikszentmihalyi(1997); Martinez & Dukes(1997); Padron, Waxman, & Huang (1999); Rutter(1979,1999); Masten & Coatsworth(1998); Novick(1998); Michelle & Marc (1999); Read (1999); Borman & Rachuba (2001); Buckner, Mezzacappa, & Beardslee (2003)
	Autonomy	Nelson -Le Gall & Jones (1991);Berliner & Benard (1995); Grotberg (1995)
	Self - understanding	Beardslee & Podorefsky(1988)
	Self - efficacy	Lee, Winfield, & Wilson, 1991); Rak & Patterson (1996); Novick (1998); Bell & Suggs(1998); Borman & Rachuba (2001); Grantham (2004)
	Sense of efficacy	Nettles & Pleck (1993)
	Belief in self	Wilson-Sadberry, Winfield, & Royster (1991)
	Academic self concept	Waxman & Huang (1996); Seaton & Taylor (2003)
	Students' belief about their total ability	Gordon Rouse (2003)

Within-child cognitive factors including cognitive skills, problem solving skills, post secondary education plans, problem solving strategy, intelligence, and above average vocabulary development have significant impact on fostering resilience.

Within-child meta-cognitive factors including internal and realistic sense of control, self-regulation, internal locus of control, sense of purpose, positive coping strategies and, reflectiveness in unfamiliar situations are related favourably to academic resilience.

Social skills like social competence, positive responsiveness to others, cohesion, positive and negative social behaviours, responsibility, communication skills, highly adaptable temperament and ability to approach new situations, loving and trusting relationships, behavioural skills play significant role in fostering resilience.

Being a part of the within-child protective factors, emotional ones like deep commitment to relationships, empathy, affectionate ties with family, satisfaction, less friction, and love proved its own influence on the promotion of resilience. The details of the protective factors are given in Table 4.

**Table 4**

*Within-child Protective Factors of Academic Resilience Belonging to Cognitive, Meta-Cognitive and Socio-Emotional Skill Areas*

	<b>Component factors</b>	<b>Proponent and Year</b>
<b>Cognitive skills</b>	Cognitive skills	Garnezy (1991); Grantham (2004)
	Problem solving skills	Parker, G.R., Cowen, E.L., Work, W.C., & Wyman, P.A.(1990); Grotberg, (1995); Grantham (2004)
	Post secondary education plans	Wilson-Sadberry, Winfield, & Royster (1991)
	Problem solving strategy	Nelson -Le Gall & Jones (1991)
	Intelligence	Rutter (1979); Garnezy, Masten, & Tellegen (1984); Werner (1995); Masten & Coatsworth (1998)

Contd.

	<b>Component factors</b>	<b>Proponent and Year</b>
	Above average vocabulary development	Julia, John, & Cicchetti, (2002)
<b>Meta-cognitive factors</b>	Internal and realistic sense of control	Parker, G.R., Cowen, E.L., Work, W.C., & Wyman, P.A.(1990)
	Self regulation	Eisenberg, Cumberland, Spinrad, Fabes, Shepard, Reiser (2001)
	Internal locus of control	Werner (1989); Masten & Coatsworth (1998); Gillock & Reyes (1996);Borman & Rachuba (2001); Rouse (2001); Miller, Fitch, & Marshall (2003); Juby & Rycraft (2004)
	Sense of purpose	Berliner & Benard (1995)
	Positive coping strategies	Rutter ( 1999)
	Reflectiveness in unfamiliar situations	Garmezy (1991)
<b>Skills</b>	Social competence	Berliner & Benard (1995); Rydell, Hagekull & Bohlin (1997)
	Positive responsiveness to others	Garmezy (1991)
	Cohesion	Garmezy (1991); Padron, Waxman, Powers, & Brown (2002)
	Positive and negative social behaviours	Gordon et al., (2001)
	Responsibility	Grotberg (1996)
<b>Social</b>	Communication skills	Grotberg (1996)
	Highly adaptable temperament	Julia, John, & Cicchetti (2002)
	Ability to approach new situations	Julia, John, & Cicchetti (2002)
	Loving and trusting relationships	Grotberg (1996)
	Behavioural skills	Nettles & Pleck (1993)
<b>Emotional relationships</b>	Deep commitment to relationships	Beardslee & Podorefsky (1988)
	Empathy	Parker, G.R., Cowen, E.L., Work, W.C., & Wyman, P.A.(1990); Grotberg (1996)
	Affectional ties with family	Werner & Smith (1977)
	Satisfaction	Padron, Waxman, & Rivera (2002)
	Less friction	Padron, Waxman, & Rivera (2002)
	Love	Grotberg (1996)

In individuals, within-child protective factors are present in varying degrees. Possessing all these protective factors is not required to label a person as resilient. Attribute of resilience can be given to a person if he or she has excellent performance in one category and average performance in others.

### **Family Protective Factors**

Family is the first and most important agency which provides security and protection to the child, so family lays the foundation for analyzing development of resilience. Family, the first agency of socialization also acts as a strong protective factor of resilience. The sources of such positive responses from family are three fold: primary relationships within the family, the network of relationships with adults and children outside the family, and competence and achievement. (Wolff, 1995 p. 568). Cowen and Work (1988) found that interaction pattern in the family as warm, cohesive and supportive and will contribute positively to resilience. According to Beardslee (1989) and Cowen, Hightower, Pedro-Carroll, Work, Wyman, and Haffey (1996) if child develops a strong bond with parent, interaction pattern in the family becomes more strengthened. Such kind of strong relation with parents acts as a strong protective factor of resilience for children.

A number of researchers like Masten, Best, and Garmezy (1990), Garmezy (1991), Werner and Smith (1982, 1992), Werner (1993), and Masten and Coatsworth (1998) have emphasized the significance of family related factors in the successful adaptation of individuals while confronting adversities.

People seek support from informal sources like family to a greater extent and from friends to a lesser extent when compared with family (Cutrona, 2000; Canavan & Dolan, 2003). In 1983, Whittaker and Garbarino very clearly explained that social support within families acts as a bread and butter source of help for children. In the view of Canavan and Dolan (2003), a central helping system can be created with the help of informal social support provided by family members and friends. Strongly resilient adolescents will be able to cope not only with daily hassles but

also with sudden major crises. Such kind of resilience is developed in children who are strongly supported and loved by their family members and other informal and formal social supports.

Children who are experiencing positive and loving relationship with parents, family warmth and cohesion and their families enjoying absence of discord will show more resilience and they will be protected from adversities in childhood and in future life. Parents of such children follows acceptance and low control so children will be more benefited from consistence in discipline and rules at home. Their parents will provide many opportunities for children to participate in household activities and encourage children for whole-hearted participation will act as protective factors of resilience. Parents of such children expect something from their children and children will be able to fulfill their parents' expectations.

According to Masten et al., (1990) parents nurture mastery motivation and self-esteem and physical growth of children. In connection with the character development of child, parents are most important persons who provide informal education, learning opportunities, presenting role models before them and arranging all other necessary resources for the proper development of a child. All these act as protective processes for resilience. Children who are lacking these transactional protective processes become maladapted. Such children develop low self-esteem, poor social connections, reluctant to learn and develop mistrust.

A special feature of the resilient children is the presence of an enduring relationship with an adult; may or may not be a parent. Research conducted by Masten et al., (1990) suggested that children who are making secure attachments to parents or other adults will be protected from adversities in future. Also children having families with marital instability were rated as disruptive by peers and teachers. A child's self concept and sense of social worth can be enhanced by positive and intimate relations in the family. With the help of this strong protective factor many problems faced by the children can be solved. Participation of children

in household activities like nursing the young ones, supporting parents in cooking, gardening and cleaning will help to improve their own life circumstances which leads to enhanced self-esteem and it also foster resilience. Then the children will be able to solve their problems and perform well in all fields. Family as a strong protective factor can strongly foster educational resilience by actively participating in their educational experiences. Strong relationship between children and family members can improve their academic achievement, school attendance and reduce the dropouts, maladjustment and bad company. Parents who are actively involving in educational experiences of their children and holding high academic, moral and social expectations can increase the educational resilience of their children. Family protective factors span over three domains namely parental expectations, parental involvement and total family environment. Summary of the family protective factors are presented in Table 5.

**Table 5***Family Protective Factors of Academic Resilience*

	<b>Component factors</b>	<b>Proponent and Year</b>
<b>Expectations</b>	Positive and high expectations	Berliner & Benard (1995); Horn & Chen (1998)
	Higher levels of affiliation	Felner, Aber, Primavera, & Cauce (1985)
	Higher perceptions of the family	Gonzalez & Padilla (1997)
	Parent concern	Deborah, Mary, & Adaline (2002)
<b>Involvement</b>	Caring relationships	Nettles, Mucherach, & Jones (2000)
	Parental involvement	Gutman, Sameroff, & Eccles (2002); Bridgeland, DiIulio, and Morison (2006); Stone (2006)
	Parental involvement in early schooling	Taylor (1991); Waxman & Huang (1996) ; Read (1999)
	Influential fathers	Wilson-Sadberry, Winfield, & Royster (1991)
	Working mothers	Lee, Winfield, & Wilson (1991)
	Competent and emotionally responsive care giving	Wyman, Cowen, Work, Hoyt-Myers, Magnus, & Fagan (1999)
	Competent parenting	Masten, Garmezy, Tellegen, Pellegrini,

Contd.

	<b>Component factors</b>	<b>Proponent and Year</b>
		Larkin, & Larsen, (1988); Baldwin, Baldwin, & Cole (1990)
	Parent's discussion with students about school related matters	Horn & Chen (1998)
	Parent supervision	Deborah, Mary, & Adaline ( 2002 )
	Parent communication	Deborah, Mary, & Adaline ( 2002 )
	Parental monitoring	Buckner, Mezzacappa, & Beardslee (2003)
	Meaningful opportunities to participate	Lee, Winfield, & Wilson (1991); Berliner & Benard (1995)
	Early childhood experiences	Taylor (1991)
	Family S.E.S.	Garmezy, Masten, & Tellegen (1984) ; Sadberry, Winfield, & Royster (1991)
<b>Environment</b>	Family background	Reyes & Jason (1993)
	Family support	Nettles, & Pleck (1993); Richman, Rosenfeld, & Bowen(1998); Gordon et al (2001); Bradley & Crowyn (2002);
	Familism	Gonzalez & Padilla (1997)
	Stable and orderly family environment	Wang, Haertel, & Walberg ( 1997); Walsh (1998)
	Higher social class	Lee, Winfield, & Wilson (1991)
	Cohesion	Felner, R. D., Aber, M. S., Primavera, L., & Cauce, A. M. (1985); Aber, Slade, Berger, Bresgi, & Kaplan, (1985); Garmezy (1991); Walsh (1998)
	Warmth	Garmezy (1991)

A single family may or may not be able to contribute all the above mentioned protective factors to a child at-risk. But a family which is willing to contribute some of them can act as a protective shield to save the child from risk conditions and to develop resilience in them.

### **School Protective Factors**

The process of schooling has significant impact on the development of children, especially in the case of children at-risk. Schools play a very significant role in developing resilience not less than that of family, peer and community settings. Schools having classrooms which use resilience promoting strategies can

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build emotionally healthy children. Teachers having caring attitude and high expectation are protective factors of resilience. Werner and Smith (1989) identified a favourite teacher as a strong protective factor.

Academic environmental factors were operationally defined as atmosphere surrounding the school that provides awareness about what it means to be in high school to adolescents, also allows them to feel supported and motivated to continue their academic endeavours.

Arellano and Padilla (1996) opined that the general school climate is an important protective factor for academic success. School climate is a combination of classroom practices and school policies (Wang & Walberg, 1985).

In a number of ways schools can promote educational resilience. Powerful, research based instructional practices is strong protective factors of educational resilience. Instructional practices like active enquiry, experimentation, discussion, reflection, application, evaluation, problem-solving and higher order questioning can help students to construct their own knowledge for problems. This will help them to develop resilience. From such classrooms, students can develop independence which will leads to educational resilience. Catering diverse needs of students also act as a protective factor of educational resilience. Meta-cognitive strategies and help seeking behaviours can also contribute to educational resilience. Details of the school protective factors of academic resilience belonging to teacher behavior and instruction are summarized in Table 6.

**Table 6**

*School Protective Factors of Academic Resilience in Teacher Behaviour and Instruction*

	<b>Component factors</b>	<b>Proponent and Year</b>
<b>Teacher Behaviour</b>	Teacher's actions	Wang, Haertel, & Walberg (1997)
	Teacher expectations	Winfield & Manning (1992); Wang, Haertel, & Walberg (1997); Waxman, Huang, & Wang (1997); McClendon, Nettles, & Wigfield (2000); Grantham (2004); Sirin & Rogers-sirin (2004)
	Enhancing students personal growth and increasing social contacts	Rutter (1979)
	Teacher-feedback	Gonzalez & Padilla (1997)
	Caring and support	Benard (2004)
	Higher levels of educational support	Alva (1991)
	Encouragement of student engagement and involvement	McClendon, Nettles, & Wigfield (2000)
	Interaction between teacher and students	Padron, Waxman, & Huang (1999); Borman, & Rachuba (2001); Grantham (2004)
	Mentoring	Nettles & Pleck (1993)
	Student engagement	Borman & Rachuba (2001); Sirin & Rogers-sirin (2004); Fleming, Haggerty, Brown, Catalano, Harachi, Mazza, & Gruman (2005); Dilulio & Morison (2006)
<b>Instructional factors</b>	Pacing and feedback	Waxman & Huang (1996)
	Teach to student's strength	Benard (1997)
	Fostering a sense of achievement in children	Rutter (1979); Masten & Coatsworth (1998)
	Adapting curriculum and instruction to respond student diversity	Wang, Haertel, & Walberg (1997)
	Culturally compatible classroom programmes	Taylor (1991)
	Curriculum exposure	Lee, Winfield, & Wilson (1991)

Contd.

I	Component factors	Proponent and Year
	Instructional strategy	Read (1999)
	Co-operative learning	Nettles & Pleck (1993)
	Tutoring	Nettles & Pleck (1993)
	Instruction	Wang, Haertel, & Walberg (1997); Waxman, Gray, & Padron (2003)
	Teach students that they have innate resilience	Benard( 1997)
	Classroom learning environment	Waxman & Huang (1996)

Classrooms with democratic atmosphere is another protective factor of educational resilience. Such classrooms with co-operative learning, small-group discussion, and peer tutoring promote educational resilience. Dynamic classroom arrangement is another protective factor. Diversified, rich, learner centered and life centered curriculum and its appropriate transaction are protective for educational resilience. All the sources of resilience belongs to institutional protective factors offer healthy protection for at-risk children which include school organization, school atmosphere, teacher behaviour, peer behaviour and instruction.

Peer group is another influential factor in the development of a child, after the family. Peers can provide support, care and love for the healthy development of a child and adolescent. From the peers, children can assimilate values also. Peers can provide stable and continuous support to the individual by helping to reduce the stress of individual. So, peers play a significant role in the development of an emotionally healthy individual. Peers can also exert significant influence on the academic achievement of an individual and on the attitude towards school. If peer group has a positive attitude towards school, it will reflect positively on the academic achievement, values followed by the peer group and their competence. All these characteristics of a peer group act as protective factors of resilience for a child. Summary of the school protective factors of academic resilience belonging to school organization and atmosphere and peer behaviour are presented in Table 7.

**Table 7***School Protective Factors of Academic Resilience in School Organization, Atmosphere and Peer Behaviour*

	<b>Component factors</b>	<b>Proponent and Year</b>
<b>Organizational</b>	Staff development	Benard (1997)
	Provision of growth opportunities	Benard (1997)
	Opportunity to self assess	Benard (1997)
	School goals	Winfield & Manning (1992)
	Discipline	Winfield & Manning (1992); Masten, A. S., Garmezy, N., Tellegen, A., Pellegrini, D. S., Larkin, K., & Larsen, A. (1988).
	Reward system	Winfield & Manning (1992)
	School grade	Wilson-Sadberry, Winfield, & Royster (1991); Bell & Suggs (1998)
<b>Atmosphere</b>	Safe and orderly environment	Borman & Rachuba (2001)
	Schools having higher S.E.S.	Lee, Winfield, & Wilson (1991)
	Positive school experience	Gilligan (1998)
	Academic environment factors	Gordon et al., ( 2001)
	Extracurricular activities	Eccles & Gootman (2001); Roeser & Peck (2003); Granger & Kane (2004); Kane (2004); Lauer, Akiba, Wilkerson, Apthorp, Snow, Martin-Green, (2006); Durlak & Weissberg (2007); Zarrett, Peck, & Eccles, (2005a, 2005b); Zarrett (2007)
	School support	Nettles & Pleck (1993)
<b>Peer Behaviour</b>	Peer support	Felner, R. D., Aber, M. S., Primavera, L., & Cauce, A. M. (1985); Alva (1991); Gonzalez & Padilla (1997); Wang, Haertel, & Walberg (1997); Deborah, Mary, & Adaline (2002); Powers, Bowen, & Rose (2005)
	Peer belonging	Gonzales & Padilla (1997); Bell & Suggs (1998)
	Early peer relationships	Taylor (1991); Bell & Suggs (1998)
	Overall school satisfaction	Wilson-Sadberry, Winfield, & Royster (1991); Reyes & Jason (1993); Fleming, Haggerty, Catalano, Harachi, Mazza, & Gruman (2005); Dilulio & Morison (2006)
	Gang pressures	Reyes & Jason (1993)
	Positive ties to school	Gonzalez & Padilla (1997)
	Value placed on school	Gonzalez & Padilla (1997); Fulgini (1997)
	Friendship	Nettles & Pleck (1993)
	Children's overall acceptance by the peer group	Michael et al., (2002)
	Extensivity of children's friendship networks	Michael et al., (2002)

If a school is organized in accordance with the mobilization of the above mentioned school protective factors, it will be very effective in fostering academic resilience.

### **Community Protective Factors**

Community can play a significant role in the healthy emotional development of a child. With the help of its resources, community can mould the development of a child. Children can internalize many values from the community like co-operation, helping mentality, love, and tolerance. All these help the child to act independently and this equips the child to face the adversities. Different kinds of social organizations are present in community like health care organization, day care centers, job training centers, religious institutions and recreational centers, all of which help to promote resilience. Duties and services discharged by these centers act as protective factors for resilience. Community can promote educational resilience by inculcating positive social values. Community can provide variety of human services to promote educational resilience.

According to Garmezy (1993) community protective factors is the third category of protective factors present outside the family. These include caring and affection provided by the adults outside the family. Cowen and Work (1988) opined that, community can present role models for children which act as protective factors.

Another kind of protective factor present in community is social and cultural norms, code and conduct. Social control and norms help children to develop desirable behaviour. Community also provides opportunities for children to play significant roles in the society which serve as protective factors of resilience. Expectation of community about its people is a strong protective factor of resilience. Faith is seen as a protective factor for resilient adolescents. Faith helps high achievers to overcome all barriers in order to achieve their goals. A number of studies support this view. Summary of the community protective factors are given in Table 8.

**Table 8***Community Protective Factors of Academic Resilience*

	<b>Component factors</b>	<b>Proponent and Year</b>
<b>Personnel</b>	Presence of a caring adult	Garmezy (1991)
	Support and empowerment received from the professionals	Margalit & Kleitman (2006)
<b>Resources</b>	Presence of an institutional structure such as caring agency or church	Garmezy (1991)
	Social support	Buckner, Mezzacappa, & Beardslee (2003); Wettersten, Rudolph, Faul, Gallagher, Trangsrud, & Adams (2004)
	Environmental support	Gordon Rouse (2003)
	External support system in the environment	Werner & Smith (1977); Buckner, Mezzacappa & Beardslee (2003)
	Other support factors	Gordon et al .,(2001)
	Availability of resources	Wang, Haertel, & Walberg (1997)
<b>Cultural</b>	Community culture	Wang, Haertel, & Walberg (1997)
	Cultural socialisation experiences	Nelson-Le Gall & Jones (1991) ; Michelle & Marc (1999)

A healthy community with a treasure of these protective factors can support families and schools in fostering academic resilience in at-risk students.

Studies and findings above evidence that some children can “beat the odds” and be able to lead a healthy life in presence of adversities. Different kinds of protective factors contribute significantly in their successful adaptation.

According to Masten, Best, and Garmezy (1990) phenomenon of resilience is the capacity for or outcome of successful adaptation despite challenging or threatening circumstances. This successful adaptation or behavioural adaptation may be explained as internal states of well-being or effective functioning in the environment or both. Protective factors help to moderate the effects of individual

vulnerability or environmental hazards so that the adaptation trajectory of individuals becomes more positive.

From the analysis of the internal and external assets supporting the proper development of a child, it is revealed that the combination of three basic constructs viz., personality which includes cognitive skills and styles, social support which includes absence of chronic life stresses and performing meaningful social roles and family structure which includes high warmth, caring, low criticism, acts as major protective factors for children exposed to adversity. All individuals are born with an innate capacity for resilience, developing social competence, problem solving skills, critical consciousness, autonomy and a sense of purpose. Social competence includes qualities like responsiveness, ability to elicit positive responses from others, flexibility, ability to move between different cultures, empathy, communication skills, and a sense of humor. Problem solving skills constitute the ability to plan, resourcefulness in seeking help from others, and critical, creative and reflective thinking. Critical consciousness includes a reflective awareness of the structures of oppression and ability to create strategies to overcome them. Autonomy includes a sense of task mastery, internal locus of control and self efficacy. Development of resistance and detachment function as a powerful protector of autonomy. Sense of purpose includes goal direction, educational aspirations, achievement motivation, persistence, hopefulness, optimism, and spiritual connectedness (Benard, 1995).

### **Measurement of Protective Factors**

Confusion around the term 'protective factors' is reflected in literature reviews where the term is used interchangeably to denote main effects models and models involving interactive processes (Rolf, Masten, Cicchetti, Neuchterlien, & Weintraub, 1990; Luthar & Zigler, 1991; Haggerty, Sherrod, Garmezy, & Rutter, 1994). Garmezy et al., (1984) used the term "compensatory" to describe models involving main effects. In contrast to this, several researchers use the term "protective" to refer direct ameliorative effects. For example, in the pioneering study

on children in Hawaii by Werner and Smith (1982, 1992), protective variables were not those involving interaction effects, but simply those differentiating high-functioning children at-risk from those who developed serious problems. Similar usage of term is evident in reports from the Rochester Child Resilience Project (Parker, Cowen, Work, & Wyman, 1990; Wyman, Cowen, Work, & Parker, 1991; Wyman, Cowen, Work, & Kerley, 1993; Cowen, Work & Wyman, 1997).

Luthar (1993) has argued for incorporation of more differentiated terms to label salient processes to reduce the equivocality in connotations of central terms in resilience research. Attributes with direct ameliorative effects, operating at both high and low risk conditions are simply labeled "protective" by many contemporary investigators like Parker, Cowen, Work, and Wyman (1990), Rolf, Masten, Cicchetti, Nuechterlein, and Weintraub (1990), Luthar and Zigler (1991), and Werner and Smith (1992).

Finer definitions of protective factors differentiate among the models like Protective-stabilizing effects, Protective-enhancing effects, Protective-reactive effects, and Protective effects which explain the effects of risk and moderator variables on adjustment. Protective-stabilizing means that competence decided by increase or absence of adversity, it is like a yes/no question. If there is no adversity, there will be increased competence, but increase is not gradual. When an attribute allows children to engage in stress in such a way that their competence is augmented with increase in risk, it can be labeled as "protective - enhancing" effects. Increase in competence due to adversity is accelerating in geometric proportions. When the attribute generally confers advantages but less so when stress levels are high than low, it can be labeled as 'protective but reactive.' Decelerating increase in the competence due to increase in adversity. Protective effects means that increase in competence is proportional to constant increase in adversity.

Similar suffixes can be employed for findings on vulnerability effects, where those individuals with the attribute manifest greater maladjustment than those

without it. Vulnerable-stable where the general disadvantage of individuals with the attribute remains stable despite changing levels of stress. The child is vulnerable because competence falls in risk condition, but competence will remain the same, irrespective of further increase in adversity. Vulnerable reactive when the overall disadvantage linked with the attribute was heightened with increasing levels of stress. Fall in competence in risk condition is accelerating in proportion to increase in risk.

The terms "protective" and "vulnerability" processes might be used when overall effects on at-risk children's adjustment are positive versus negative in direction respectively. In describing processes that alter the effects of adversity, the terms protective and vulnerability are more correct to denote overall effects that are beneficial and detrimental respectively. Main effects can be distinguished from the more complex interactive processes through the use of more elaborated labels for the latter, which simultaneously indicate both the existence and direction of interactive processes in resilience.

### **Educational Intervention for Fostering Academic Resilience**

One of the accepted aims of education is the creation of a sound mind in a sound body to help the child to lead a successful life. An emotionally healthy individual will be able to withstand with adversities and contribute positively to own, societal and national well-being. To attain this objective, education community has to devise effective, comprehensive, and practical programmes and tools contributing to positive developmental and academic outcomes of children. Likewise programmes and policies which support and contribute to effective parenting and making adults into good care-givers are very important in the development of a child.

Interesting and promising aspect of resilience, the universal developmental process, the successful adaptation despite adversity, is that though its level is determined by genetic make-up and temperament, can be fostered in human beings.

Research on resilience has considerable potential to guide the development of effective interventions for different at-risk populations. Interventions based on resilience research require strong foundation in both theory and empirical findings. Intervention should aim at protective and vulnerability factors at multiple levels of influence and goals and techniques should fit with the life situations and everyday ecologies of the individual.

### **What do the interventions perform for fostering resilience?**

Resilience can be viewed as something we do or something we foster. Resilience as something we do has many short-term strategies and it was misdirected towards changing the child. Resilience should be conceived as something we foster throughout students' development. It can be achieved by strengthening protective processes of students encountering the adversities. Resilience thus is a dynamic developmental process that can be fostered through the development of practices and policies and also through the sincere involvement and attitudes among professional educators. It is not an easy task like changing practices, policies and attitudes within schools and communities. To achieve that goal one has to deal with a delicate balance between protective processes and risk factors present in every young person. Constant reinforcement of the protective processes may help individuals to be resilient when facing adversities. Through this, individuals will be able to keep the potential to become resilient.

**1. Prevention of damage and restoration of basic adaptation systems.** The research on resilience reports that strong threats to children are those adversities which weaken the basic human protective systems for development. So the programmes that aim to promote and develop competence and resilience in at-risk children should focus on the prevention of damage and restoration and compensation of threats to these basic adaptation systems. For example, early childhood education, nutritional programmes, positive parenting, good schools that promote protection of brain development, thinking, attention and learning have to play a

significant role in the lives of children who successfully overcome adversities. According to Mc Millan and Reed (1994), a careful outlook at programmes that work for at-risk children should tap into basic but powerful protective systems for human development.

**2. Providing care, support and opportunities.** Findings of research on resilience provides a new paradigm to emphasize caring and support, and positive high expectations about children by teachers and other care givers. It also provides opportunities for children for meaningful participation in school and civic activities. Children need opportunities to experience success at all ages. Experiencing success helps children to become optimistic and confident. Development of these qualities makes children emotionally healthy. So, family, school and community should take responsibility to provide opportunities and should ensure development of talents of child. According to Bandura (1997), children who demonstrate effective persistence in face of failure and achieve greater success because of their own efforts become healthier in all aspects of life. Timely provision of different kinds of challenging opportunities to children will help them to utilize their talents and efforts and gradually they will be able to manage the risk conditions in their life.

**3. Grouping empirically identified protective processes.** While designing intervention, one should effectively tie together empirically identified protective processes (Luthar, 2000). Nettles, Mucherach, and Jones (2000) conducted research on influence of social resources such as parent, teacher, and school support on resilient outcomes of children and adolescents. Findings from studies showed importance of social resources and need for effective programmes of intervention.

### **Characteristics of the Process of Resilience Promotion**

The three important characteristics of resilience include the following, 1) It is long-term and developmental, 2) Views children with strengths rather than with risks or deficits, 3) Nurtures protective processes by changing systems, structures and beliefs within schools and communities (Winfield, 1994).

**1. Long - term, developmental process.** There is difficulty in conducting research on resilience as it takes long periods to develop resilience and it depends on the presence of positive interventions by a significant individual, school or community organization at crucial life periods in order to minimize risks. In the opinion of Winfield (1994), Nobel Prize winners, world famous musicians and artists had got appropriate combination of support, encouragement and expert mentor at particular periods over years. So researchers should keep this point while designing the intervention.

**2. More emphasis on children's strengths than deficits.** In backward areas, task of developing talents and resilience are difficult due to two reasons. One is that risks and vulnerabilities are high and another is the prevailing attitudes and beliefs of adults. So there need a change in approach from emphasizing risk and deficits to capitalizing protection, strengths and assets. Educators should be able to predict who will fail in a class and which programme will compensate the deficit. An essential to be kept in mind while designing intervention is understanding about persistence and success of some students in school and after despite the vulnerabilities.

**3. Nurturing protective processes.** Research conducted by Brookover, Schweitzer, Schneider, Beady, Flood, and Wisenbaker (1978) suggested that school culture is strongly related with academic performance of students. Many factors like school goals, expectations, discipline and reward systems followed in a school can either promote or hinder success of students. Researchers like Purkey and Smith (1983) and Corcoran (1985) found out that improvement of outcomes can be ensured through changing the school's organizational climate. By making the changes in school structures, a positive school climate can be developed and faculty members will be able to concentrate more specifically on protective processes of resilience. Developing resilience is strongly related with protective factors. Nurturing protective processes help children to succeed in life. But it requires a change in beliefs, structures and policies in schools and communities. Thus, development of

resilience is related with change in beliefs, structures and policies. But these belief systems are constant in minds of the people in community. So it is somewhat difficult to change these belief systems and develop resilience. Implementation of sustained professional development, adoption of school policies and development of school cultures that promote learning and achievement of both students and teachers will help to change these belief systems. Change can also be brought about by focusing on organizational change involving the staff participation in all phases of school planning. School administrators and teachers have more ability to change the structures, language and policies that influence individual's belief systems. These structures, language and policies should be consistent with protective processes and developing resilience. The main purpose of making this change is to strengthen the protective processes and there by developing resilience. So while designing an intervention utmost care should be given to the protective factors.

### **Guiding Principles for Developing Intervention and Policies**

To make intervention programme based on vulnerability and protective factors more effective, one must have to follow some guidelines. Altogether ten principles are postulated by Luthar (2000).

#### 1. Strong theoretical bases

The design of all interventions must be based on a sound theoretical framework. The framework should give a provision to recognize the mutual, transactional influences between children and different aspects of their surrounding contexts.

#### 2. Strong theoretical and research basis in accordance with the target group

Both qualitative and quantitative empirical evidence must be collected systematically on modifiers, which affect the adjustment outcomes in the presence of particular adversity.

3. Reduction of negative outcomes and promotion of positive adaptation

Primary objective of intervention should be reduction of negative outcomes in children and development of different dimensions of positive adaptation or competence. Same importance should be given to both aspects.

4. Capitalization of specific resources

Intervention should be designed in such a way that it should minimize vulnerability factors and emphasize specific resources within the target populations. A healthy community can play a significant role in promotion of efficacy and competence in its individuals, and also to encourage the people to invest positive feelings in the community.

5. Operation of vulnerability and protective factors across multiple levels

Intervention should focus salient vulnerability and protective processes having multiple levels of influence. These different levels include individual, family and community (Sameroff & Chandler, 1975; Bronfenbrenner, 1977; Cicchetti & Lynch, 1993).

6. Strong developmental focus

In the opinion of Shirk (1988), Cicchetti and Toth (1992), and Noam (1992) knowledge about developmental domains like causal reasoning, emotional understanding and language ability should be applied while designing interventions for children and adolescents. These developmental focuses reflect attention and limit to the specific cognitive, social and emotional capacities associated with target individuals.

7. Contextual relevance

While designing an intervention, relevant aims and specific strategies should be formulized. This can be easily accomplished through collaboration of at-risk

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children, family, school and community. Input received from these different sources will help individual to view these goals as personally meaningful ones.

### 8. Self-sustaining services

Endeavours of intervention should aim at fostering self-sustaining services. A relevant example for this is Comer and Colleagues' School Development Project (Comer, 1987 and Haynes & Comer, 1996). They utilized service of parents, school personnel and community members for healthy child development.

### 9. Comparison of data

To ascertain the effects that are potentially unique to intervention, data should be compared with some 'appropriate comparison groups'.

### 10. Documentation and Evaluation

Accurate recording and evaluation of critical components and gains of intervention should be done through manualization. Careful documentation and assessment are helpful in designing interventions in future.

## **Intervention Strategies for Fostering Resilience**

Resilience research offered three basic strategies for intervention. They are Risk-focused strategies, Asset-focused strategies and Process-focused strategies.

### **Risk-focused strategies**

Risk-focused strategies aim at the reduction of exposure of children to negative experiences. Examples of these strategies are reducing teenage drinking, smoking or drug use through community programmes, preventing homelessness through housing policy, preventing child abuse or neglect through parent education, and reducing neighborhood crime or violence through community policing. Here the intention is to avoid or reduce the risk conditions.

**Asset-focused strategies**

Asset - focused strategies aim at increasing the amount, access and quality of resources to children for development of competence. Examples are providing a tutor, organizing club activities, offering parent education classes, and building a recreation center. These resources have direct effect on individuals. Some other assets have indirect effect on individuals. Examples are providing literacy programmes for parents, programmes fostering parenting skills, and programmes providing more training and resources to teachers for making them more efficient in classrooms. The search Institute has conducted research and programme development based on this strategy (Benson, Galbraith, & Espelad, 1988).

**Process-focused strategies**

These strategies aim at mobilization of the fundamental protective systems for development. Examples include building self-efficacy and motivation in children, teaching effective coping strategies for specific threatening situations, developing attachment relationship between children and parents through parental-sensitivity and home visit, nurturing mentoring relationship for children, encouraging friendships of children with peers in healthy activities such as extra-curricular activities, and supporting cultural traditions providing adaptive rituals and opportunities for children to establish bonds with pro-social adults.

In order to make children resilient, a comprehensive intervention including these three strategies is needed. Examples of such kind of intervention are Head Start (Zigler, Taussig & Black, 1992), the Abecedarian Project (Ramey & Ramey, 1998), The Large - Scale Fast Tract Prevention trial for Conduct Problems (Conduct Problems Prevention Research Group, 1999), and the Seattle Social Development Project (Hawkins, Catalano, Kosterman, Abbott & Hill, 1999). All these programmes aim at preventing or reducing problems and promoting good adaptation.

In the field of education, many researchers like Henderson (1987), Benard (1991, 1995), Winfield (1994), Comprehensive Teaming to Assure Resiliency in Children (1996), and Henderson and Milstein (1996) have very enthusiastically dealt with the concept of resilience and have developed programmes and policy recommendation based on their research findings.

### **The Comprehensive Teaming to Assure Resiliency in Children Project, 1996**

It is a project developed within the Health Related Services section of Minnaepolis Public School and it produced a handbook named Moving Beyond Risk to Resiliency: The School's Role in Supporting Resiliency in Children in 1996.

The project suggested five general strategies of school efforts to support resilience.

1. Providing opportunities for students to develop significant relationships with caring adults with the help of school personnel.
2. Providing opportunities for children to experience mastery and success through its foundation of social competencies and academic skills.
3. Offering opportunities for students to meaningful participation and perform responsible roles both within the schools and community.
4. Concentrating on identification, collaboration and co-ordination of support services for children and youth.
5. Ensuring that its structure, expectations, policies and procedures will not add risks to students' life.

These general strategies are broken down into specific steps for action. For example: in the first strategy, significant relationships can be established with the introduction of a mentor programme, small class size and allowing students and teachers to stay together for extended periods of time.

According to Oxley (1994), Wang, Haertel and Walberg (1994), Freiberg, Stein and Huang (1995), and Yancey and Saporito (1995) suggestions formulated by

Comprehensive Teaming to Assure Resiliency in children (1996) are very effective in promoting educational resilience.

According to Gilligan (1998), Silva and Stanton (1996) and Siraj-Blatchford (1998) schools through the academic, sporting and social experiences provide children with many developmental opportunities. Teachers can perform different roles of confidants, mentors, guarantors and the like for welfare of a child. Wehlage, Rutter, Smith, Lesko, and Fernandez (1989) opined that for a vulnerable child, a sense of ‘membership’ of a school may have great psychological and social value.

### **Characteristics of Schools Fostering Resilience in Students**

Since mid 1970s, effective educational practices have become a major area of research. Effective schools can provide powerful and nourishing environment for healthy development of a child. From such environments, students can acquire resilience that foster competence and academic achievement.

Lee, Winfield, and Wilson (1991), Masten (1994), and Wang et al., (1994) suggested that the effective schools model of 1970s and 1980s popularized by Edmonds (1979) focus on how schools affect resilience. Such schools promote academic success among traditionally low performing disadvantaged minority students by achieving a safe and orderly school environment in school which is closely linked to healthy social behaviour, a characteristic of resilient children.

There are two dimensions for school effectiveness viz., macro-level and micro-level factors. The macro level factors include total school environment and extra school variables. Micro-level factors constitute the effectiveness of classroom instruction, replicable patterns of teacher behaviours and student achievement.

The Carnegie Foundation for the Advancement of Teaching (1988) formulated fifteen criteria to assign a school as an effective one. Criteria are given below.

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- i. Clearly defined goals formulated by the school.
- ii. Language proficiency evaluation of each student by school.
- iii. Judging the number and types of books being read by students.
- iv. Appropriate assessment of core curriculum and general knowledge of students by schools.
- v. Plan for the enrolment patterns among various educational programmes at the school.
- vi. Overcoming anonymity among students and provision of a close relationship between each student and a mentor by organizing school into small units.
- vii. Flexible schedules at school.
- viii. Organizing programmes to encourage the responsibility of students to help each other to make school into an orderly and friendly place.
- ix. Deciding a plan for renewal of teachers and administrators.
- x. Clean, attractive and well-equipped schools providing effective learning through adequate learning resources and its proper use.
- xi. Active parental participation in school and parent consultation sessions.
- xii. Maintaining connections with community organizations and outside agencies to enrich learning of students.
- xiii. Rule for attendance pattern and graduation rates at school.
- xiv. Opening of teaching innovations and reward system for teachers with good leadership.
- xv. Make changes in dropout rate, in students seeking post-secondary education and getting jobs after graduation.

### **1. Fostering resilience through curriculum**

At any stages and level of education, curricula should be based on the age, capabilities and needs of children. Then, individuals can use their prior knowledge to assimilate new concepts, and theories. Wang, Haertel, and Walberg (1997) suggested some modification in curriculum to foster resilience. Curriculum should be rich, rigorous and learner centered. Such curricula provide exposure to children to

various subjects like art, drama, community service, and sports activities, where opportunities to use their prior knowledge are evident. Exposure to these experiences is very beneficial for at-risk children who are lacking higher level thinking skills to master all aspects of curriculum. In addition curriculum help establish connection between school, family and community. Further, curriculum has to provide life-related experiences that help solve complex problems. Curriculum based on the authentic, life-related learning experiences helps to develop confidence and self-esteem in at-risk children. Essentially a curriculum that fosters resilience has to do the following.

- 1) Promote extra-curricular activities and experiential learning to encourage creativity in students.
- 2) Design a curriculum which considers the racial, ethnic and linguistic diversity and gender and cultural equity to develop a democratic society.
- 3) Resist efforts to “dumb down” learning activities, ensuring all students higher levels of achievement.

## **2. Fostering resilience through instructional strategies that facilitate diverse learners**

Teachers should combine powerful research based instructional practices with caring and high expectations to facilitate learning of at-risk children and developing educational resilience. Teachers who are performing the role of facilitator are more effective than the role of the transmitter of knowledge. Teachers who are interested in delivering the content matter in classroom will hinder the self-learning capacity of the children. According to Wang, Haertel, and Walberg (1998), students get more benefits from the classroom where teachers give greater autonomy to students and facilitate their active engagement with learning. By developing increased responsibility in students for their own learning with different practices like inquiry, experimentation, discussion, reflection, application and evaluation of self-constructed knowledge by students, teachers can increase the sense of personal

agency of students. It is a characteristic of educationally resilient students. Semi dependent learners are more likely to become educationally resilient.

Students who are able to plan, organize and monitor their learning will be more successful in life. Students having meta-cognitive skills are able to plan better, monitor their own progress, correct-faulty steps in problem-solving and reflect on their own skills, learning process and achievements (Wang, Haertel, & Walberg, 1998). Developing these learning strategies and help-seeking behaviour in students make them more independent, and this significantly contributes to educational resilience in children.

Students in a classroom are different in various aspects like economic, ethnic, linguistic and racial backgrounds, gender, talents, interests and attitudes towards school, motivation, life standards, prior learning and school experience. Therefore, teachers should design most inclusive classroom environment and should use different but effective teaching strategies based on appropriate curriculum to cater needs of all children and develop their abilities. Therefore, every child has chance of success and expression in classrooms and they become resilient. Teachers who are effective in responding to academic difference of students use many strategies to provide instruction. Resilience promoting strategies that are effective to student diversity are (Wang, Haertel, & Walberg, 1998),

- 1) Recognizing ways the students can differ,
- 2) Building upon student's background and prior knowledge,
- 3) Matching classroom instructional practices to abilities, interests and experience of students,
- 4) Choosing appropriate assessment techniques based on student's background and prior learning,
- 5) Promoting teachers to play the role of facilitator to develop self-learning and responsibility in students,

- 6) Individualized instructional practices to accommodate different learning styles, interests, life experiences and personal strengths of students that make learning meaningful for every child to experience success.

### **3. Classroom designs promoting resilience**

Classrooms have significant impact on the development of children. In addition to learning the subject matter, child internalizes many things from teachers and peers. If teachers and peers are having good qualities, child will automatically get purified and achieve good standards. If teachers are willing to take some more responsibilities, every child will become emotionally healthy, demonstrate high academic achievement, becoming confident and optimistic to face the adversities confronted in life. For that, teachers should focus on the aspirations, talents and resources of children than their deficits.

In order to develop values like respect, tolerance, co-operation, love, and humanity classroom should be democratically organized. Well-organized classrooms have particular rules and regulations formulated by teachers and students together. Such classrooms offer opportunities for all students to contribute something to success of the classroom activities. Wang, Haertel, and Walberg (1998) who studied educational resilience emphasized the role of well-organized classrooms in prompting educational resilience observed the following.

- 1) Flexible physical arrangement of the classroom is resilience promoting. In such a type of arrangement, desks, tables and benches can easily be re-arranged for easy communication between teachers and students. Teacher can easily monitor the work of the students. Students have the opportunity for self-learning and group learning in such flexible classrooms.
- 2) Well managed classroom with correct rules and procedures determined by both teachers and students together will help students in self-governance. This will help develop social skills, autonomy and responsibility all of which promote learning, success and educational resilience.

- 3) Flexible classroom supports co-operative learning, small group work, peer-tutoring, mixed and ability grouping for at-risk children. Through such techniques at-risk students improve their self-concept and acquire new problem solving strategies and accountability.
- 4) In well-managed and well-organized classrooms, supreme priority is given to learning which is co-operative, inclusive, and democratic, leading to a climate that foster resilience.
- 5) Small group learning will benefit every student in the classroom. Inclusionary group practices like ability grouping, mainstreaming, co-operative learning, and peer tutoring will help students to gain confidence and relationships.

#### **4. Fostering resilience through evaluation**

Teachers using various strategies to provide instruction have to adopt different types of assessments like projects, exhibitions, portfolios, multiple-choice tests and performance tests (Mc Combs & Whisler, 1997). Hence, fostering resilience through evaluation requires the following.

- 1) Use various types of performance assessments. Assessment by portfolios and demonstration will provide opportunities to students to express what they have assimilated meaningfully.
- 2) Encourage students to develop self-assessment skills. It will inspire them to learn and become responsible to their learning.

#### **Fostering Resilience through Family, Peer Group, School and Community Relationships**

According to Berliner and Benard (1995), presence of positive relationships in family, school or in community leads to the enhanced capacity to overcome adversities in children. Research on resilience also revealed that positive relationships can make a greater difference in the life of an at-risk child. Therefore,

intervention has to take account of what is going on in children's home and community and arrange to foster their relationships in school and community.

In 1995, Berliner and Benard made a discussion on changing the schools from risk to resiliency. They focused on relationships, curriculum, instruction, grouping practices and evaluation in schools. Suggestions put forward by them are as follows.

- 1) Provide support to teachers to collaborate their work with others for student achievement.
- 2) Limit the class size. It will help to make rapport between teachers and students.
- 3) Increase the parent participation in schools. It will help to control the behavioral problems of students and increase school family relationships, motivation and achievement of students.
- 4) Promote peer learning activities. It leads to the contribution of all students in learning in small groups. It will increase co-operation between students.

After recognizing four important micro systems viz., family, peer group, school and community and its impact on development of children, Epstein (1984) developed a theory of family school connections. The greater the overlap among the four cultures and structures more fruitful will be the development of person. Greater overlap among these four micro systems will have a consistent and joint impact on developing person.

### **The role of teacher in fostering resilience**

Teacher, the second parent of child has to play a very significant role in reducing the stress and avoiding risks through the provision of positive supports and establishment of intimate relationships. In order to make the children resilient, some changes are needed in the teacher attitudes and expectations, instructional practices, classroom climate and organization, and curriculum. While designing an intervention to promote resilience, one should focus on these features. Coleman and

Hoffer (1987) pointed out the role of caring and engaging teacher in helping high school students to develop the values and attitudes essential to carry out their school work and achievement of high grades. They emphasized personal relationship between teacher and students.

Effective teachers can reduce the vulnerability and stress through the use of variety of strategies to develop personal and academic competence of students. Teachers using maximum resources to teach their children will result in enhanced development and promotion of resilience. Oghu (1992) identified different ways that teachers can use to help at-risk children with cultural and language difficulties; requiring teachers to understand about the cultural backgrounds of students to organize their classrooms and instructional programmes effectively. Ways suggested to collect information about the cultural backgrounds of at-risk children are: 1) Observation of students' behaviour, 2) Asking question to students and their families about their cultural practices, 3) Conducting research in school settings on ethnic groups, and 4) Reviewing the published research on children from diverse cultural groups. This information can be used by the teacher to design and implement instructional practices to promote maximum development in all students and to improve communication between teachers and parents. Recognition of this cultural diversity by teachers catering the needs of at-risk children will lead to the development of resilience in them.

While planning a lesson or interacting with students, teachers who are effective in responding to student diversity give much importance to individual difference. Effective teachers use a variety of strategies to create classroom learning environment which maximize the success of all students (Wang & Walberg, 1985; Corno & Snow, 1986; Wang, 1996). The role of teacher as a scaffolder enables students to carry out complex tasks. Here the teacher provides guided practice (Collins, Brown & Newman, 1990). Expert scaffolding and mediated instructional technique are very effective for special or at-risk children (Corno & Snow, 1986; Means, Chelemer, & Knapp, 1991).

Efficient teachers, can foster resilience in students by developing self-concept and promoting self-responsibility for their learning (Wang & Palinscar, 1989). Teachers can foster resilience through setting realistic expectations in students, helping them to master new experiences and developing students into active learners. When students become aware of their own role in their learning and success, they will work hard to overcome difficulties.

Teachers play a key role in providing empathetic support to pupils and helping them to set achievable goals. These are two behaviours involved in successful mentoring. Effective school environment which encourages teachers and other care giving adults to establish frequent contact with students is very supportive in promoting resilience (Lefkowitz, 1986).

### **Importance of teachers' caring attitude and high expectations**

A single teacher alone cannot improve the infrastructural facilities of classroom to promote learning and development of a child. But teachers can bring about a significant and long-lasting positive impact on children through their caring and loving attitude and high expectations.

Attitude is a mental pre-disposition which cannot be taught but caught like values. Children are spending almost all the day time with their teachers and other care-givers in the school than with their parents. This will provide teachers with opportunities to give caring and support to students. Many educationally resilient children attributed their success to a caring and supportive teacher. The most frequently encountered positive role model in the life of a child outside the family was a teacher (Werner & Smith, 1989). According to them, a special teacher was not only an instructor of academic skills for a resilient student, but also a confidant and positive model for personal identification.

Effective resilience promoting teachers can express their caring by showing interest in student's activities and achievements, providing concern to students,

giving respect to students, and holding high expectations about students. Teachers who model and desire resilient behaviours from their students are often called turnaround teachers (Benard, 1997). Turnaround teachers or mentors provide and model the protective factors that buffer risk and enable positive development by meeting youth's basic needs for safety, love and belonging, respect, power, accomplishment and learning, and ultimately for meaning ( Benard,1991 ).

Teachers have to realize that all students, including at-risk students, can also learn if taught using different and appropriate strategies. Teachers' faith in at-risk children is reflected in high expectations and helping them to fulfill these. This will promote the engagement and responsibility of at-risk children with content and class room activity, which in turn develops self-esteem and ultimately resilience in at-risk children.

#### **The role of peer support in fostering resilience**

Peer group has a very significant role in the healthy development of a child. Children and adolescents immediately share their feelings with their peers. Peers are the most important source of support after the family (Clark, 1991). Support provided by peer group to children and adolescents helps them to develop values of love, caring and co-operation. It also functions as protective shield for children against risks. Wang et al., (1990) provided evidence about the use of adaptive distancing by the children of divorced parents to keep themselves away from their parents. Such children find love, companionship, and care from their peers. Peer group also have significant influence on self-perceived academic competence of student and their attitude towards school. If peer group is positive in every aspect, the child will automatically develop good qualities. Attitude of peer group towards school is significant predictor of grades, achievement test scores, values related with good studentship and perceived competence (Cauce, 1986). Activities organized by the schools, like mentoring programme, peer tutoring, small group learning, and extra-curricular activities will help to develop positive peer relationship in students

which acts as protective factor for resilience. For example, co-operative learning strategies are the most effective school-based intervention for reducing alcohol and drug use. In co-operative learning strategies, peers can play a significant role.

### **The role of family in fostering resilience**

Researchers like Rutter (1979), Werner and Smith (1982), Rutter (1990) Masten, Best, and Garmezy (1990), and Benard (1991) have emphasized the importance of family in fostering resilience.

Parents and families are the first protective agents in child's environment (Masten, Best, and Garmezy, 1990). Parents provide opportunities to learn, to collect information, present role models and connect children with other resources. Caring by parents, structured family environments, holding high expectations for children's behaviour and encouraging children's participation in family life are protective factors of resilience (Benard, 1990). Benard (1991) also pointed out the importance of participation of children in family and household activities in fostering resilience. Rutter (1990) also reported that the importance of good parent-child relationships and secure and supportive personal attachment provided in early stages of life in helping children to overcome adversities in later life. Children who are lacking positive relationship with parents exhibited conduct disorders than children maintaining good relationship with parents (Rutter, 1979).

Family related variables like family cohesion, family warmth and absence of discord will protect the child from adversity. Garmezy (1974) and Werner and Smith (1982) emphasized the value of assigned chores, caring for brothers and sisters and undertaking part time work to support family and their role in enhancing self-esteem of children and ultimately fostering resilience. A structured family environment with consistent rules and regulation and discipline and holding high expectation about children will produce better outcomes among children from at-risk families (Bennet, Wolin, & Reiss, 1988). As the family becomes more resourceful and supportive, children's ability to face future challenges will be enhanced.

### **Importance of family involvement with schools**

Since there is significant correlation between school achievement and features of home environment (Iverson & Walberg, 1982; Graue, Weinstein, & Walberg, 1983) positive interference of family in the functioning of school is essential for ensuring effectiveness of schools. Educational intervention programmes incorporating family involvement are more effective than programmes aimed at students only (Weikart, Epstein, Schweinhart, & Bond, 1978; Walberg, 1984). Epstein (1984) and Moles (1982) have documented positive effect of family involvement in enhancing performance of children in schools. Active participation of family members in student's learning has improved student achievement, increased school attendance, and decreased student dropouts, delinquency and pregnancy rates (Peterson, 1989). Comer (1986) used parent involvement strategies like parent involvement in tutoring programmes, parent-developed workshops, assistance provided by parents to teachers in planning classroom activities for several years resulting in raising the rank of school to third out of twenty six. Thus, a number of family involvement programmes can be implemented to promote the healthy development of child (Wang, Haertel, and Walberg, 1994). Some programmes focus on families' involvement in school management or their actual presence in schools. Some other focuses on developing communication skills in parent and helping their children to follow good study habits and expectations. Others focus on family resources. Activities like home visits, job training, health care, mental health and social support services are undertaken to promote healthy development of children.

### **The role of community in fostering resilience**

Community based programmes provide more social support and adult aid, concrete help on tasks and opportunities to develop new interests and skills for students in order to foster resilience. Adverse chain reactions can be broken by finding ways to reduce risk and making opportunities and resources available in the

community to at-risk students (Swanson & Spencer, 1991). So while designing school improvement programmes educators should co-ordinate and integrate services and resources available in the community (Kirst & McLaughlin, 1990; National Centre in Education in the Inner cities, 1990). According to Wang, Haertel, and Walberg (1998) communities having well-developed and integrated networks of social organizations such as religious institutions, health care organizations, child-care services, job training centers, and recreational facilities can promote resilience. The availability and proper discharge of services by these community organizations functions as the protective factors to overcome risks. Community can foster educational resilience through frequent and explicit reinforcement of positive social values. A collaboration of family, school and community will be more effective in developing resilience (Wang, Haertel, & Walberg, 1994).

Presence of social organizations that promote healthy human development is an indication of a cohesive and supportive community (Garmezy, 1991). The abstract beliefs in religious protective figures and relationships with members of religious community serve as protective factors of resilience (Masten et al., 1990). Community having good standards of citizenship is a protective mechanism for residents (Long & Vaillant, 1984). Consistent social and cultural norms among community members and organizations are protective and resilience promoting. Such consistency in norms helps children and youth to develop desirable behaviour. Opportunities provided by community for children and youth to behave as valued members serve as another protective factor.

Benard (1991) has identified three characteristics of communities that foster resilience. They are, 1) Availability of social organizations providing resources to residents, 2) Consistency in social norms to inform members about desirable behaviour, and 3) Provision of opportunities for children and youth to perform the role of valued members in the life of community. In short, through the provision and integration of various human services community can foster educational resilience.

After analyzing the role played by families, schools, and communities in fostering resilience it is clear that school-linked programmes designed with proper consideration of family and community is effective in improving the overall quality of student's life and in fostering academic resilience. A learning environment which supports the intimate relationships between teachers, students and parents, an activity oriented curriculum, facilitative instruction and individualized instructional techniques, grouping techniques in classrooms, and various types of evaluation including portfolios, and self-assessment by students will lead a school from risk to resilience.

### **Educational Programmes and Reforms related with Resilience**

With an ecological perspective Wang (1996) conducted a work on promotion of school success in connection with National Center on Education in the Inner Cities at Temple University, Philadelphia. Ecological perspective views inner-city children and their families as a subsystem of a larger ecosystem. It is supported by the Ecological systems theory put forward by Bronfenbrenner (1979). This theory views the child as a developing one within a complex system of relationships affected by multiple levels of surrounding environment. That complex system of environment includes micro system, mesosystem, exosystem, and macro system. Microsystems is the immediate environment of child; mesosystem, interactions among micro system factors; exosystem, factors in wider community and macro system is values, laws, customs in the community. The National Center on Education in the Inner Cities is interested in promoting school success through establishing connections between families and community resources. They studied how social and health services provided to the needy children be connected with such services provided by schools and other educational institutions. After surveying a number of successful co-ordinated approaches, Wang (1996) opined that single component or practice cannot account for improvements, and combination of successful practices based on needs of students and site-specific strengths and constraints into an integrated system and its implementation is more effective.

Office of Educational Research and Improvement assigned National Research Center on Education in the Inner Cities to evaluate the reports related with Educational Resilience. The study was undertaken by Wang, Haertel, and Walberg in 1998. The study provided information regarding transformation of at-risk children to educationally resilient children. They identified eleven educational programmes and forty-one resilience promoting features. These features were grouped into five categories. The eleven educational programmes and reforms were Accelerated Schools, School Development Programmes, Core Knowledge Senses, Coalition of Essential Schools, 20/20 Analysis, Adaptive Learning Environments Model, Community for Learning, Head Start on Science, Reading Recovery, National Writing Projects and Higher order Thinking Skills.

Forty-one resilience promoting features were categorized into five groups viz., School Climate and Organization, Classroom Climate and Organization, Teacher Attitudes and Expectations, Instructional Practices and Curriculum.

Resilience promoting features corresponding to each of these five categories are as follows.

#### I. School Climate and Organization

1. Inclusive Schools
2. Structured and Orderly schools
3. Reduce effects of relocation
4. Coordinated school-linked services
5. Family involvement
6. Community involvement/Mentoring
7. Small schools
8. Site-specific improvement plan
9. Shared decision making (curriculum, instruction, governance)
10. Research-based effective educational practices
11. Academically oriented school culture

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12. Incentives for student success
13. Encourage choice and completion of academically demanding programs
14. Oriented to preventing problems.

### II. Classroom Climate and Organization

15. Inclusive classrooms/de-tracked
16. Small class size
17. Positive classroom climate
18. Well managed classrooms

### III. Teacher Attitudes and Expectations

19. Caring teachers
20. High expectations for student-learning

### IV. Instructional practices

21. Facilitating student learning
22. Active learning (learner-centred classroom)
23. Maximised learning time
24. Direct instruction
25. Adaptive learning strategies
26. Whole-class instruction
27. Small group instruction
28. One-on-one instruction
29. Peer-based learning activities
30. Frequent, high quality academic and social interactions
31. Metacognitive and student self-responsibility strategies

### V. Curriculum

32. Multicultural curriculum
33. Appropriate to students' cultural background

34. Appropriate to students' academic background
35. Challenging curriculum with rich content
36. Attention to foundation of basic skills
37. Multiple assessment strategies
38. Individual learning plans
39. Integration of content areas
40. Relevant curriculum
41. Alignment of curriculum and assessment

Based on these programmes, different types of educational reforms were designed which include pre-K, elementary, middle school and secondary school programmes. These programmes are related with science, reading, writing, higher orders thinking and self-directed learning skills. Analysis of reforms identified six dimensions of resilience promoting programmes. These dimensions are: 1) Programmes Targeted at Children At-risk of School Failure, 2) Comprehensive School Reform vs. Narrower Interventions, 3) Direct Influences on Student Learning, 4) Meeting Children's Basic Needs, 5) Student's sense of Belonging and 6) Adapting Curriculum and Instruction.

### **1. Programmes Targeted at Children At-Risk of School Failure**

Such programmes addressed a range of student needs including academic attainment, social skills and physical and psychological well-being. Programmes like Accelerated Schools, School Development Programme, 20/20 Analysis, Adaptive Learning, Head Start on Science, Reading Recovery, and Higher order Thinking Skills were designed for children at- risk of school failure.

### **2. Comprehensive School Reform Vs. Narrower Interventions**

A programme can be assigned as resilience promoting in nature based on a careful examination of the programme components, the role and expectations of teachers, curriculum content, the delivery of services to students with greater than

usual instructional needs and the classroom and school organization and climate. Whole school reforms are more efficient than narrower interventions. These programmes addressed the school related and instructional problems faced by children at-risk of school failure.

### **3. Direct Influences on Student Learning**

Psychological, physiological and environmental characteristics influence the learning and achievement of students. According to Wang, Haertel, and Walberg (1994) psychological characteristics like ability and prior achievement and the features of home and classroom influence learning achievement of child. One can infer that if home and classroom environments are educationally supportive and challenging, children will learn and achieve more. Some resilience promoting programmes foster psychological attributes like self-regulated learning, interpersonal skills, problem solving, and other capabilities like literacy and numeracy which can directly influence student learning.

### **4. Meeting Children's Basic Needs**

Resilience research findings emphasize the collaboration of home, classroom, school, peer group and community contexts for healthy development. The influence and support of all these resources will help children to overcome adversities encountered by them. School linked, co-ordinated services, school wide orientation to problem prevention and inclusive practices are the three key programmes that directly meet needs of children.

### **5. Students' Sense of Belonging**

Sense of belongingness is essential for perfect life. If children are provided with democratic schools, co-operative classrooms, caring teachers and opportunities for social interaction they will develop sense of belongingness more. At school organization level, inclusive practices, small educational units, peer tutoring, mentoring, and collaborative learning activities will enhance sense of belonging in

students. Opportunities for children to interact with teachers, care-givers and peers are one feature of programme that provides students with sense of belonging.

## **6. Adapting Curriculum and Instruction**

According to Wang, Haertel, and Walberg (1998) to promote educational resilience, students must have opportunities to acquire advanced subject area knowledge and skills. Individual learning plans, adaptive instructional strategies, multicultural and intellectually challenging curricula based on children's cultural backgrounds and academic needs and use of frequent assessments in a variety formats promote resilience in students.

Resilience promoting school programmes and reforms which collaborate family, school and community should be strengthened and implemented to foster healthy development and academic success. Educational resilience can be promoted by teachers adopting new perspective of their students, as individuals who can make choices, acquire knowledge and skills and achieve a fulfilling life. Along with this, teacher's caring attitude and high expectation will enhance resilience in students.

Practices related with fostering cognitive abilities, motivation and behaviour, classroom management, climate and student-teacher interactions and quality of instruction are the factors which differentiate effective and ineffective schools. On these practices, class teachers have great control to make positive changes. The variables that are away from learning settings like school and district demographics, state and school policies have least influence on the effectiveness of school (Wang, Haertel & Walberg, 1994).

### **Select Protective Factors in Present Study**

Based on the focus of various intervention programmes and indication of literature reviewed on the protective factors which acts as sources of resilience, the following protective factors were selected as variables in this study. The select protective factors are composite variables comprising of many less minor protective

factors. The select protective factors, components included in its measurement and the major works which site them as protective are presented below.

### **Social competence**

Meaning: - Social competence denotes the social, emotional and cognitive skills and behaviours that a child needs for successful social adaptation.

Components: Communication skills, responsiveness, flexibility, and empathy.

Rutter (1980, 1984, 1985), Waters and Sroufe (1983), Garmezy (1985), Zigler and Glick (1986), Werner and Smith (1988), Masten, Best and Garmezy (1990), Consortium on the school - Based Promotion of Social Competence (1994), Gore and Eckenrode (1994), Berliner and Benard (1995), and Grotberg (1996) studied about Social Competence as a within-child protective factor.

### **Problem solving skill**

Meaning: Problem solving is a higher order cognitive and mental process and it considers all the intellectual functions. It is a movement from given state to desired goal.

Components: Ability to plan, resourcefulness in seeking help from others, and think critically, creatively, and reflectively.

Werner and Smith (1977), Parker et al., (1990), Nelson- Le Gall and Jones (1991), Grotberg (1996), Hart, Olsen, Robinson and Mandlco (1997), and Grantham (2004) studied about Problem Solving Skill as a within-child protective factor.

### **Critical consciousness**

Meaning: Accomplishing a thorough understanding of the world, allowing the perceptions and exposure of perceived social and political contradictions and

taking actions against the oppressive elements in one's life that are illuminated by that understanding.

Components: Reflective awareness of structure of oppressions and creating strategies for overcoming them.

Benard (1995) and Garmezy (1991) studied about Critical Consciousness as a within-child protective factor.

### **Autonomy**

Meaning: It is a sense of one's own identity and a capacity to act independently, and to exert appropriate control over one's environment.

Components: Sense of task mastery, internal locus of control, self-esteem, and self-efficacy.

Nelson-Le Gall and Jones (1991), Berliner and Benard (1995), and Grotberg (1996) studied about Autonomy as a within-child protective factor.

### **Sense of purpose**

Meaning: Individuals' ability to know what is important to self, to assess realistically one's abilities, to have energy for goal direction, to exercise emotional self-regulation, and to pursue inner directions over time, and having a definite purpose in life.

Components: Goal direction, educational aspiration, achievement motivation, achievement oriented outlook, persistence, dedication, hopefulness, optimism, and spiritual connectedness.

Berliner and Benard (1995) and Gizir and Aydin (2009) studied about Sense of Purpose as a within-child protective factor.

### **Peer support**

Meaning: Stepping-stone of healthy future development, it is the ability of children to perform different roles, viewing things from other person's perspective, following the social norms and conventions, helping the child to imbibe reciprocity, co-operation and negotiation.

Components: Presence of peer support, caring towards students facing stressful life circumstances, engagement of peers in pro-social constructive behaviours that foster good health, academic achievement, and responsible citizenship, co-operative learning programmes, and use of small learning groups.

Alva (1991), Gonzalez and Padilla (1997), Wang, Haertel, and Walberg (1997), Deborah, Mary, and Adaline (2002), and Powers, J. D., Bowen, G. L., & Rose, R. A. (2005) studied about Peer Support as a protective factor.

### **Family resources**

Meaning: It is the capacity of a family to meet the basic needs of children like housing, food, and clothing, provision of adequate time and family interactions, to make available social resources in meeting needs and achieving goals, physical presence of parents and attention provided by parents to child.

Components: Food, shelter, basic needs, connections to other resources, transportation, physical growth, information, learning opportunities, and behavioural models.

Masten, Garmezy, Tellegen, Pellegrini, Larkin, and Larsen (1988) and Wang, Haertel, and Walberg (1994) studied about this.

### **Family psychological nurturance**

Meaning: It is the provision of opportunities, support, and confidence to children, and holding high expectations to enhance their abilities. This include direct

behaviours such as volunteering in classrooms and helping in homework, parents' expectations and aspirations for their children's achievement, parent child communications about the school, parents support in educational experiences and in school based activities as meeting with teachers, and home based practices viz., monitoring and structuring children's time, engaging children in learning stimulating activities, and discussing school related matters and education.

Components: Academic, moral, and social expectations, nurturing self-esteem, and self-efficacy, and involvement in programmes and courses that advance skill.

Benson, Galbraith, and Espelad (1988), Masten, A. S., Garmezy, N., Tellegen, A., Pellegrini, D. S., Larkin, K., & Larsen, A. (1988), Masten, A. S., Coatsworth, J. D., Newmann, J., Gest, S. D., Tellegen, A., & Garmezy, N. (1995), Baldwin, Baldwin, and Cole (1990), Berliner and Benard (1995), Horn and Chen (1998), and Devlin and O'Brien (1999) have conducted research about the importance of Family Psychological Nurturance in fostering resilience.

### **Family environment**

Meaning: Family environment refers to all objects, forces, and conditions in home which influence the physical, emotional, and intellectual development of child. Close parent-adolescent relationships, good parenting skills, shared family activities and positive parent role modeling are related with healthy development of adolescents.

Components: Strong relationships with adults, family warmth, family cohesion, and children perform chores to family, orderly house hold environment, and absence of family discord.

Iverson and Walberg (1982), Graue, Weinstein, and Walberg (1983), Bennet, Wolin, and Reiss (1988), and Wang, Haertel, and Walberg (1997), and Walsh (1998)

were the researchers studied the significance of Family Environment in developing resilience.

### **Authoritative parenting**

Meaning: An authoritative parenting style is most closely aligned with consistent parenting philosophy. It encourages growth of strong inner discipline of children through treating children with respect. It is more democratic in nature. Authoritative parents express love and affection to their children, without fear that such expressions may affect their ability to discipline.

Components: Establishment of rules and guidelines that their children are expected to follow, willing to listen to questions, more nurturing and forgiving rather than punishing, monitor and impart clear standards for their children's conduct, and supportive rather than punitive.

Masten, A. S., Garmezy, N., Tellegen, A., Pellegrini, D. S., Larkin, K., & Larsen, A. (1988), and Baldwin, Baldwin, and Cole (1990) studied about the importance of Authoritative Parenting and its relation to resilience.

### **Curriculum adaptation to student diversity**

Meaning: Curriculum having the feature of diversity is ready for incorporating adaptation, goals and teaching methodologies. Curriculum should not be closed. It should allow imbibing new educational experiences. Such an adaptive curriculum can consider the participations of all learners in learning process. Classroom with diverse educational activities will increase interest of all students. Curricular adaptations should include organizational modifications in goals and contents, methodologies, and in evaluation philosophy and in strategies.

Components: Teacher sensitivity to students' cultural and intellectual diversity, adaptation of curriculum content and instructional strategies to ensure

students' learning, and pre-requisite content instruction to overcome students' knowledge benefits.

Lee, Winfield, and Wilson (1991) and Wang, Haertel, and Walberg (1997), studied about Curriculum Adaptation to Student Diversity as a protective factor.

### **Caring teachers**

Meaning: Caring is a process that includes getting to know each other, reflecting on prior behaviour, patience, honesty, and humility, and trust. Caring behaviour is critical, especially for students at-risk of cultural diversity and fear of failure. Caring in teacher-student relationship can be explained in terms of a role where the teacher is expected to extend care for students as part of professional responsibility and addressing needs of students in a culturally responsive manner.

Components: Committed relationship between students and teachers, high expectations for all students, promotion of student self-concept, student mastery of new experiences, and role modeling of pro-social behaviours.

Alva (1991), Winfield and Manning (1992), Wang, Haertel, and Walberg (1997), Geary (1998), Benard (2004), and Knesting (2008) studied about the significance of Caring Teachers in fostering academic resilience.

### **Emerging Directions in Interventions for Resilience**

**1. Intervention and multiple protective processes.** While designing intervention, one should effectively tie together empirically identified protective processes. Researchers like Jessor, Van Den Bos, Vanderryn, Costa, and Turbin (1995), Fergusson and Lynskey (1996), Furstenberg, Cook, Eccles, Elder, and Sameroff, (1999), and Jessor, Turbin, and Costa, (1998a, 1998b) have proved that multiple protective factors can increase the chances of positive outcomes among at-risk groups.

**2. Flexible evaluation of interventions.** The new promising intervention demands flexible evaluation approaches. Appropriate control or comparison groups should be included in the intervention to assess its effectiveness (St. Pierre & Layzer, 1998). Multilayer, multi-component community-based intervention models are more effective in attaining sustainable change in both individuals and systems. It should be evaluated through descriptive, non-experimental strategies (Weissberg & Greenberg, 1998). Luthar and Cicchetti (2000) supported the view of Weissberg and Greenberg (1998) and opined that long-term, effective evaluations should integrate the quantitative experimental studies with more qualitative, process-oriented approaches.

**3. Sensitive time and duration of intervention.** According to Felsman and Vaillant (1987), Luthar (1999, 2000), Rutter (1990, 2000), and Werner (2000) an important point emerged from research on resilience is that each intervention has a particular value different at every developmental transitions. Early childhood interventions have preventive value (Zigler & Styfco, 1996). According to Weissberg and Greenberg (1998) during the development children have different sensitive periods. In each period, children respond differently to different interventions. Educationally based interventions are more suitable to pre-schoolers than toddlers. Interventions targeting attitudes towards deviant behaviours are effective with pre-adolescents and adolescents. Longer period of interventions generally found to be more effective than shorter ones (Zigler & Styfco, 1993; Weissberg & Greenberg, 1998). Intervention during the periods of transition such as entry into school, into adolescence or into the work force is common. During these periods, children have to face normative developmental challenges (Felner, Brand, Adan, Mulhall, Flowers, Sartain, & Dubois, 1993; Eccles, Lord, & Roesser, 1996).

**4. Greater attention to mental health.** Knitzer (2000a) noted that there is little awareness about the reality that child's emotional state also affect his or her ability to achieve the level of social and cognitive competence necessary to learn. The value of clear attention to mental health is evident in several empirical researches (Luthar,

2000). 1) Studies on resilience conducted by Luthar (1991), Radke-Yarrow and Brown (1993), Luthar, Doernberger, and Zigler (1993), and Cohler, Stott, and Musick, (1995) revealed that even when the at-risk individuals demonstrate exemplary, socially conforming behaviour profiles, many of them struggles with inner distress. 2) Uncontrolled emotional distress can inhibit ability of the individual to display adequate functioning across various everyday roles (Hammen, 1990; Beckham & Leber, 1995; Brent, Mortiz, Bridge, Perper, and Canobbio, 1996). 3) In the absence of appropriate interventions, resilient individuals may develop a range of difficulties over time (Egeland, Carlson, Sroufe, 1993; Apfel & Seitz, 1997). 4) For many vulnerable low income individuals, provision of mental health services is an important agency to bring long term productivity and employability (Knitzer, 2000a). So, policies and programmes should focus also on reducing the emotional distress of individuals and on retaining the positive adjustment outcomes.

**5. Broader perspective on at-risk individuals.** Luthar and D'Avanzo (1999) stated that at-risk youth alone cannot find a solution for their emotional problems. Parents who are aware of their children's problems do seek help from others to solve it (Puura, Almqvist, Tamminen, Piha, Kumpulainen, Rasanen, 1998). So all policies and programmes aimed at fostering resilience should take all families and children into adequate consideration (Jessar et al., 1998b; Takanishi, 1996). Such a kind of approach will result in long lasting positive outcomes in both high-risk and low-risk individuals. Intervention should aim at vulnerability and protective factors at multiple levels and should formulate goals and use technique in accordance with life circumstances and ecologies of the individuals.

In the field of educational research there are a variety of ways to address the achievement gap issue in students. Some of them focus on failure and some others on success. According to Gardynik and Mc Donald (2005) there is growing emphasis on the second category research i.e., academic resilience. It is a powerful educational tool to protect at-risk students. Researchers like Gardynik and McDonald (2005) and Milstein and Henry (2000) opined that research on academic

resilience is based on the idea that an effective and under utilized ways to lessen the achievement gap is attaining a thorough understanding of the success. Resilience studies focus on successful adaptation of specific at-risk populations and their achievements. According to Moote and Wodarski (1997) definition of at-risk is something different in the educational field and it refers to students from low-socioeconomic status (SES) and disenfranchised backgrounds statistically less likely to achieve academically. So educationists should focus on helping at-risk students to achieve academically in presence of risks. A clear understanding of the types of protective factors is very much essential to save at-risk students. According to Masten and Coatsworth (1998), the way in which an individual acquire, maintain, and express strength in the middle of adversity vary depending on developmental stage, external expectations, family relationships, and life circumstances. The developmental stage of adolescence is very much delicate and adolescents experience multiple problems and are most at-risk for long term difficulties. So, educationists and practitioners should have a thorough understanding about both the risks and protective factors within-individual, within-family, within-school, and within-community to lessen the effects of risks on academic achievement by mobilizing the protective factors. Present study attempted to categorize the within-individual, within-family, within-school, and within-community protective factors into clusters under specific heads which will enable educationists and counselors to design effective interventions focusing on at-risk students to gain confidence to demonstrate academic resilience.

### **Studies on Risk in Academic Contexts**

Irvin (2012) conducted a study to determine whether behavioural and psychological engagement in middle school has any protective role, and thereby contributing anything to the resilience of African American youth from low-income rural communities. Teacher reports of adjustment viz., aggression, academic competence, and popularity in the sixth grade were collected. Data on behavioural and psychological engagement across the seventh and eighth grade were collected

from student self-reports. In the ninth grade, achievement data were obtained from school grades and aggression was measured by peer assessments. Early adjustment configurations were derived from sixth grade teacher reports to identify profiles across multiple behavioural measures that increase risk. Regression analyses indicated that youth with Troubled, Tough, and Disengaged profiles were at-risk for difficulties in subsequent achievement and aggression. In addition, behavioural and psychological engagement had a main effect relation with achievement and aggression. This indicated that engagement had a protective role in resilience development.

Reyes and Elias (2011) identified that Latino youth confront significant challenges and engage in many risky behaviours that can hinder positive development and well-being such as attempted suicide, lifetime cocaine use, unprotected sex, and dropping out of school from National statistics. At the same time, many Latino youth are developing well despite exposure to significant adversity. A significant question before researchers, educators, and policy makers is how to progress the health, well-being, and achievement of more Latino youth. This article considers conceptual issues related to resilience and culture, risk, and protective factors relevant to Latinos and especially role of schools in fostering resilience. Special attention is paid to building of child-based resources such as social-emotional competencies, and social system resources such as a caring school climate.

Alaska Division of Behavioural Health (2011) conducted a review of the research conducted by Prevention Research Committee for Behavioural Health (2006), Behavioural Health Epidemiological Outcomes Workgroup (2007), and SPF/SIG Epidemiological Influences Workgroup (2010) on risk and protective factors for adolescent substance use and other problem behaviour. Extensive national research over fifty years has demonstrated a strong association between specific social conditions, personal characteristics, experiences and involvement in unhealthy behaviour. This research has identified these influences as risk and

protective factors. This paper provided an overview of the cross disciplinary research behind each of the factors. Risk factors are characteristics within the individual or conditions in the family, school or community that increase the likelihood of engaging in unhealthy behaviour like the use of alcohol, tobacco and other drugs, violence, suicide, or early sexual activity. The more risk factors present in a child's life, the greater the likelihood of problems in adolescence. Protective factors are characteristics within the individual or conditions in the family, school or community that assist the individual cope successfully with life challenges. When people can successfully negotiate their problems and deal with pre-existing risk factors, they are less likely to engage in unhealthy behaviour. Protective factors are instrumental in healthy development; they build resiliency, skills and connections.

Perez, Espinoza, Ramos, Coronado, and Cortes (2009) examined academic resilience of 104 undocumented immigrant Latino students. Results from regression and cluster analyses indicated that despite specific risk factors like elevated feelings of societal rejection, low parental education, and high employment hours during school, undocumented students who have high levels of personal and environmental protective factors viz., supportive parents, friends, and participation in school activities reported higher levels of academic success than students with similar risk factors and lower levels of personal and environmental resources. The results also suggested inconsistency in risk exposure among undocumented students with some students reporting low levels of risk accompanied by high levels of personal and environmental protective factors.

Shaw (2008) identified that students with borderline intellectual functioning are a large population at-risk for school failure. Educational trends like use of response to intervention models of special education eligibility, implementation of inclusive education, and the accountability components of No Child Left Behind, have increased awareness and served as a catalyst for improving the education of students with borderline intellectual functioning. However, students received few supportive educational services. This study emphasized that effective instructional

practices can build academic resilience skills to restructure the important, but often-ignored, risk factor of borderline intellectual functioning.

According to Shonkoff and Phillips (2008), development of children in very low resource or at-risk family contexts is a special area of interest to scientists, and practitioners. Developmental researchers have conducted studies on the influence of poverty and other aspect of family resources on the development of children. Majority of the researches conducted on the effect of family resources have focused on children living just-below or above the poverty line. In United States, poverty is highly correlated with parental education and is over represented among racial and ethnic minorities.

Plunkett, Henry, Benjamin, Houltberg, Sands, and Abarca-Mortensen (2008) conducted a study which used dominance analysis to examine the relative importance of ninth grade, Mexican-origin adolescents' perceptions of academic support from significant others. Academic support from friends was least important in explaining academic outcomes.

Hjemdal, Friborg, Stiles, Martinussen, and Rosenvinge (2006) constructed a scale named the Resilience Scale for Adolescents (READ) with confirmatory factor analysis and cross validated by factor model. The results showed that the READ has sound psychometric qualities and it measures all the central aspects of psychological construct of resiliency.

Deborah, Mary, and Adaline (2002) examined 2600 sixth, eighth, and tenth graders from an urban public school who had participated in a comprehensive survey. The objective was to find the extent to which parent, school, and peer support affect the multiple domains of resilience. Peer support was negatively associated with resilience in the domains of substance abuse and school misconduct/delinquency.

In 1993, Reyes and Jason conducted a study on successful high school students to examine the factors that are responsible for success and failure among Latino students from an inner-city high school. Based on four main areas viz., family background, family support, overall school satisfaction and gang pressures, students were interviewed individually by the researchers. Both the high risk and low risk students were similar with regard to socio economic status and parental supervision. But low risk students are more satisfied with their schools. In this study, criteria used to differentiate high and low risk students were their ninth-grade attendance rate and academic achievement.

Felner, Aber, Primavera, and Cauce (1985) conducted a study on at-risk populations and academic performance and concluded that higher levels of informal support like friends among high school students was negatively related to their academic adjustment. Adolescents having strong informal support systems in school are subjected to higher levels of peer pressure leading to conformity and poor attitudes towards their academics. Others (Newman et al., 2000) have found that friends' influence has a negative impact on the academic success.

### **Studies on Protective Factors of Academic Resilience**

Thomas (2011) conducted a study to explore the protective factors related to the resilience of young adult children of divorce. Using Richardson's Resilience Model, author examined protective factors identified by participants within the categories of individual, family, and community protective factors. Richardson's Resilience Model explains that a person is at a state of physical, mental and spiritual homeostasis. When a disruption occurred, after the disruption the person reintegrated in one of four ways: dysfunctional, with loss, back to homeostasis, or resilient. This study specifically researched resilient reintegration and protective factors that contributed to it, using multiple case study methodology. Sample was students enrolled in freshman level First Year Studies or English classes. They were given Demographic Survey and a resilience assessment to complete as a screening

tool to determine those who met inclusion criteria. The criteria included: a) parental divorce in the last 12 years; b) scores indicating resilience on the Healthy Kids Resilience Assessment; c) aged 18-19; d) enrollment in a First Year Studies class in the spring semester of 2009 or ENG 101 in the summer semester of 2009; and e) willingness to participate in the study. Of the five students selected to participate, three were males and two were females. Results of the study categorized protective factors into three groups viz., individual, family, and community. Individual protective factors included character traits, personal strategies, and individual abilities that helped the participants to be resilient. Family protective factors included both immediate and extended family members. Within the community, participants identified friends and activities as community protective factors.

Weaver (2010) conducted a study to explore the relationship between cultural/ethnic identity and individual protective factors of academic resilience. Sample constituted two different ethnic groups i.e., African Americans and European Americans in one high school in Virginia. Correlational design and multiple regressions were employed to compare the students. Students' ethnic identity scores were compared with their scores of resilience. The relationship between ethnic identity, resilience, and academic success also examined. A significant positive relationships existed between cultural/ethnic identity and resilience, and between cultural/ethnic identity and individual protective factors of resilience viz., optimism, self-efficacy, interpersonal sensitivity, and emotional control. Resilience predicted grade point average (GPA) and parents' educational level was significantly correlated with their children's GPA. There was no significant difference between Black and White students on measures of ethnic identity, resilience, and negative life events.

Morales (2010) conducted qualitative interviews with 50 high-achieving low-socioeconomic students of colour, and identified and explored two clusters of important and symbiotic protective factors. Each cluster consisted of a series of interrelated protective factors identified by students as crucial to their statistically

exceptional academic achievement. Cluster 1 protective factors included willingness/desire to “class jump” (move up in social class), caring school personnel, sense of obligation to one’s race/ethnicity, and strong future orientation. Cluster 2 protective factors included strong work ethic, persistence, high self-esteem, internal locus of control, attendance at out-of-zone school, high parental expectations supported by words and actions, and mother modeling strong work ethic.

Gizir and Aydin (2009) examined the role of potential individual characteristics and environmental protective factors in promoting academic resilience among impoverished eighth-grade students in Turkey. Home high expectations, school caring relationships and high expectations, and peer caring relationships were the prominent external protective factors that predicted academic resilience. Among internal protective factors, having positive self-perceptions about one's academic abilities, high educational aspirations, empathic understanding, an internal locus of control, and hope for the future were positively related with academic resilience of adolescents in poverty.

Wilks (2008) conducted a study to examine the relationship between academic stress and perceived resilience among social work students in order to identify the role of social support as a protective factor of resilience on the above mentioned relationship among 314 social work students (BSW=144; SW=170) from three accredited schools or programmes in the southern United States. A conceptual model of moderation was employed to test the role of social support as protective factor. Voluntary survey data were gathered on demographics and constructs of academic stress, family support, friend support, and resilience. To show the composite impact of demographic and model factors on resilience outcome hierarchical regression analysis was conducted. Moderation was tested using a traditional regression series as guidelines of moderation with continuous variables. Path analyses showed the main effects and moderation in the study’s conceptual model. The sample reported moderate levels of academic stress and social support,

and a fairly high level of resilience. Academic stress negatively related to social support and resilience but social support positively influenced resilience. Academic stress was the reason for most variation in resilience scores. Friend support significantly moderated the negative relationship between academic stress and resilience. The study demonstrated the role of friend support as a protective factor of resilience among an environment of academic stress. Author discussed about the implications for social work faculty and internship agency practitioners.

Knesting (2008) interviewed African-American and white students at-risk of leaving school in grade 9-12. Findings proved that students were likely to obey in school when they perceived teachers as caring individuals. Teacher caring enhanced potential and self-esteem of students.

Plunkett, Henry, Benjamin, Houlberg, Sands, and Abarca-Mortensen (2008) conducted a study which used dominance analysis to examine the relative importance of ninth grade, Mexican-origin adolescents' perceptions of academic support from significant others viz., mothers, fathers, teachers, and friends in relation to aspects of academic success. Data collection techniques were self-reporting and school record data. Data were collected from 216 Mexican-origin adolescents living in intact families. The results proved that academic support by teachers was the most salient predictor of academic satisfaction and grade point average for both female and male students. Academic support from opposite-sex parent explained variation in academic motivation. Academic support from friends was least important in explaining academic outcomes.

Utsey, Bolden, Lanier, and Williams (2007) examined the role of culture-specific coping in relation to resilient outcomes. A survey questionnaire packet containing measures of culture-specific coping, and traditional resilience factors viz., cognitive ability, social support, and familial factors was administered on 385 participants who were African-Americans from high risk urban communities. Resilient outcomes were physical, psychological, social, and environmental quality

of life. Structural equation modeling was used to test the degree to which culture – specific coping would uniquely contribute to the prediction of quality of life above and beyond the traditional predictors of resilience. Findings indicated that spiritual and collective coping were statistically significant predictors of quality of life outcomes above and beyond the traditional predictive factors. Overall, the findings indicated that both traditional and cultural factors were predictors of resilient outcomes i.e., positive quality of life indicators.

Ungar (2007) discussed that what one learns from children who survive and thrive or what one calls resilient is that both individual and environmental factors can protect them from the adversities. These factors vary from one culture to another. Resilience is not an individual quality. It is a condition of the community, the school, the family as much as the quality of the child. Educators need to show humility, to ask students about differences and to demonstrate flexibility in the educational environment in order to make school more comfortable for children of different ethnicities and help them along the path to resilience.

Morrison, Brown, D’Incau, O’Farrell and Furlong (2006). opined that literature on risk and resilience, school engagement and positive psychology offers school psychologists a new perspective to consider students’ progress through school. Resilience literature emphasizes the importance of monitoring student’s internal and external assets. Authors reviewed a framework that highlights students’ strengths and contextual protective factors, moving beyond an exclusive focus on student deficits. This framework offers school psychologists a systematic set of empirically derived categories for thinking about student development and how schools can foster protective possibilities which help to focus protective factors, to facilitate a “developmental trajectory” perspective, and to recognize the role of school, peer, and family contexts.

Condly (2006) found that in spite of the most adverse circumstances, some children manage to survive and even thrive academically and socially into

adulthood. A complex array of individual, family, and community factors has been identified that best explains resilience and lays the foundation for programmes and interventions targeted at fostering the development and maintenance of resilience in at-risk youth.

Brooks (2006) identified that children and youth are at-risk of some negative outcomes because of hazards in their environment. Resilience literature provides guidelines for minimizing risks and promoting positive outcomes for children and youth. The work provides a rationale for incorporating resilience building efforts in schools and explores ways in which school environment could be structured to strengthen resilience in children and youth. The work proposed that schools can strengthen resilience by developing social competence, increasing bonding between students and caring adults, communicating high expectations for students' academic and social performance, maximizing opportunities for meaningful participation of students in school environment and creating partnership with families and community resources. Limitations of a school focused approach for enhancing resilience is demonstrated.

Voisin and Neilands (2005) viewed caring relationships as a positive intervention approach for students who are at-risk of many behaviour. Supporting this, Ball (2003) opined that once teachers demonstrate caring, they can take teaching to the highest level: inspirational teaching and caring education can play a significant role in students' success.

Stewart, Sun, Patterson, Lemerle, and Hardie (2004) reported the first phase of a multi-strategy health promotion project which used a whole-school approach to promote resilience in children of primary school age in domains like school, family and community in urban and rural locations in Queensland, Australia. Sample of the study comprised students from years 3, 5, and 7 (ages 8, 10, 12 years), their parents/care-givers and staff in 20 primary schools. Evidence emerged from this phase of the project confirmed that the school environment makes a major

contribution to the development of psychological resilience in children. Schools in which students reported higher self-ratings of resilience were associated with more positive adult and peer social networks and feelings of connectedness to adults and peers, and a strong sense of autonomy. There was also high agreement by parents and caregivers regarding perceptions of the school environment. These schools rated remarkably on 'health promoting school' (HPS) attributes and principles. Characteristics of such schools included shared decision-making and planning, community participation, a supportive physical and social environment, good school-community relations, clearly articulated health policies and access to appropriate health services.

Buckner, Mezzacappa, and Beardslee (2003) conducted an investigation of very low income families and examined the characteristics that differentiate resilient and non-resilient school children. Study focused on the self-regulation skills of students, and effects of differences in the experience of negative life events and chronic strains were controlled. Self-regulatory skills, self-esteem, and active parental monitoring differentiated the resilient and non-resilient students.

According to Orr (2003), parents having low SES may be unable to afford resources such as books, computers, or tutors to develop a positive literary environment in home.

Julia, John, and Cicchetti (2002) conducted a study on the relationship between children's personal attributes and peer competence in a sample of 141 African -American preschool children who participated in Head Start. Variable oriented analysis confirmed that dispositions of temperament, emotion regulation, autonomy, and language were related to children's peer play competence in the classroom. Person oriented analysis showed distinctive profiles of personal attributes connected with adaptive preschool social functioning. This study emphasizes the profile approach in the identification of children who fail to flourish within an early intervention programme. Study recommends incorporating constructs of adaptability

or flexibility into existing culturally specific theoretical frameworks for African-American children.

Deborah, Mary, and Adaline (2002) examined 2600 sixth, eighth, and tenth graders from an urban public school who had participated in a comprehensive survey. The objective was to find the extent to which parent, school, and peer support affect the multiple domains of resilience. Relation among seven domains of resilience and parent, school, and peer support among children who had been victimized by community violence, those who witnessed such violence and a no-exposure control group was identified using structural equation modeling. Both parent and school support were significantly positively associated with resilience in children who had been exposed to community violence, and peer support was negatively associated with the resilience in the domains of substance abuse and school misconduct/delinquency.

Fan and Chen (2001) and Keith, Troutman, Bickley, Trivette, and Singh (1993) identified that home based parental involvement including parental expectations and parent child communications about the school have strong connections to the positive child outcomes.

Several researchers like Reyes and Jason (1993), Gregory (1995), Smokowski, Reynolds and Bezruczko (1999), Newman, Myers, Lohman, and Smith (2000), found that resilient adolescents have ambivalent feelings and beliefs about friends and romantic relationships for their academic success.

Studies conducted by CRESPAR were reviewed by Nettles, Mucherach, and Jones (2000). All the studies examined the role of social resources like parents, teachers and schools on resilient outcomes of child and adolescent students. Results revealed that presence of caring parents and supportive teachers' participation in extra-curricular activities were most beneficial to the academic achievement of students. The importance of social resources and need for effective programmes of intervention were highlighted.

Fantuzzo, Tighe and Childs (2000) pointed out that parental involvement includes direct behaviours such as volunteering in classrooms and helping in homework, which contribute positively to students' resilience.

Wyman, Cowen, Work, Hoyt-Myers, Magnus, and Fagan (1999) conducted a study which tested hypotheses from an organizational-developmental model for childhood resilience. In this model, resilience is conceptualized as a child's mastery of age-salient objectives in the face of adversity by drawing internal and external resources that enhance processes of adaptation specific to each developmental stage. 122 parents of 7-9 year old urban children exposed to multiple risk factors were interviewed and 69 children were classified as resilient and 53 as maladjusted. Two aspects viz., characteristics of a child's care giving system and early development differentiate the children with resilient and stress-affected adaptations. Children's resilient status was predicted by emotionally responsive parenting attitudes and positive parental mental health. Results indicated that competent parenting and caregiver psychosocial resources are the predictors of resilience.

In 1999, Read conducted an interview on fourth and fifth grade teachers about the concept of resilient and non-resilient students. The teachers opined that resilience framework was very useful in understanding why certain students might be successful or unsuccessful in schools. They also reported that many instructional strategies were effective for developing resilience in students.

Ramey and Ramey (1998) opined that income and socio economic status are the two dimensions of family resources which influence the child directly.

Wang, Haertel, and Walberg (1997) have identified several key competencies of resilient children including social and intellectual competence, ability to plan and set realistic goals and resourcefulness. These areas of competency are not predestined but can be learned from families, schools, and from communities. Educators can work with others to enhance conditions in families and communities that foster psychological well being.

In 1997, Waxman, Huang, and Padron made a comparison of the motivation and learning environment of resilient and non-resilient Latino middle school students belonging to the multiethnic, metropolitan city in the south central region of the United States. Result indicated that there was significant difference on the academic aspiration of two groups of students.

In 1997, Gonzalez and Padilla studied about the influencing factors of academic resilience and achievement of Mexican American high school students. Results revealed that resilient students possessed a treasure house of family and peer support, teacher feedback, positive ties to school, values placed on school and familism. All of these factors were lacking in non-resilient students. The only significant predictor of academic resilience was sense of belonging of students' to school.

A study conducted by Waxman, Huang, and Wang (1997) on resilient and non resilient elementary school students employed shadowing observation technique as a method of data collection. Narrative description of the physical environment of the classroom, teachers' instructional approaches, behaviour and attitudes towards students and student's observed attitudes, actions, mannerisms and interactions were included in the shadowing observations. Resilient students have higher academic self concept and aspirations, involvement, satisfaction, task orientation, organization, meeting the expectations of teachers than non-resilient students.

Katz and Mc Clellan (1997), Ladd and Pro Filet (1996) and Mc Clellan and Kinsly (1999) separately and contemporaneously conducted researches on elements of young children's social competence, and compared the behaviour of well-liked children with that of not well-liked. A checklist helpful for teachers and care-givers to check whether a child's social competence is developing well namely, the social Attribute check list was developed. It includes individual, social skills, peer relationship and adult relationship attributes.

Rak and Patterson (1996) conducted a longitudinal study in Hawaii and identified several personality, familial, and environmental variables that promote resiliency in youth at-risk. This study provided counselors with an assessment technique and strategies to promote a sautogenesis perspective.

Bandura (1997) analyzed the psychological influences through which efficacy beliefs affect academic achievement. He found that parent's sense of academic efficacy and aspirations for their children, children's belief in their efficacy to regulate their own learning and academic achievements, children's perceived self-efficacy and ability to manage peer pressure, and children's perceived self-regulatory efficacy were found to influence scholastic achievement.

U.S. Department of Education National Research Centres; the center for Education in the Inner Cities (CEIC); and the Center for Research on Education Diversity and Excellence (CREDE) have conducted studies on resilience in children. In connection with these research centers, Waxman, Huang, and Wang (1997) analyzed the differences between resilient and non-resilient elementary and middle school students belong to urban districts. Contemporaneously, Waxman and Huang (1996) examined and compared the motivation and classroom learning environment of resilient and non-resilient sixth, seventh and eighth grade inner-city middle school students of a major urban city in the south central region of the United States. Resilient students have higher perception of involvement, task orientation, rule clarity, satisfaction, pacing and feedback than non-resilient students. Resilient students also possessed higher social self concept, achievement motivation and academic self concept than non-resilient students.

Singh, Bickley, Trivette, Keith, Keith, and Anderson (1995) opined that parental involvement includes psychological dimensions like parent's expectations and aspirations for their children's achievement.

A study conducted by Storer, Cychosz, and Licklider (1995) examined the role of schools in promoting resilience in students. Schools can provide many

opportunities, establish good relationships, and develop many skills all of which foster resilience in children.

Mc Millan and Reed (1994) agreed that positive experiences in school provide students with a sense of belonging, bonding, and encouragement.

In 1993, Reyes and Jason conducted a study on successful high school students to examine the factors that are responsible for success and failure among Latino students from an inner-city high school. Criteria used to differentiate high and low risk students were their ninth-grade attendance rate and academic achievement. Based on four main areas viz., family background, family support, overall school satisfaction and gang pressures, students were interviewed individually by the researchers. Both the high risk and low risk students were similar with regard to socio economic status and parental supervision. But the low risk students were more satisfied with their schools.

In 1991, Alva studied about characteristics of a group of tenth grade Mexican American students. It was revealed that invulnerable students have received maximum educational support and scaffolding from their teachers and friends. She coined the term 'academic invulnerability' to describe students who 'sustain high levels of achievement, motivation and performance, despite the presence of stressful events and conditions that place them at-risk of doing poorly in school and ultimately dropping out of school.'

A research center named CRESPAR conducted many studies on educational resiliency. In association with CRESPAR, Lee, Winfield, and Wilson (1991) compared high achieving and low achieving eighth grade African-American students. High achieving students had good family background, belong to higher social class and their mothers were working. All these characteristics were lacking in low-achieving students. High achieving students had displayed good academic behaviors than low achieving students.

Geary (1988) conducted a study on Black inner city high school students and suggested that school success was facilitated by a teacher who was perceived as caring, available, understanding encouraging, respectful, listening and having a sense of humour.

Cause (1986) identified the role of peer support in fostering resilience. Peer group factors like peer group's attitude towards school is a significant predictor of grades, achievement test scores, value placed on being a good student and perceived competence.

Corno and Snow (1986), Feurstein (1980), and Means, Chelemer, and Knapp (1991) studied about role of teachers in fostering resilience. Use of mediated instructional techniques and expert scaffolding are effective in students with special needs or in at-risk students. Effective teachers play an important mediating function in minimizing risk and maximizing resources that can serve to enhance student development and promote resilience.

Lee, Winfield, and Wilson (1991), Masten (1994), and Wang, Haertel, and Walberg (1994) suggested that the effective schools model popularized by Edmonds (1979) focused on how schools affect resilience. Such schools promote academic success among traditionally low performing disadvantaged minority students by achieving a safe and orderly school environment in school which is closely linked to healthy social behaviour which is a characteristic of resilient children.

### **Studies on Intervention for Resilience**

Masten and Narayan (2012) conducted a review on the progress over a period from 2000 to 2010 in research on the effects of mass trauma experiences on children and youth with main focus on natural disasters, war, and terrorism. Conceptual advances were reviewed in terms of prevailing risk and resilience. Recent evidence on common components of models is evaluated, including dose effects, mediators and moderators, and the individual or contextual differences that

predict risk or resilience. New research possibility with profound implications for health and well-being were discussed, particularly in relation to plausible models for biological implant of extreme stress. This study noted shortage of evidence on effective interventions for child and youth victims. Practical and theory-informative research on strategies to protect children and youth victims and promote their resilience is a global priority.

Toland and Carrigan (2011) observed that despite a growing literature on resilience in mainstream psychology, there has been very little discussion of resilience within educational psychology or how it is related to practice. Authors try to bring resilience into the educational psychology literature and to show its potential to enhance service delivery. Study argued that no paradigm shift is necessary for educational psychologists to begin a resilience perspective in their work. There are separate advantages for both educational psychologists and their clients in accepting a resilience perspective.

Langenkamp (2010) investigated what might protect academically vulnerable students during the transition to high school by exploring the potential effects of social relationships and changing context on academic outcomes in high school. Transition to high school is a critical stage in students' academic course and can be especially difficult for middle school students who struggle academically. Starting high school on a low academic path and with low academic performance may lead to dropping out of high school. As students move from middle school to high school, their social relationships are transformed. Based on this, the results suggested that middle school social relationships are protective against low academic outcomes in the first year of high school, but not for low-achieving middle school students. In addition, a district context characterized by greater reconfiguration of peer social relationships is not associated with mathematics course placement but protects against course failure, especially among low-achieving middle school students. These results suggested implications for the districts to organize students and how school context transitions help to provide resilience in students.

Campa (2010) conducted a qualitative study which added new dimensions to the traditional paradigm of resilience through the lives of five Mexican American community college students. From this study, term critical resilience emerged as a result of using ideology from a feminist critical perspective. Data collection techniques included in-depth interviews, classroom observations, and focus groups. These techniques were used to learn how this group of students overcame many obstacles and achieved success at Camino Real Community College. The findings demonstrated that the participants' critical resilience was promoted by focusing on the cultivation of a larger purpose connected to the social uplift of their families and communities. Author described strategies situated within a socio-cultural context used by the participants to cultivate a larger purpose. The strategies of playing the game and showing respect throw light on the academic success of Mexican Americans who attended community colleges.

Sinay (2009) conducted a study on 5,788 Grade 6 students looking at their EQAO junior assessment from 2007-2008 and their primary assessment from Grade 3 in 2004-2005. Other data from the EQAO, the TDSB Parent Census, and the elementary report card was also used. The analysis identified how students performed on their sixth grade EQAO assessment (an average of reading, writing and mathematics raw scores combined) compared to their third grade EQAO composite score, and also looked at their family socio-economic status (SES). SES (family income) and previous achievement are strong predictors of future achievement. Students who performed better than expected in EQAO Grade 6 – considering low SES and low previous achievement in Grade 3 – were defined as “academically resilient”. Study looked at the relationship between several of these factors affecting achievement – both negative (risk factors) and positive (protective factors) – and the level of resiliency of students. For students at-risk because of low SES and low previous achievement, factors related to the interaction of family, school, peer and community influences predict resilience and academic achievement. Implications of the study are incorporating resilience skill-building

into school curriculum and teaching strategies, providing opportunities for students to experience academic resilience through developing learning skills in problem solving and use of information, completing homework, participating in class, and pursuing opportunities in arts, sports and recreational activities outside school, increasing awareness for parents, students, teachers and community about the academic resilience, and assessing student needs and determining the appropriate supports that have an impact on resilience and academic achievement.

Obradovic et al., (2009) conducted a longitudinal study of reading and math achievement in four primary school grade cohorts (GCs) of a large urban district to examine academic risk and resilience in homeless and highly mobile (H/HM) students. Initial achievement was assessed when student cohorts were in the second, third, fourth and fifth grades, and again 12 and 18 months later. Achievement trajectories of H/HM students were compared to low-income but non-mobile students and all other tested students in the district. Control variables in the study were four well-established covariates of achievement viz., sex, ethnicity, attendance, and English language skills. Both disadvantaged groups showed markedly lower initial achievement than their more advantaged peers. H/HM students manifested the greatest risk, consistently with an expected risk gradient. In some GCs, both disadvantaged groups showed slower growth than their relatively advantaged peers. Closer examination of H/HM students in relation to national test norms revealed remarkable variability, including cases of academic resilience as well as problems. H/HM students may represent a major component of achievement gap in urban districts, but these students also constitute a heterogeneous group of children likely to have markedly diverse educational needs. Study recommended that efforts to close gaps and enhance achievement in H/HM children require more differentiated knowledge of vulnerability and protective processes that may form individual development and achievement.

Lee (2009) conducted a study to determine the relationship between resilience and academic achievement of at-risk students in the Upward Bound

Programme in Georgia. The researcher used a quantitative method to collect data - the Healthy Kids Survey (Module B) instrument-to assesses the resilience of participants. Researcher collected data about the participants' families, schools, GPAs, and SAT/ACT scores. All of the participants chosen for this study were at-risk students due to their status as low-income and potential first - generation - to attend college, high school seniors in the Upward Bound Programme in both rural and urban communities in Georgia. There were 200 participants selected for this study and the final sample constituted 91. At-risk students in the Upward Bound Programme in Georgia were highly resilient and their resilience was positively related to their GPAs and the females in the study were more resilient than the males and had higher GPAs. Again, the urban participants were only slightly more resilient than their rural counterparts, and participants living with both parents were more resilient than students living with one parent.

Angela (2009) conducted a review on resilience education in Hong Kong schools. She defined concept of resilience from the view of Western literature and from the Chinese perspective. The author reviewed two most commonly used resilience-based programmes for current school children viz., Positive Adolescent Training through Holistic Social Programs and Healthy Promoting Schools and emphasized the need for promoting resilience in school children. Suggestions for teachers and school counsellors for enhancing resilience in school children and directions for educational researchers in refining current prevention and intervention programmes on mental health are highlighted.

Nickolite and Doll (2008) recognized that despite the wide spread acceptance of ecological models of child development, the tools and strategies underlying school psychological practice emphasized individual characteristics of children. Authors described Class Maps Consultation, a consultation strategy that helped to assess the availability of protective factors and risk in school classrooms and supported interventions to strengthen these protective factors so that more students in the classroom become successful. Three underpinnings of Class Maps

Consultation are described which include (a) conceptual framework, (b) a strategy for describing and measuring the ecological characteristics of classrooms, and (c) intervention strategies that target the classroom in view of individual students. A case example is provided to illustrate the use of Class Maps Consultation in two classrooms and implications for school psychological practice that promotes children's resilience and psychological wellness are highlighted.

Hsieh and Shek (2008) examined the responses of 291 Taiwanese adolescents living with single parents, based on the personal (gender and academic performance) and family (gender of parent living together and family type) correlates of resilience with reference to different psychosocial domains. Girls displayed higher resilience in some dimensions of personal and school resilience domains than boys, and boys experienced higher family resilience than girls. Effective coping, personal independence, global personal resilience, and parental expectation on academic performance were positively related to academic performance. Adolescents living with single mothers displayed higher personal independence and family resilience than the adolescents living with single fathers. Study compared the adolescents not living with any parent or those who lived with both parents after divorce. Adolescents living in nuclear and stem families displayed higher positive orientation to older people and experienced higher family resilience. Study proved that maternal resilience is better than paternal.

Worley (2007) examined the relationship between academic achievement and at-risk conditions of students. Author emphasized that many issues today affect the achievement gap and ability for at-risk students to succeed. Sample constituted twelfth grade students from two high schools in an urban school district. Study investigated correlations between the dependent variable - grade point average (GPA), and the independent variables, teacher-student relationships, parent or caregiver-student relationships, motivation, SES, and peer influence. Data indicated that teacher-student relationships, parent or caregiver student relationships, motivation, SES, and peer influence can affect success for at-risk students.

Poulou (2007) linked between social skills, problem solving, and resilience. It could be a helpful way forward to link the construct of social resilience to the social and emotional learning (SEL) framework. This study is on Greek teachers' perceptions of skills and attributes of socially and emotionally competent students as well as the role of school in the cultivation and promotion of these skills. Teachers emphasize on resilience as one of the key features of a competent child in conjunction with a number of social, emotional, and cognitive skills.

Oi-man, Hughes, and Luo (2007) conducted a study on measurement model of personality resilience and the contribution of personality resilience to lower achieving first grade students' academic achievement. Participants were 445 ethnically diverse children. An individual achievement test was administered on participants in the first year and one year later. Confirmatory factor analysis confirmed a second order latent construct of resilient personality defined by teacher rated conscientiousness, agreeableness, and ego resiliency that was distinct from measures of externalizing behaviours and IQ. Using latent structural equation modeling for baseline economic adversity, IQ, and externalizing symptoms, resilient personality predicted children's concurrent and future achievement.

Martin and Marsh (2006) examined the educational and psychological correlates of academic resilience using within network and between network validity approaches. Based on a sample of 402 Australian high school students, a newly developed uni-dimensional academic resilience construct found within network validity by way of sound item and factor properties. In terms of between network validity, correlation path analysis and cluster analysis showed that five factors predict academic resilience viz., self-efficacy, control, planning, low anxiety, and persistence. Hence, they proposed a 5 C- model of academic resilience: confidence (self-efficacy), co-ordination (planning), control, composure (low anxiety), and commitment (persistence).

Brooks (2006) identified that 70-80% young people raised in severe hardship develop social competence, personal coping skills, stability, and happiness by midlife. Once resilience is seen as a normative part of human development –a trait existing naturally to some degree in nearly all people - policies and programmes can focus on developing resilience as a skill in school as well as in classroom.

Gayles (2005) examined the theme of academic resilience in the descriptions of academic achievement by three African-American male students. Through ethnographically informed interviews conducted during their senior year, the coherent theme emerged that provide insight into these students' resilience. The students diminished the degree to which academic achievement separated from their peers, in addition to situating achievement in a utilitarian fashion. Ultimately, acting on the notion of academic achievement in this manner positively impacted their resilience.

Fergus and Zimmerman (2005) identified that adolescent resilience research differs from risk research by focusing on the assets and resources that enable some adolescents to overcome the negative effects of risk exposure and discussed three models of resilience viz., the compensatory, protective, and challenge models and described how resilience differs from related concepts. Authors described issues and limitations related to resilience and provided an overview of recent resilience research related to adolescent substance use, violent behaviour, and sexual risk behaviour and also discussed implications of resilience research for intervention and described some resilience-based interventions. The main goal of this work was to provide a common language and understanding to conduct research and interventions that focuses on assets and resources. Parental factors like support, monitoring, and communication skills are consistent and critical resources for youth. Youth who have self-confidence and social skills are also resilient regardless of risk or outcome. Resilience theory provided researchers and practitioners with a conceptual model that can help them understand how youth overcome adversity and

how can use that knowledge to enhance strengths and build the positive aspects of their lives.

In connection with Center for Research on Education, Diversity and Excellence (CREDE), Padron, Waxman, Powers, and Brown (2002) conducted an experimental study to improve the resiliency of low achieving English language Learners (ELLS). They developed and implemented a programme named the Pedagogy for Improving Resiliency Program (PIRP) in fourth, fifth and sixth grade classroom in an urban elementary school. Experimental students had higher reading achievement than control groups.

Masten (2001) recognized that study of resilience in child development has overturned many negative assumptions about children growing up in adverse conditions. An examination of findings from variable focused and person focused investigations suggested that resilience is common and usually arises from the normative functions of human adaptation systems with the greatest threats to human development being those that compromise these protective systems.

In 2000, McClendon Nettles, and Wigfield conducted a quasi-experimental study on effect of Promoting Achievement in School through Sport (PASS). Classroom in this programme was characterized by caring and support, high expectations, encouragement and involvement. Curriculum was self-paced, mastery - based and project-oriented. PASS students had significantly higher grades than non-PASS students.

Kumpfer (1999) identified resilience as an increasingly popular concept for research and application in the field of prevention. Information on low cost methods for increasing resilience to negative life events is critically needed because of reduced funding for services to help at-risk children and families. Author emphasized need for the better understanding of ways to increase resilience in all children for improving the effectiveness of preventive community, school, and family services.

Sagor (1996) identified resilience as a set of attributes providing people with strengths and fortitude to confront overwhelming obstacles. The best way to prepare resilient youth for an uncertain future is to help them develop feeling of competence, belongingness, usefulness, potency, and optimism via authentic, ongoing experiences and critical examination of outcomes.

Pisapia and Wesfall (1994) reviewed the research conducted by the Metropolitan Educational Research Consortium leading to the development of a resiliency model that helps explain why some at-risk students actually do well in the school. The recent investigations have determined that some students develop traits that enable them to be successful in schools. The model suggested that four environmental factors come together to form a psychological support system to reinforce the personal traits that lead to resilience. This support system is composed of significant relationship with adults, positive use of time, motivation through encouragement and high expectations, and acknowledgment through recognition and accomplishment. This support system enhances development of personal traits such as self-efficacy, goal orientation, personal responsibility, optimism, internal expectations and coping ability. This resiliency model can be operationalized in schools. There is no quick and easy answer to solve the problems of at-risk students, but putting the factors of the resiliency model into place is effective.

Randolph, Eth, Glynn, Paz, Leong, Shaner, Strachan, Van Vort, Escobar, and Liberman (1994) conducted a study on the relationship between academic resilience and athletic involvement for African American males, particularly those at-risk, in the middle grades. Three broad dimensions of academic resilience examined in this study were educational aspirations, investments in pro-academic behaviours, and social status among their school peers. Data provided some supporting evidence of the association between athletic participation and academic resilience for both interscholastic and intramural sports activities among African-American male and female athletes.

In 1984, Garmezy, Masten, and Tellegen undertook a longer than 10 year longitudinal study to examine what is the role of resiliency in children who are experiencing stressful events. Results revealed that less competent children are disadvantaged in many aspects like lower IQ, low socio-economic status and negative family qualities. These children are more susceptible to disruption. But in the same situation, some children displayed competence. This made the researchers to study more about the successful adaptation of some children.

### **Conclusion**

This chapter presented reviewed studies in the field of resilience from 1979 to 2012. General trend about the sample, population, risk, protective factors, design of the study, indicator of resilience, analysis employed, and findings of the reviewed studies are summarized to draw conclusions.

Sample studied has become diverse through years; it varies from preschools to college students. But the most frequent sample is high school going adolescents, with some social or familial disadvantage like minority status, poverty, and domestic discord. Most of the studies were from United States, especially on African-American, and Latin American populations, with a few studies from other countries like Australia, Taiwan and Turkey.

The reviewed studies considered an array of characteristics within the individual or conditions in family, school or community as risk. The individual risks, academic and behavioural, included low previous achievement, academic stress, low attendance and dropping out of school, school failure, and school misconduct/delinquency. Peer pressure leading to conformity and poor attitudes towards their academics were also considered risk. The other individual risks studied were negative life events and chronic strains, borderline intellectual functioning, lower IQ attempted suicide, violence, substance use, use of alcohol, tobacco and other drugs, abuse and sexual risk behaviour. Less competent children are disadvantaged in many aspects like lower IQ, low socio-economic status and

negative family qualities. These children are more susceptible to disruption (Garmezy, Masten, & Tellegen, 1984). The social and familial features of the populations studied for risk were low-income rural communities, community violence, poverty and other aspect of family resources, negative family qualities like low-income, low SES, homeless and highly mobile and living with single parents. Income and socio economic status are the two dimensions which influence the child directly (Ramey & Ramey, 1998). Girls displayed higher resilience in some dimensions of personal and school resilience domains than boys, and boys experienced higher family resilience than girls (Hsieh and Shek, 2008). A few studies have considered stressful events and conditions like natural disasters, war, and terrorism as well.

Design of the resilience research continues to be survey with more than half the studies reviewed belonging to this category with techniques including interview, shadow observation, teacher observation and rating and self-reporting. Another major category of research in this area is longitudinal design. A few studies could be labeled as argumentative, correlation design, evaluative, reviews and meta-analysis, multiple case study, and qualitative interviews. Only very few studies attempted experimental and quasi-experimental design. Statistical analyses employed include regression analysis, structural equation modeling, and variable focused and person focused analyses. The other techniques are cluster analysis, path analysis, and dominance analysis.

Review of related studies identified number of protective factors and a detailed account of the major categories of the protective factors viz., within-child, within-family, within-school, and within-community and sub divisions of each major category were presented in tables 3, 4, 5, 6, 7, and 8. Among within-child category the most studied protective factors are self-efficacy, autonomy, social competence, personal traits, internal locus of control, motivation, and self-concept. Among within-family category the most studied protective factors are parental support, family support, parental expectations, parental involvement, and family

background. The most studied within-school protective factors include teacher caring, peer support, and school support. The studies on community protective factors did not reveal marked preference of any protective factor.

At least 20 of the reviewed studies used academic achievement as the indication of resilience. The next most used indicator is resilience as such. Others used motivational factors as indicators of resilience viz., academic self concept and aspirations, involvement, satisfaction, task orientation, organization, meeting the expectations of teachers, motivation, and academic aspiration. The other indicators of resilience include child's mastery of age-salient objectives, enhanced potential and self-esteem, peer play competence, adaptive preschool social functioning, physical, psychological, social, and environmental quality of life, social competence, student diversity, successful negotiation of problems and dealing with pre-existing risk factors. Teacher reports of adjustment in terms of aggression, academic competence, popularity among peers, behavioural and psychological engagement were also considered as indicators of resilience.

Resilience is an increasingly popular concept for research and application in the field of prevention (Kumpfer, 1999) and no paradigm shift is necessary for educational psychologists to begin a resilience perspective in their work (Toland & Carrigan, 2011). Resilience theory provided researchers and practitioners with a conceptual model that can help them understand how youth overcome adversity and how can one use that knowledge to enhance strengths and build positive aspects of their lives (Fergus & Zimmerman, 2005). Julia, John, and Cicchetti (2002) emphasized the profile approach in the identification of children who fail to flourish within an early intervention programme. Many researchers emphasized the need for interventions (Nettles, Mucherach, & Jones, 2000; Fergus & Zimmerman, 2005) and suggestions for teachers and school counsellors to refine the current prevention and intervention programmes (Angela, 2009) to promote resilience. Best way to prepare resilient youth for an uncertain future is to help them develop feeling of competence, belongingness, usefulness, potency, and optimism via authentic, ongoing

experiences and critical examination of outcomes (Sagor, 1996). Information on low cost methods for increasing resilience to negative life events is critically needed because of reduced funding for services to help at-risk children and families (Kumpfer, 1999).

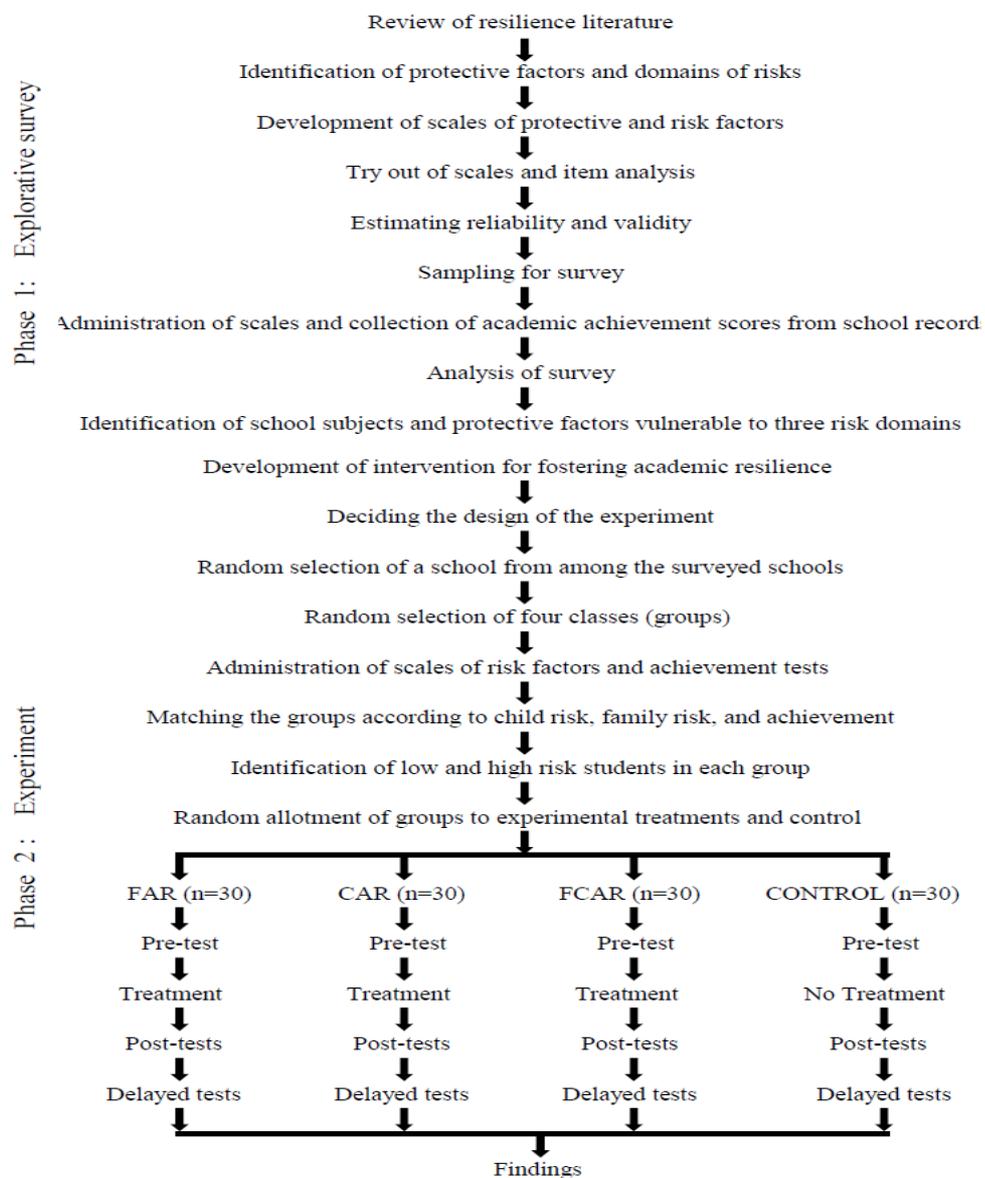
Literature on risk and resilience, school engagement and positive psychology offer school psychologists a new perspective to consider students' progress through school (Morrison et al., 2006) and provides a rationale for incorporating resilience building efforts in schools and explores ways in which school environment could be structured to strengthen resilience in children and youth (Brooks, 2006). Findings of the reviewed studies indicate how to organize school to promote academic resilience, designs of the interventions and policies to strengthen resilience, and the importance of protective factors in fostering resilience. Achieving a safe and orderly school environment in school is closely linked to healthy social behavior required for resilience in children (Edmonds, 1979). Effective teachers can minimize risk and maximize resources enhancing student development and resilience (Corno & Snow, 1986). Inspirational teaching and caring education can play a significant role in students' success. Moreover, educators can work with others to enhance conditions in families and communities to foster psychological well being (Wang, Haertel, & Walberg, 1997).

Age of students and stage of schooling are also to be considered. Resilience framework was very useful in understanding why certain students might be successful or unsuccessful in schools (Read, 1999). Transition to high school is a critical stage in students' academic course and can be especially difficult for middle school students who struggle academically and starting high school on a low academic path and with low academic performance may lead to dropping out of high school (Langenkamp, 2010). Academic stress is negatively related to social support and resilience (Wilks, 2008). But low risk students are more satisfied with their schools (Reyes and Jason, 1993).

Researchers have failed to demonstrate consistency on the role of peers in resilience. Many resilience researchers studied about friend support in academic resilience and resilient adolescents have ambivalent feelings and beliefs about friends and romantic relationships for their academic success Newman et al., 2000) and it was found to be negatively related to resilience Newman et al., 2000; Deborah, Mary, and Adaline, 2002).

Reviewed literature demonstrates that academic resilience and its inculcation in students in impoverished contexts is still evolving, and hence, requires more attention. Educators need to show humility, to ask students about differences and to demonstrate flexibility in the educational environment in order to make school more comfortable (Ungar, 2007) and effective instructional practices build academic resilience skills (Shaw, 2008). There is no quick and easy answer to solve the problems of at-risk students, but putting the factors of resiliency model into place is effective (Pisapia & Wesfall, 1994). There is little discussion on resilience within educational psychology or how it is related to practice (Toland & Carrigan, 2011). Kumpfer (1999) emphasized the need for better understanding of ways to increase resilience in all children for improving the effectiveness of preventive community, school, and family services and emphasized the need for promoting resilience in school children (Angela, 2009). Sinay (2009) highlighted the need for increasing the awareness of parents, students, teachers and the community about academic resilience. According to Masten and Narayan (2012) there is a notable shortage of evidence on effective interventions for child and youth victims. Practical and theory-informative research on strategies to protect children and youth victims and promote their resilience is a global priority.

This chapter describes design of the study, variables, samples selected for the study, tools used, module for intervention, and the statistical analyses employed to analyze data. The present study was completed in two phases. For obtaining a summary view of the methodology at a glance, the outline of the total procedure is given in Figure1.



**Figure 1.** Outline of Procedure of Study

Phase 1 of the study is for exploring the protective factors in academically at-risk secondary school students, and finding the relation between risk factors and academic achievement through a survey. Phase 2 is for testing the effectiveness of an intervention for inculcating academic resilience via fostering the protective factors using a quasi-experimental design. Hence, the methodology of this study is described in detail in two phases.

### **Phase 1: Explorative Survey of the Protective Factors and Academic Achievement in At-Risk Students**

The survey was designed to find out answers to two questions; 1) which among the select protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, Peer Support, Family Resources, Family Psychological Nurturance, Family Environment, Authoritative Parenting, Curriculum Adaptation to Student Diversity, and Caring Teachers does significantly differ among the three levels (low, average, and high) of risks sourced from within-child, family, and school in secondary school students?, and 2) which school subjects viz., Mathematics, Basic Science, Social Science, and Information Technology demonstrate significant difference in achievement based on levels of risk sourced from within-child, family, and school in secondary school students?

Explorative survey helped to find out the distribution of protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, Peer Support (within-child protective factors), Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting (family protective factors), Curriculum Adaptation to Student Diversity, and Caring Teachers (school protective factors); and distribution of risk factors viz., child-risk, family-risk, and school-risk and their relations with the academic achievement in select subjects like Mathematics, Basic Science, Social Science, and Information Technology. It also helped to design the intervention to foster academic resilience in at-risk secondary school students.

A detailed review of related literature was conducted as presented in chapter 2. Resilience literature provided a robust theoretical basis for present study. This step helped the investigator to settle on the final list of protective factors and risk factors. These include three major categories of protective factors and three domains of risk. From the identified protective factors, six within-child, four family, and two school protective factors were selected by analyzing their individual importance in developing resilience in the life of an at-risk child. Three areas of risk domains viz., child, family, and school were selected because these are closely related (proximal) to the at-risk nature of the child in present study. These protective and risk factors constitute the variables in survey phase.

### **Variables in the Survey Phase**

Survey phase of study explored the influence of student attributes viz., risk conditions, on criterion variables viz., protective factors and achievement. The survey phase, thus, utilized three attribute variables. They are:

- i. Child-Risk
- ii. Family-Risk, and
- iii. School-Risk

The sixteen criterion variables in the survey phase of study include twelve protective factors and achievement in four school subjects. The twelve protective factors considered as criterion variables in this study are:

- i. Social Competence
- ii. Problem Solving Skill
- iii. Critical Consciousness
- iv. Autonomy
- v. Sense of Purpose
- vi. Peer Support
- vii. Family Resources

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- viii. Family Psychological Nurturance
- ix. Family Environment
  - x. Authoritative Parenting
- xi. Curriculum Adaptation to Student Diversity, and
- xii. Caring Teachers

Further, Academic achievement in subjects viz.,

- i. Mathematics
- ii. Basic Science
- iii. Social Science, and
- iv. Information Technology are also considered as criterion variables.

### **Design of Study in Phase1**

First phase of the study used a survey method. Survey was conducted among 10 rural secondary schools of Malappuram district. Risk factors and protective factors were quantified, and school achievement test scores were also collected. The students were grouped into low, average and high on three domains of risk viz., child-risk, family-risk and school-risk, using one standard deviation distance above and below mean as the cut off points. The groups were compared on protective factors and academic achievement.

### **Tools Used in the Study**

Based on the identified protective and risk factors, tools were constructed to collect data. The tools developed and used for the study are 1) Scales of Risk Factors 2) Scales of Within- Child Protective Factors, 3) Scales of Family Protective Factors, 4) Scales of School Protective Factors and 5) Battery of Teacher- Made Tests of Achievement. They are explained in the following section.

## 1. Scale of Risk Factors

This scale is a concurrent scale of three risk factors and assess the risks faced by secondary school students from three risk domains viz., child, family, and school, to provide three independent measures of risks.

### Planning

During planning nature of risk, its measurement, indicators, and scoring procedures were reviewed. Risk factor is identified as a measurable characteristic in a group of individuals or their situation that predicts negative school outcome. Risk factors in three dimensions viz., within-child, family, and school causing academic risk are included in the scales of risk factors. Risk factors spread over within-child category include emotional distress, behavioural disorders and cognitive deficits (Werner and Smith, 1989; Capaldi & Patterson, 1994), feeling sick, being bored (Ryan et al., 1998), drug addiction, psychological problems of children related with their health and gender (Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987; Brooks-Gunn, 1994).

Risk factors sourced from family include not having enough money to spent, and pressure to get good grades (Ryan et al., 1998), low socio-economic status, marital discord, single parent family status, psychological history of the family, lack of social support, poverty, education, and well-being (Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987; Brooks-Gunn, 1994), poverty (Garmezy, 1983; Natriello, Mc Dil, & Pallas, 1990), children of alcoholic parents (Benard, 1991), divorce, loss of a parent, birth of a sibling, war, and child abuse (Garmezy, 1983), family structure (Costello, 1989), homelessness, and parental divorce (Boykin, 1986; Taylor, 1991; Gordon & Yowell, 1994; Delpit, 1995).

Risk factors sourced from school which cause academic at-risk covered the aspects like daily experiences of discriminatory behaviour from individuals and institutions, political, occupational, and residential restrictions (Taylor, 1991),

schools failing to provide a supportive climate by institutionalizing low academic expectations, inadequate serving of educational resources, discontinuity between the pattern and values of low income and mainstream families and communities and those expected in the mainstream classroom and school contexts, and natural disasters (Boykin,1986; Taylor,1991; Gordon & Yowell,1994; Delpit,1995), and feeling left out of the group (Ryan, Cowen, Wyman, Work, & Keith, 1998).

Adequate consideration was given to the above areas while constructing the statements. These risk exposing conditions revealed that individual, familial, and school characteristics and interaction between these may contribute to the academic at-risk condition of the students. Sometimes all of these risk factors result in similar problems (Masten & Wright, 1998), so a shift was happened from studying single risk factor to cumulative risk. Cumulative risk is the total of multiple risk factors. While developing the tool, it was postulated that if a child is experiencing increased number of demographic and psychological risk factors, there will be an increased chance for developing adjustment problems in that child (Rutter, 1979). All risk factors do not possess equivalent meaning and also present different levels of experience. In such situations, multiple risk studies consider numerous risk factors together and the accumulation of risk affects negatively to children's developmental outcomes (Sampson & Laub, 1994).

### **Item writing**

Statements under each scale were constructed with the help of reviewed theory on resilience.

#### **Scale of child-risk**

Scale of child-risk in draft form comprised of 16 statements. The scale measures difficulties in academics due to the problems and deficits of students themselves. The statements are particularly related with health problems of students, problems related with the academic abilities, extent of fear about their future life,

and lack of belief of students about their abilities. So the statements can be included under the following aspects like physical, cognitive, metacognitive, personal, socio-affective and academic difficulties of the student. All the statements are positive in nature.

Example:

- Inability to formulate clear goals leads me to new problems (statement 6).
- I fear that the future life will be miserable (statement 8).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix A1 and A4 respectively.

### **Scale of family-risk**

The scale of family-risk in draft form contained 19 statements. Statements in the scale measure the problems faced by students in their personal and academic life in connection with adverse conditions in their home including the problems related with parents' attitude towards them, specially the ineffective parenting, parental discord, diseases of parents, ill healthy home atmosphere, and, negative behaviours of parents which expose students to adversities. So the measures can be categorized under parental involvement, parental care and affection, facilities provided by parents, poverty, and home environmental aspects. All statements are positive in nature.

Example:

- Diseases of my parents mentally weaken me (statement 4).
- I feel that I am not getting adequate love from my parents (statement 5).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix A2 and A5 respectively.

### **Scale of school-risk**

Scale of school risk in draft form included 17 statements which measure the difficulties experienced by students in school. The scale especially measures behaviour of teachers and school atmosphere which mentally depress the students. The statements can be categorized as teacher behaviour, bullying nature of students, school environmental aspects, impact of low grades in the examination, and mode of conveyance of students to school. Scale includes 16 positive statements and a single negative statement (statement 5).

Example:

- My classmates tease me for lack of luxury things at my home (Statement 8).
- I am isolated in public places and school due to some diseases of my relatives (Statement 17).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix A3 and A6 respectively.

### **Scoring**

All the statements are five-point Likert type. The five responses are absolutely true, true, don't know, false, and absolutely false. The scoring ranges from 5 to 1 (absolutely true-5, true-4, don't know- 3, false-2, and absolutely false-1 for positive items and absolutely true-1, true-2, don't know-3, false-4, and absolutely false- 5 for negative items). The item scores in each scale were added to get the total score on risk sourced from within-child, family and school. A copy of the response sheet of the Scale of Risk Factors is provided as Appendix A7.

### **Item analysis**

Conventional item analysis procedure was applied, separately for the scales on three risk domains. 370 students selected with due representation to locality of schools, and type of management of schools were used as try out sample. Responses

from the try out sample were scored, arranged in the ascending order of total score on the risk dimension, and discriminating power in terms of t-value were calculated. Statements having t-values  $\geq 2.58$  were selected, as follows.

<u>Scale</u>	<u>Number of Statements Selected after Try Out</u>		
	<u>+ve</u>	<u>-ve</u>	<u>Total</u>
Scale of Child-Risk	15	0	15
Scale of Family-Risk	16	0	16
Scale of School-Risk	16	0	16

Details of statements selected, and discrimination power of items in the three scales on child, family, and school risks are given in Appendix A8.

### **Reliability**

Estimated Test –retest reliability (n=56) and index of internal consistency ( $\alpha$ ) (n=478) of the three risk-scales are as follows.

<u>Name of Scale</u>	<u>Reliability Coefficient</u>	
	<u>Test-Retest</u>	<u>Cronbach <math>\alpha</math></u>
Scale of Child-risk	0.80	0.87
Scale of Family-risk	0.85	0.89
Scale of School-risk	0.81	0.89

### **Validity**

Items in the three risk scales were carefully chosen to reflect the different aspects of risk proposed by an array of researches in the field; and hence theoretically the scales of risk are considered valid. Scale of child-risk was constructed by putting together the elements identified and proposed by researchers like Sameroff, Seifer, Barocas, Zax, and Greenspan (1987), Ryan et al., (1998), Werner and Smith (1989), Capaldi and Patterson (1994), and Brooks Gunn (1994). Scale of family-risk was constructed by putting together the elements identified and proposed by researchers like Garnezy (1983), Boykin (1986), Sameroff, Seifer, Barocas, Zax, and Greenspan (1987), Ryan et al., (1998), Costello (1989), Natriello, Mc Dill, and Pallas (1990), Benard (1991), Taylor (1991), Brooks Gunn (1994);

Gordon and Yowell (1994), and Delpit (1995). Scale of school-risk was constructed by putting together the elements identified and proposed by researchers in the field of school-risk like Boykin (1986), Ryan et al., (1998), Taylor (1991), Gordon and Yowell (1994), and Delpit (1995).

Further, empirical proof for validity of three scales of risk was obtained through Confirmatory factor analysis which demonstrated that statements in the three scales have high factor loading on the select risk domain. The result of Confirmatory factor analyses is given in Appendix A9. Copies of the final versions of the scale of child-risk, scale of family-risk, and scale of school-risk are provided as Appendices A10, A11, and A12 respectively.

## **2. Scale of Within- Child Protective Factors**

This scale is a concurrent scale of six within-child protective factors in secondary school students viz., social competence, problem solving skill, critical consciousness, autonomy, sense of purpose, and peer support to provide six independent measures.

### **Planning**

The selected protective factors are closely related to the life skills needed by a person. Social competence is a personal, social, and life skill. In the field of resilience, many researchers studied about different aspects of social competence which include social, emotional, cognitive skills and behaviours that children need for successful social adaptation. These include social skills, social awareness, self-confidence, capacity to inhibit egocentric, impulsive, or negative social behaviour, ability to understand others' emotions, social effectiveness, ability to take another person's perspective and develop an understanding of the social rules and conventions of their culture, cooperation and negotiation, diplomatic strategies, such as commenting upon the ongoing activity and asking permission to join in and good standards of equity and good sportsmanship (Welsh & Bierman, 2002). It involves

other socio-emotional competencies like better mental health, stronger relationships, more success in school and work, playing, talking, working out disagreements, and collaborating with peers and adults (Ladd, 1999); usually in a positive mood, expressing interest in others, capacity to empathize, humour, and does not seem to be acutely lonely (Ladd & Profilet, 1996; Katz & McClellan, 1997; McClellan & Kinsey, 1999), self control, trust, respect for other people, or civic engagement (Schoon, 2009), tolerance, conscientiousness, and ability for cooperation (Sarason, 1990), and responsiveness (ability to elicit positive responses from others), flexibility (ability to move between different cultures), and communication skills (Berliner, & Benard, 1995).

Problem solving skill includes steps viz., problem orientation, problem definitions, generation of alternative solutions, decision making, solution implementation and verification (MIRECC, Mental Illness Research, Education and Clinical Centers). The processes of problem solving include searching for information, structuring and integrating it into mental representations of the problem, reasoning, planning actions and other solution steps, executing and evaluating solution steps, and continuous processing of external information and feedback (Reaff, Zabal & Blech, 2006). Parker et al., (1990), Nelson-Le Gall and Jones (1991), Wilson-Sadberry, Winfield, and Royster (1991), Gonzalez, Cauce, Friedman and Mason (1996), Grotberg (1996), and Grantham (2004) studied about the problem solving skill as a protective factor.

The idea of critical consciousness consider life situations of learner as the starting point of education and its goals are raising consciousness and overcoming of obstacles (Friere, 1970). Critical consciousness emphasized accomplishing a thorough understanding of the world, allowing the perceptions and exposure of perceived social and political contradictions and taking actions against the oppressive elements in one's life that are illuminated by that understanding. Garmezy (1991) and Benard (1995) studied critical consciousness as a protective factor.

Autonomy rests on a concern of general education which helps the students to become more independent in their work, learning and behaviour (Boud, 1988; Hammond & Collins, 1991). It is studied by various researchers. Autonomy is the ability to act independently and exert some control over one's environment, having a sense of one's own identity, and to be detached from others engaged in risk or dysfunctional behaviours (Berliner & Benard, 1995). Autonomy involves development of a sense of identity (Benard, 1995), the degree of access to and control over material and social resources within the family, in the community and in the society at large (Dixon-Mueller, 1978), the ability to influence and control one's personal environment (Safilios-Rothschild, 1982), and the capacity to obtain information and make decisions about one's private concerns and those of one's intimates (Dyson & Moore, 1983). Nelson Le Gall and Jones (1991), Berliner and Benard (1995) and Grotberg (1996) had studied autonomy as a within-child protective factor.

Sense of purpose is related with leading a goal oriented and purposeful life. Many researchers studied about different aspects of sense of purpose which include sense of purpose (Berliner & Benard, 1995), ability to foresee a bright future for oneself, optimism, and aspiration towards educational and personal achievement (Berliner & Benard, 1995), goal direction, educational aspirations, persistence, hopefulness, optimism, and spiritual connectedness (Benard, 1995), goal direction and pursuit of goals (Klinger, 1998), principle-oriented and goal-directed activity, and achieving comfort (Kerr & Brown, 1988), pursuit of intrinsic goals and emotional and physical health (Brunstein, Schultheiss, & Graessman, 1998; Sheldon & Kasser, 1998), and achievement motivation (Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997).

Studies on different dimensions of peer support include students' engagement in variety games and plays that offer them a number of opportunities to perform different roles, an understanding of social norms and conventions of their culture, co-operation and negotiation, attempt on different social roles when they

interact with peers, reciprocity and intimacy (Welsh & Bierman, 2002). Presence of peer support is reflected in caring towards students facing life circumstances, positive attitude of peers toward educational activities, engagement of peers in pro-social constructive behaviours that foster good health, academic achievement, responsible citizenship, co-operative learning programmes, use of small learning groups and extra-curricular activities (Horn & Chen, 1998; Nettles, Mucherach, & Jones, 2000), overall cooperation, communication, social participation and validating or supporting others (Oden & Asher, 1977; Coie, Dodge & Kupersmidt, 1990). Felner et al., (1985), Alva (1991), Gonzalez and Padilla (1997), Wang, Haertel, and Walberg, (1997), Deborah, Mary, and Adaline (2002); Powers et al., (2005) studied peer support as a protective factor.

### **Item writing**

Items under each scale were constructed by analyzing the components of each protective factor, and based on the theory of resilience.

#### **Scale of social competence**

This scale consisted of 21 statements in draft form based on how competent the students are in eliciting positive responses from others including friends, parents and teachers, in carrying out their work systematically, in empathizing with others, in moving between different cultures and in communicating effectively with others. These abilities will help students to win over the adversities in both academic and day to day life. This scale includes 19 positive statements and 2 negative statements (statement 12 and 16 only).

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Example:

- Skill to maximally manifest my special abilities in academics (statement 9).
- Ability to speak out clearly to others about the things in my mind (statement 19).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix B1 and B7 respectively.

### **Scale of problem solving skill**

Scale of problem solving skill includes 17 statements in draft form which measures students' ability to plan, resourcefulness in seeking help from others, critical thinking, creative thinking, and reflective thinking in dealing with academic problems. Scale contains 16 positive statements and one negative statement (statement 16 only).

Example:

- The competency to think about my academic problems (statement 1).
- The capacity to make use of novel ways to solve the problems (statement 13).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix B2 and B8 respectively.

### **Scale of critical consciousness**

Scale of critical consciousness consists of 12 statements in draft form which measure students' critical awareness of structures of oppression, and capacity to create strategies to overcome them. All the 12 statements are positive.

Example:

- Awareness of the communicable diseases at my surroundings (statement 6).

- I sense the impact of revealing personal information to strangers (statement 11).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix B3 and B9 respectively.

### **Scale of autonomy**

The scale of autonomy includes 20 statements in draft form which measures how self-dependent the students are in carrying out their duties, how much students try to achieve success in academic life, how able students are to modify those around and their surroundings, and, how much the students attribute their success to luck factor. These abilities come under students' sense of task mastery, internal locus of control, and self-efficacy. Scale is constituted by 13 positive (statement number 1, 2, 3, 4, 5, 6, 8, 10, 11, 12, 13, 18, and 19) and 7 negative (statements 7, 9, 14, 15, 16, 17, and 20) statements.

Example:

- Confidence to clearly understand the content by rightly involving in the learning activities (statement 2).
- Lack of confidence to perform in the examination in spite of comprehending the topics (statement 15).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix B4 and B10 respectively.

### **Scale of sense of purpose**

This scale includes 22 statements in draft form based on sense of purpose. The scale measures how conscious the students are about formulating goals related with their academic life, how much the students aspire to achieve through education, how persistent the students are in their works to achieve success, how positive is the

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students' beliefs and faith in God to win over difficulties. Scale is constituted by 21 positive statements and one negative statement (statement 19 only).

Example:

- Purpose of being good student for my teachers by my abilities in academic and non-academic attainments (statement 6).
- Feel that content difficulty will affect my studies negatively (statement 19).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix B5 and B11 respectively.

### **Scale of peer support**

The scale of peer support contains 20 statements in draft form based on the sub-components under peer support. Specifically the scale measures positive mentality of the students to help their friends, how sincere the student's efforts with education is, how clear students' conception of their role as citizen is, and the extent of students' participation in extra-curricular activities. All the statements except statement number 4 are positive in nature.

Example:

- Habit of blaming and quarrelling with my peers for silly matters. (statement 4).
- I take effort to increase the standard of both academic and non-academic subjects (statement 19).

Copies of the Malayalam and English versions of the draft scale are provided as Appendix B6 and B12 respectively.

### **Scoring**

All the six scales in the concurrent scale of within-child protective factors are five point Likert type with five graded responses, viz; 'have very much', 'have more

or less', 'have less', 'have very less', and 'not at all'. The value ranges from 5 to 1 (have very much -5, have more or less -4, have less - 3, have very less -2, and do not have - 1 for positive statements). Scoring is reversed for negative statements.

### Item analysis

Conventional likert procedure was applied, separately for each scale under the concurrent scale of within-child protective factors. 370 students selected with due representation to locality of the schools, and type of management of schools were used as try out sample. Response from the try out sample were scored, arranged in ascending order of total score on the protective factor, and discriminating power in terms of t-value was calculated. Statements having t-values  $\geq 2.58$  were selected, as follows.

Scale	Number of Statements Selected after Try Out		
	+ve	-ve	Total
Scale of Social Competence	18	0	18
Scale of Problem Solving Skill	16	0	16
Scale of Critical Consciousness	12	0	12
Scale of Autonomy	10	0	10
Scale of Sense of Purpose	20	0	20
Scale of Peer Support	18	1	19

Details of items selected, and discrimination power of statements in the six component scales are given in Appendix B13.

### Reliability

Estimated Test –retest reliability (n=57) and index of internal consistency ( $\alpha$ ) (n=478) of the scales of six within-child protective factors are as follows.

Name of Scale	Reliability coefficient	
	Test-Retest	Cronbach $\alpha$
Scale of Social Competence	0.86	0.84
Scale of Problem Solving Skill	0.72	0.88
Scale of Critical Consciousness	0.90	0.83
Scale of Autonomy	0.71	0.82
Scale of Sense Of Purpose	0.77	0.90
Scale of Peer Support	0.95	0.87

### **Validity**

The six scales of within-child protective factors were constructed by including statements on protective areas identified by previous researchers in relation to Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose and Peer Support. Hence, theoretically, the six scales of within-child protective factors are considered valid. Specifically, the scale of Social Competence bases on Sarason (1990), Berliner and Benard (1995), Ladd and Profilet (1996), Katz and McClellan (1997), McClellan and Kinsey (1999), and Schoon (2009). Research conducted by Parker et al., (1990), Nelson-Le Gall and Jones (1991), Wilson-Sadberry, Winfield, and Royster (1991), Gonzalez, Cauce, Friedman and Mason (1996), Grotberg (1996), Grantham (2004), and Reaff, Zabal and Blech (2006) provided theoretical basis for Problem Solving Skill. Likewise Garmezy (1991), and Benard (1995) supported the item construction on Critical Consciousness. Dixon-Mueller (1978), Safilios-Rothschild (1982), Dyson and Moore (1983), Boud (1988), Hammond and Collins (1991), Le Gall and Jones (1991), Berliner and Benard(1995), Benard (1995), and Grotberg (1996) provided the component behaviours of Autonomy. Researches by Harackiewicz, Barron, Carter, Lehto, and Elliot (1997), Berliner and Benard (1995), Klinger (1998), Kerr and Bowen (1988), Kerr and Bowen (1988), Brunstein, Schultheiss, and Graessman (1998), Sheldon and Kasser (1998), are the base for Sense of Purpose. Felner et al (1985), Coie, Dodge and Kupersmidt (1990), Alva (1991), Oden and Asher (1977), Gonzalez and Padilla (1997), Wang, Haertel, and Walberg, (1997), Horn and Chen (1998), Nettles, Mucherach, and Jones (2000), Deborah, Mary, and Adaline (2002), Welsh and Bierman (2002), and Powers et al., (2005) provided the backing for items in scale of Peer Support.

Further, empirical proof for validity of the six scales of within-child protective factors is obtained through confirmatory factor analyses which demonstrated that statements in the scales have high factor loading on the select within-child protective factor. The result of Confirmatory factor analysis is given in

Appendix B14. Copies of final versions of the six concurrent scales of within-child protective factors are provided as Appendix B15 to B20.

### **3. Scale of Family Protective Factors**

This scale is a concurrent scale of four family protective factors to assess the mobilization of four family protective factors by the parents viz., family resources, family psychological nurturance, family environment, and authoritative parenting. The scales provide independent measures of four family protective factors.

#### **Planning**

According to Morris and Winter (1994) mobilization of family resources includes parental planning in using human and material resources available to the family to satisfy needs. Generally family resources include facilities provided by parents to children related to food, safety needs, study equipment, availability of both print and visual media, and parents' concern in healthy habits. Family resources like provision of food, shelter and basic need, connections to other resources, transportation, physical growth, information, learning opportunities and behaviour models (Masten, et al., 1990) are vital to the development of child.

Family psychological nurturance depicts that parents should nurture the self-esteem and self-efficacy of students and should motivate them. Parents must have positive academic, moral and social expectations about their children. Parents should involve in the programmes and courses for children to advance the skills. The statements in this scale gained support from self-esteem, self-efficacy, mastery motivation, academic, moral and social expectations (Masten et al.,1990), involvement in programmes and courses that advance skills (Taylor,1991; Waxman & Huang,1996; Read, 1999), volunteering in classrooms and helping with homework (Fantuzzo, Tighe, & Childs, 2000), parents' expectations and aspirations for their children's achievement (Singh et al., 1995), parental expectations and parent-child communication about school (Keith et al., 1993; Fan & Chen, 2001),

and monitoring and structuring child's time, engaging children in learning stimulating activities, discussing school and education, and holding educational expectations (Epstein et al., 2002; Fantuzzo, Tighe, & Childs, 2000).

Family environment describes the nature of atmosphere in home that is conducive to promote academic resilience in children. Different aspects of family environment are studied by many researchers which include the strong relationship with adults (Beardslee, 1989; Masten et al., 1990; Cowen et al., 1996), family warmth (Garmezy, 1983,1991; Aber et al.,1985; Felner et al., 1985), family cohesion (Garmezy, 1982,1991; Felner et al., 1985), children performing chores to help family (Masten et al., 1990; Benard, 1991), orderly household environment (Bennett, Wolin, & Reiss, 1988; Wang, Heartel, & Walberg,1997), absence of serious family discord (Garmezy,1985; Mc Millan & Reed, 1994), and close relationships, healthy open communication, perceived parental support, structured family meal environment, and a positive atmosphere at family meals (Aufseeser, Jekielek, & Brown, 2006).

The authoritative parenting style measures the parenting nature, freedom provided by parents, emotional attachment of parents and children, how parents consider the needs of children, establishment of rules and guidelines that their children are expected to follow, democratic nature of parents, responsiveness to children and willingness to listen to questions, more nurturing and forgiving rather than punishing (Maccoby & Jacklin, 1983), parental monitoring and imparting clear standards for their children's conduct, more assertive, but not intrusive and restrictive, supportive rather than punitive (Baumrind, 1991), make children to be assertive as well as responsible, and self-regulated as well as co-operative, try to make the children happy, capable and successful (Maccoby & Jacklin, 1983). This construct is studied as a protective factor by Garmezy, Masten and Tellegan (1984), Wilson-Sadberry, Winfield, and Royster (1991) and Mc Millan and Read (1994).

### **Item writing**

Statements under each scale were constructed by analyzing the components of each protective factor and based on theory of resilience.

#### **Scale of family resources**

The scale of family resources includes 17 statements in draft which specifically measures the mobilization of resources like food, shelter and basic needs, connections to other resources, transportation, physical growth, information, learning opportunities and behaviour models by the parents. All the statements are positive.

Example:

- My parents always focus on arranging the things for my life security, (Statement 2).
- Parents advice me to model the good activities done by others, (Statement 17).

Copies of the Malayalam and English versions of the draft scale are given as Appendix C1 and C5 respectively.

#### **Scale of family psychological nurturance**

The scale contains 30 statements in draft form which measures how parents nurture the personality of students, how parents improve the confidence, how parents inculcate morality, to what extent parents involve in the academic aspects of children and how parents help children to develop a responsible nature in children, and how the parents inculcate self-confidence and esteem. In this scale 24 statements are positive and 6 statements are negative (5, 15, 25, 26, 27, and 29).

Example:

- My parents convince me about the necessity of achieving high academic goals (statement 11).

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- My parents try to find out only the faults in my actions (statement 29).

Copies of the Malayalam and English versions of the draft scale are given as Appendix C2 and C6 respectively.

### **Scale of family environment**

Scale of Family Environment contains 18 statements in the draft form which measures emotional oneness of family members, freedom provided by parents to children, decision making nature in the family, systematic nature of family members, parental discord and its compromise, adjusting mentality of family members, and warm atmosphere in home which help children to manifest success in life. 14 positive statements and 4 negative statements (4, 8, 15, and 16) together constitute scale.

Example:

- Parents tell me about the dignity of labour (statement 11).
- Conflict between my parents affects me and my studies (statement 16).

Copies of the Malayalam and English versions of the draft scale are given as Appendix C3 and C7 respectively.

### **Scale of authoritative parenting**

The scale contains 13 statements in draft which includes 7 positive statements and 6 negative statements (3, 4, 6, 10, 11, and 12). The scale specifically measures parenting nature, freedom provided by parents, emotional attachment of parents and children, and how the parents consider the needs of children.

Example:

- I fear to open up many of my problems to my parents (statement 6).
- I love my parents very much (statement 7).

Copies of the Malayalam and English versions of the draft scale are given as Appendix C4 and C8 respectively.

### Scoring

All the statements are with five point Likert type responses. The five responses are ‘absolutely true’, ‘true’, ‘don’t know’, ‘false’, and ‘absolutely false’. The score ranges from 5 to 1 (absolutely true-5, true-4, don’t know- 3, false-2, and absolutely false- 1). The scoring is reversed for negative statements.

A copy of the response sheet of the scales of family protective factors is given as Appendix C9.

### Item analysis

Conventional Likert procedure was applied separately for item analysis in the scales meant for four family protective factors. 370 students selected with due representation to locality of schools, and type of management of schools were used as try out sample. Responses from the try out sample were scored, arranged in ascending order of total score on the protective factor, and discriminating power in terms of t-value was calculated. Statements having t-values  $\geq 2.58$  were selected, as follows.

<u>Scale</u>	<u>Number of Statements Selected after Try Out</u>		
	<u>+ve</u>	<u>-ve</u>	<u>Total</u>
Scale of Family Resources	16	0	16
Scale of Family Psychological Nurturance	21	2	23
Scale of Family Environment	13	2	15
Scale of Authoritative Parenting	7	2	9

Details of statements selected and discrimination power of items in the four scales on family protective factors are indicated in Appendix C10.

### Reliability

Estimated Test –retest reliability (n=57) and index of internal consistency ( $\alpha$ ) (n= 478) of the four scales of family protective factors are as follows.

<u>Name of the Scale</u>	<u>Reliability coefficient</u>	
	<u>Test-Retest</u>	<u>Cronbach <math>\alpha</math></u>
Scale of Family Resources	0.92	0.88
Scale of Family Psychological Nurturance	0.80	0.87
Scale of Family Environment	0.71	0.80
Scale of Authoritative Parenting	0.70	0.87

### Validity

Theoretically, validity of the four scales of family protective factors was ensured by carefully choosing statements on the particular protective factor to reflect different aspects suggested by previous researches. Masten, et al., (1990) and Morris and Winter (1994) were the base for Family Resources. Masten et al., (1990), Taylor (1991), Keith et al., (1993), Singh et al., (1995), Waxman and Huang (1996), Read (1999), Fantuzzo, Tighe, and Childs (2000), Fan and Chen (2001), and Epstein et al., (2002) provided the bases for Family Psychological Nurturance scale. Aber et al., (1985), Felner et al., (1985), Garmezy (1983,1985,1991), Bennett, Wolin and Reiss (1988), Beardslee (1989), Masten et al., (1990), Benard (1991), Mc Millan and Reed (1994), Cowen et al., (1996), Wang, Heartel and Walberg (1997), and Aufseeser, Jekielek, and Brown (2006) provided the source of statements in the scale of Family Environment. Statements in the scale Authoritative Parenting were suggested by Maccoby and Jacklin (1983), Garmezy, Masten and Tellegan (1984), Baumrind (1991), Wilson-Sadberry, Winfield, and Royster (1991), and Mc Millan and Read (1994).

Further, empirical proof for validity of the four scales of family protective factors are obtained through Confirmatory factor analysis which demonstrated that

statements in the scales have high factor loading on the select family protective factor. The result of Confirmatory factor analysis is given in Appendix C11.

Copies of final version of scale of family protective factors are provided as Appendix C12 to C15.

#### **4. Scale of School Protective Factors**

This scale is a concurrent scale of two school protective factors. assessing the mobilization two school protective factors in secondary school level viz., curriculum adaptation to student diversity, and caring teachers, providing two independent measures.

##### **Planning**

Curriculum adaptation to student diversity is a school protective factor included under the aspect curriculum and instruction. Many researchers focused on aspects of curriculum and its adaptation to students of diverse needs which include flexible and adaptable curriculum without loss of content (Eloiza da Silva Gomes de Oliveira, 2003), accessibility, adaptation of curriculum, pedagogical adaptation, changing way of teaching and adapting, what is going on the classroom to meet the needs of all students, and affective relationships that are established in classroom, the working of curriculum not with knowledge alone, but also with culture, identity, and subjectivity (Glat & Ferreira, 2003). In the context of resilience, curriculum adaptation to student diversity includes sub-components viz., teacher sensitivity to students' cultural and intellectual diversity, adaptation of curriculum content and instructional strategies to ensure student learning, pre-requisite content instruction to overcome students' knowledge limits, and opportunity to learn advanced content and higher order thinking skills (Wang, Haertel, & Walberg, 1997).

Caring by the teachers has resulted in adequate development of students. Previous researches studied, aspects of teacher behaviour viz., committed relationships between students and teachers (Benard, 1995, 1997; Wang, Haertel &

Walberg, 1998), and teachers' caring (Thompson, 2006). Students' decision to remain in school is influenced by caring teachers and highly regarded relationships (McMillan & Reed, 1994; Lee & Burkham, 2003; Wilson, 2007; Knesting, 2008). Positive experiences in school provide students a sense of belonging, bonding, and encouragement (McMillan & Reed, 1994). Teacher caring - a factor in fostering relationships with students (Ladson-Billings, 1994) addresses among other things, student needs in a culturally responsive manner (Gay, 2000). This requires listening to students (Wentzel, 1997; Alder, 2002; Noddings, 2005) as well.

### **Scale of curriculum adaptation to student diversity**

The 12 statements in the scale specifically measure how teachers treat different cultural backgrounds of students while teaching, illustrations, previous knowledge, and teaching strategy used by teachers, and follow up work provided by teachers to further the classroom learning. All the 12 statements are positive in nature.

Example:

- Teachers understand and respect my cultural styles (statement 2).
- Teachers relate content with previous knowledge to assimilate the idea clearly (statement 7).

Copies of Malayalam and English version of the draft-scale are given in Appendix D1 and D3 respectively.

### **Scale of caring teachers**

The scale of caring teachers contains 26 statements based on committed relationships between students and teachers, high expectations for all students, student mastery of new experiences, promotion of student self-concept and self-esteem, and role modeling of problem-solving and pro-social behaviours. The scale specifically measures attachment between teachers and the student, freedom and guidance provided by teachers, expectations of teachers about the students, teaching

method, follow up provided, caring extended by teachers, and teachers, help in personal development of the student. All the 26 statements except one (statement 13) are positive.

Example:

- Teachers respect my qualities (statement 7).
- Teachers avoid me (statement 13).

Copies of Malayalam and English version of the draft-scale are given in Appendix D2 and D4 respectively.

### **Scoring**

All the statements are five point Likert type and five responses are 'absolutely true', 'true', 'don't know', 'false', and 'absolutely false'. The score ranges from 5 to 1 (absolutely true-5, true-4, don't know- 3, false-2, and absolutely false- 1 for positive items). For negative statements, scoring was reversed. A model response sheet for the scales of school protective factors is given in Appendix D5.

### **Item analysis**

Conventional item analysis procedure was applied, separately for the scales of two school protective factors. 370 students selected with due representation to locality of the schools, and type of management were used as try out sample. Responses from the try out sample were scored, arranged in the ascending order of total score on protective factors, and discriminating power in terms of t-value were calculated.

Statements having t-values  $\geq 2.58$  were selected. In scale of curriculum adaptation to student diversity all the 12 statements selected are positive. In scale of caring teachers all the 25 selected statements are positive. Statements selected and discrimination power of statements in the two scales on school protective factors are given indicated Appendix D6.

### Reliability

Estimated Test –retest reliability (n= 58) and index of internal consistency ( $\alpha$ ) (n= 478) of the two scales of school protective factors are as follows.

<u>Name of the Scale</u>	<u>Reliability Coefficient</u>	
	<u>Test-Retest</u>	<u>Cronbach <math>\alpha</math></u>
Scale of Curriculum Adaptation to Student Diversity	0.72	0.81
Scale of Caring Teachers	0.87	0.91

### Validity

The two scales of school protective factors were constructed by including statements on the protective areas identified by previous researchers in relation to curriculum adaptation to student diversity and caring teachers. Hence, theoretically, the scales are considered valid. Curriculum adaptation to student diversity based on Eloiza da Silva Gomes de Oliveira (2003), and Glat and Ferreira (2003). Ladson-Billings (1994), McMillan and Reed (1994), Benard (1995, 1997), Wentzel (1997), Wang, Haertel, and Walberg (1998), Gay (2000), Lee and Burkham (2003), Noddings (2005), Thompson (2007), Wilson (2006), and Knesting (2008) provided elements of Caring Teachers.

Validity of two scales of school protective factors was confirmed through Confirmatory factor analysis which demonstrated that statements in the scales have high factor loading on select school protective factor. The result of Confirmatory factor analysis is given in Appendix D7. Final version of the scales of two school protective factors are provided as Appendix D8 and D9.

### 5. Battery of Teacher- Made Tests of Achievement

In present study, purpose of administering achievement test in Malayalam, English, Basic Science, Social Science, and Mathematics was to check the entry level of the experimental students and to compare the level of knowledge possessed by students in select classes in Phase 2 of the study. This was to ensure that the four groups are not significantly different on academic achievement prior to intervention.

### Planning for the achievement test battery

In each of the select subject, test was constructed based on the content in the standard VII curriculum in areas like Malayalam, English, Basic Science, Social Science, and Mathematics because the tests were administered in the starting phase of standard VIII.

To define the scope and emphasis of test related to objectives of the content clearly, and to test how far the objectives are reflected in instruction and to ensure that the tests validly measure the knowledge, skills and other academic attributes of pupil that teacher designed specifically to teach; a table of specification was prepared. It includes weightage to objectives, content, and form of questions. Table of specification (blue print) was constructed by the investigator well in advance. Blue print is presented in Table 9.

**Table 9**

*Blue Print for Battery of Teacher-made Tests of Achievement*

Objectives Form of Question Content	Knowledge		Understanding		Application		Total Item	Total Marks
	O	SA	O	SA	O	SA		
Malayalam	$\frac{1}{2}$ (15)		$3(2)$ $1\frac{1}{2}(1)$	$5(1)$			19	20
English	$1(5)$		$2(2)$		$2(1)$ $1\frac{1}{2}$ $(1)$ $2\frac{1}{2}$ $(1)$	$5(1)$	11	20
Basic Science	$\frac{1}{2}(14)$	$\frac{1}{2}(1)$		$2(4)$		$5(1)$	19	20
Social Science	$1(5)$			$3(2)$ $2(2)$ $5(1)$			10	20
Mathematics	$4(1)$	$6(1)$		$3(1)$ $2(1)$		$5(1)$	5	20
Total Item	40	1	5	12	3	3	64	
Total Marks	$28\frac{1}{2}$	$4\frac{1}{2}$	$11\frac{1}{2}$	33	6	15		100
Grand total	$34\frac{1}{2}$		$44\frac{1}{2}$		21			100

Note: Figure outside the bracket indicates the marks and figure within tbracket indicates number of questions. O-Objective type, SA-short answer type, E-Essay type.

### **Item writing and editing**

Items were prepared based on the blue print in consultation with teachers in R.M.H.S.S. Melattur. A number of items were written, and then the number of items matched to the blue print by editing and choosing items with sufficient quality using the expertise of school teachers.

### **Content validity**

In the test of Malayalam, items were based on content prescribed for Malayalam part II. In English, the test was based on the English grammar prescribed for grades upto standard VII was prepared. Basic Science test was constructed based on the content prescribed in Physics, Chemistry and Biology concepts in the Basic Science syllabus for standard VII. In Social Science and Mathematics as well, tests were based on the content prescribed in the syllabus for standard VII. As the items of constituent tests are based on the content learnt in lower grades and as the items are constructed and edited by the teachers who actually measure students' achievement at standard VIII, the measure of achievement obtained from constituents tests within the battery of tests and it considered valid.

### **Administration**

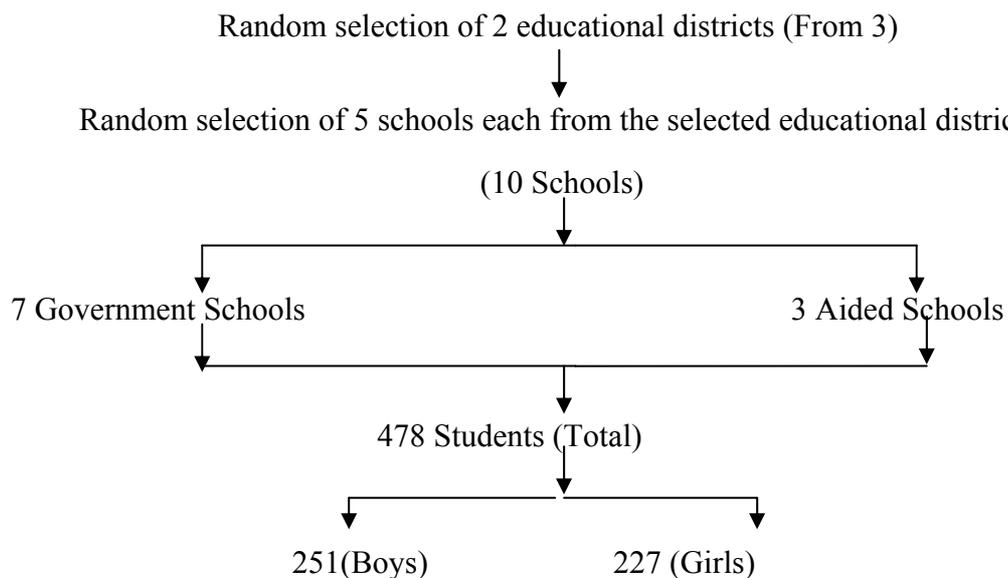
Each test in the battery was separately administered. The time allotted for completion of each test was 40 minutes. Based on the scores of achievement tests in Malayalam, English, Basic Science, Social Science and Mathematics, the selected classes were allocated to experimental treatment and control classes during the experimental phase.

### **Scoring**

Scoring was done as per the scoring scheme. The Test-Battery, and scoring key and marking scheme are given in Appendix E1 and E2.

### Sample for the Survey

Population of the study was secondary school students. Sample was drawn from 10 rural secondary Schools of Malappuram district. All the 10 schools are in local Panchayat area, and thus are rural schools. Six hundred and twenty students drawn from fifteen randomly selected standard VIII classes constitute the sample. For this, the study at first randomly drew two educational districts from the three in Malappuram District. In each educational district, five schools were randomly chosen. Then from the five schools in one educational district, eight classes were randomly selected. Seven classes were randomly selected from the second educational district. Data from 478 students which were complete in all respects constituted by 251 boys and 227 girls, were used for analysis.



### Administration of scales and collection of achievement scores from school records

The scales of risk factors, scales of within-child, family, and school protective factors were administered in the select sample. Academic achievement scores in select subjects viz., Mathematics, Basic Science, Social Science, and Information Technology of selected sample were collected from school records. All schools had a common test pattern and they have a common standard in assigning

scores for formative assessments. The summative and formative scores added together were taken as the measure of achievement.

### **Identification of school subjects and protective factors vulnerable to risk**

From the analysis academic achievement of school subjects, and, within-child, family, and school protective factors vulnerable to three risk domains became clear.

### **Phase 2: Intervention for Enhancing Academic Resilience via Fostering the Protective Factors**

After identifying the school subjects and protective factors vulnerable to risks in phase 1, Phase 2 of study is an experimental phase designed to answer the following questions. Can FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Family cum Child focused intervention for fostering Academic Resilience) separately enhance protective factors and student achievement? Do the levels of intervention (FAR, CAR, and FCAR) differ in their effect on gain in each of the select protective factors, and student achievement? If so, which level of intervention is more effective? Do the intervention groups (FAR, CAR, FCAR) have significantly higher achievement than control group after adjusting for the pre-intervention differences if any in achievement, child-risk, and family-risk?

### **Variables in the Experimental Phase**

The experimental phase of study employs independent variable, dependent variables, and moderator variables.

#### **Independent variable**

Independent variable in this study is treatment for fostering academic resilience. There are following levels of treatment for fostering academic resilience viz.,

1. FAR (Family focused intervention for fostering Academic Resilience)
2. CAR (Child focused intervention for fostering Academic Resilience)
3. FCAR (Family cum Child focused intervention for fostering Academic Resilience), and
4. Control group

### **Dependent variables**

Nature and extent of risk encountered as well as the evidence of resilience vary among different populations depending on age group, culture, and socio-economic factors. Accordingly the researchers have to choose the means to operationalize risk and resilience (Luthar, Cicchetti, & Becker, 2000). Accordingly present study used child-risk, family-risk, and school -risk as the adverse condition necessary for resilience to happen and academic achievement as indication of resilience.

In this study, indicators of academic resilience viz., academic achievement and protective factors are considered as dependent variables. Specifically there are 11 variables they are,

1. Academic Achievement,

There are 10 protective factors classified into two categories viz., within-child protective factors and family protective factors.

Six within child protective factors viz.,

2. Social Competence
3. Problem Solving Skill
4. Critical Consciousness
5. Autonomy
6. Sense of Purpose
7. Peer Support, and

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Four family protective factors viz.,

8. Family Resources
9. Family Psychological Nurturance
10. Family Environment, and
11. Authoritative Parenting

It may be noted that this list of protective factors in experimental phase excludes two school protective factors viz., Curriculum Adaptation to Student Diversity, and Caring Teachers which were considered during survey phase because the intervention focuses only on within-child and family protective factors and hence its effect on school protective factors are not investigated.

### **Moderator variables**

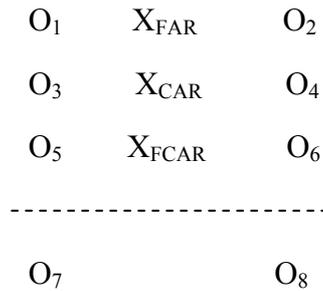
The effect of intervention on academic resilience is studied for two levels (low and high) of child-risk and family-risk. Hence Child-risk and Family-risk are moderator variables in this study.

### **Experimental Design**

There are three levels of collaborative intervention viz., FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Child cum Family focused intervention for fostering Academic Resilience). FAR was focused on fostering family protective factors for fostering resilience. CAR was mainly focused on fostering within-child protective factors for fostering resilience. FCAR treatment was designed to find out the collaborative effect of enhancing both within-child and family protective factors, and hence received Part 1 and Part of the programme for fostering resilience.

In order to test the effectiveness of three levels of intervention in fostering academic resilience an experimental procedure was used, with a Quasi-experimental design, as follows.

#### Pre-test – Post-test Control Group Design



$O_1, O_3, O_5,$  and  $O_7$  are the pre-tests on the dependent variables viz., six within-child protective factors (Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support), and four family protective factors (Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting) and Academic Achievement (on Battery of Tests of achievement in Malayalam, English, Basic Science, Social Science, and Mathematics).

$X_{FAR}, X_{CAR}, X_{FCAR}$  are the experimental treatments viz.,

FAR (Family focused intervention for fostering Academic Resilience)

CAR (Child focused intervention for fostering Academic Resilience), and

FCAR (Child cum Family focused intervention for fostering Academic Resilience).

$O_2, O_4, O_6,$  and  $O_8$  are the two sets of post-tests (immediate and delayed) on the dependent variables viz., six within-child protective factors (Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support), four family protective factors (Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting), and Test of Achievement in Mathematics.

### **Tools Used in Experimental Phase**

The following tools developed during the survey phase of study were used to quantify the dependent and moderator variables.

1. Scales of Risk Factors
2. Scales of Within- Child Protective Factors
3. Scales of Family Protective Factors
4. Scales of School Protective Factors and
5. Battery of Teacher- Made Tests of Achievement used as the measure of previous achievement (pretest).

In addition to the above tools, score on test of achievement in mathematics administered by teachers for mid-term and annual examination after the treatment were treated as immediate and delayed test scores on achievement in mathematics.

The other major device used in experimental phase was Programme for Fostering Academic Resilience

### **Programme for Fostering Academic Resilience**

As the first step in phase 2 of study a resilience fostering programme was designed to foster academic resilience in at-risk secondary school students. Resilience is an inside out process that begins with one person's belief and emanates outward to transform whole families, classrooms, schools and communities (Fullan, 1993). The experimental treatment consisted of a collaborative intervention programme focusing on the development of within-child and family protective factors of academic resilience. Based on the findings from resilience literature, the present resilience fostering programme utilized a collaborative effort of students, parents, and community resources. The programme made use of both asset focused and process focused strategies.

Collaborative intervention includes:

- CAR (Child focused intervention for fostering Academic Resilience)
- FAR (Family focused intervention for fostering Academic Resilience)
- FCAR (Family cum Child focused intervention for fostering Academic Resilience). It was a combination of CAR and FAR. CAR (Child focused intervention for fostering Academic Resilience) and FAR (Family focused intervention for fostering Academic Resilience) are described in the following two sections.

FCAR (Family cum Child focused intervention for fostering Academic Resilience) group received FAR (Family focused intervention for fostering Academic Resilience) and CAR (Child focused intervention for fostering Academic Resilience) treatments in the same intensity, timing and sequence as they were imparted to the groups which received the latter two treatments in isolation.

### **Child focused intervention for fostering Academic Resilience**

The resilience fostering programme consisted of 12 sections, two to four lessons under each of them, with 29 lessons in total plus personality development using community resources. The twelve sections of student activities in resilience fostering programme roughly correspond to the protective factors identified by the study. Each section of resilience fostering programme has activities that require group and individual work, and, activities within and outside the classroom. The 12 sections, and the title of lessons included in them are as follows.

<b><u>Sections in resilience enhancing programme</u></b>		<b><u>Title of the lessons and duration in class period</u></b>		
I	A new beginning to make oneself flexible	1	Education, Faith and Parents	1
		2	Widening the horizons	1
II	Preparing norms-how can we direct our life	3	Preparing Norms	1
		4	Finalizing and displaying the norms	1
III	Eliciting information from others	5	Identifying a local theme	1

<b><u>Sections in resilience enhancing programme</u></b>		<b><u>Title of the lessons and duration in class period</u></b>	
	through interview	6	Preparing the interview schedule 1
		7	Eliciting information on how they adapt-interface 2
		8	Reporting the interview 1
IV	Developing the abilities to plan the life	9	Analysis of previous week's work 1
		10	Preparing a plan of action for upcoming week 1
		11	Follow up and evaluation 1
V	Understanding and considering others	12	Analyzing the situations 1
		13	Enacting/ role playing the situations 1
VI	Developing hopefulness	14	Listing out the hopes and expectations 1
		15	Presenting the hopes and expectations 1
VII	Developing competence to effectively communicate individual aspirations and personal factors	16	Listening to the story and finding the qualities 1
		17	Becoming a writer 1
		18	Presenting the story 1
VIII	Starting a goal oriented life for a better future	19	Whether I had set any goals in past and what are my future goals 1
		20	Experiences in setting and attaining goals 2
IX	My caregivers' expectations on me	21	Try to understand parents and teachers 1
		22	Analyzing the relationships 1
X	My resources	23	Identifying persons who can help me 2
		24	Discussing the importance of identifying the resources in advance 1
XI	Grapes technique	25	Identifying and presenting <i>I HAVE</i> factors 1
		26	Identifying and presenting <i>I</i> 1

<b><u>Sections in resilience enhancing programme</u></b>		<b><u>Title of the lessons and duration in class period</u></b>	
		<i>CAN</i> activities	
		27	Identifying and presenting <i>I AM</i> images 1
XII	Forecasting and overcoming problems	28	Listing my own problems 1
		29	How I escape? 1
XIII	A class on personality development using community resources	30	Personal characteristics and their role in education 3

### **Elements of a lesson in CAR (Child focused intervention for fostering Academic Resilience)**

As in any other programme, logical and sequential arrangement of phases was the heart of effective implementation of resilience fostering programme. As in other classroom instructional practices, lessons on resilience also has pre-teaching, teaching, and post-teaching phases. Each lesson was completed within forty minutes. In all lessons emphasis was given to one or more protective factors which led to the development of academic resilience in students. Both individual and group activities were employed according to select task in a lesson. However all the activities possess a common strategy which include different components like Title, Protective Factor, Focus, Orientation, Features, Readiness, Organization, Task, Reflections, and Post-Script. Among these components, Title, Protective Factor, Focus, and Features are the pre-intervention planning components, Readiness, Orientation, Organization, Task, and Reflections are the intervention activities, and Post-Script is the self-evaluation component by the facilitator. A brief description of the components of each lesson is as follows.

<b><u>Components of each lesson</u></b>	<b><u>Description</u></b>
1 Title of the Lesson	Self descriptive name of the lesson
2 Name of the Protective factor	Specifications of the protective factors to be developed
3 Focus	List of abilities that is going to be fostered by the lesson
4 Features	Characteristics of the activity
5 Readiness	Preparation to start a task
6 Orientation	Instructions to students on objectives, tasks and interaction patterns
7 Organization	Specifying either activity is a group work or individual work
8 Task	Actual work of the student
9 Reflections	Discussion of students about the merits of completed task
10 Post-script	Teacher's analysis and feedback on the completed task

Objective evident with the title of lesson familiarizes learner about the protective factors that have to be inculcated in them to achieve general objective. Statement of objective also indicates the components that constitute the protective factor. In a single lesson, more than one protective factor is included. For e.g.; in a lesson, "Eliciting Information from Others through Interview" one objective was stated as, to develop social competence in students through improving their communication skills. Focus restates the specific objectives of lesson from a process perspective focusing the participants' attention to the specific abilities and behaviours that the learners are going to acquire in order to develop protective factors. Feature indicates the special characteristics of given lesson. The most important observable aspects of classroom activity are highlighted. Characteristics of the students' behaviour and that of learning activity may be different during a single lesson in order to achieve objective.

Readiness stage creates the set. Although students are intrinsically motivated to learn and do the work related to their schooling an extrinsic motivation is necessary to maintain the energy level and aspirations to complete the actions.

Facilitator incorporates some interesting techniques to ignite both the mental and physical readiness in children, to make the students get ready to start work. Orientating students about activity is much significant in successful completion of activity, because they will get a direction and idea about the work they are going to do. Students become self-disciplined and start to plan something in their mind about how to behave during the lesson. Organization clarifies whether the activity is a group or individual work and also indicates whether the activity is an indoor or outdoor one. Task gives a detailed description of the activity that is to be carried out in classroom. It visualizes all the activities students are doing to secure the goal they formulated prior to starting of activity. Unique phases of each learning activity are described under self-descriptive headings. It also includes how teacher is positively interfering the students to promote their “I have; “I can”; and “I am” qualities that constitutes the language of resilience.

Shared reflections give opportunity for self-evaluation and appraisal of students and are useful in assimilating the outcomes of activity. During shared reflections every student in the classroom will be benefitted from the understanding shared by other students. Students will realize that their “I am” qualities have improved, indicating their successful adaptation and improved self-image. Questions by teacher will be the platform for conducting shared reflections. Students in groups discuss and arrive at their own conclusions and record the same in the work book as the abilities gained by them. Post-script included in all lessons is a teacher perspective on shared reflections tracing how the students are walking along the path of resilience. This concluding element of lesson comment on the feasibility, practical problems, and teacher’s own reflection about activity operationally. Detailed lesson plans are provided in Appendix F1.

### **Mobilizing community resources**

Effective utilization of community resources has its own significance in the development of academic resilience. Utilizing the expertise of community social

workers, a personality development programme was organized to sensitize the importance of developing good personal characteristics and its role in academic achievement. Students, teachers, head teacher, local self-government members, counselors and block resource person participated in the programme. Details of the programme for mobilizing community resources and gist of main events are given in Appendix F1.

### **FAR (Family focused intervention for fostering Academic Resilience)**

With the permission of head of institution of experimental school, written communication were sent to \parents of students in experimental groups to invite them to school for an awareness programme on family protective factors. Awareness programme for the parents included importance of academic achievement of students, risks faced by their wards, importance of family in protecting children and helping them achieve despite adversities, and ways and means of effective mobilization of select family protective factors viz., family resources, family psychological nurturance, family environment and authoritative parenting. After conducting the awareness programme, feedback were collected from students about how their parents are mobilizing the family protective factors for their improvement. After two weeks, a letter containing aspects like effective mobilization of family protective factors and its significance in academic resilience was sent to parents who had undergone the awareness programme. Again the feedback was collected from the students about their parents' role in developing academic resilience. The family focused intervention has four important stages.

1. Collecting information from students on home conditions through diary writing.
2. Sensitizing the parents about the importance of nurturing and mobilizing family protective factors through parents meet at school.
3. Sending communication to parents about the family protective factors.
4. Collecting feedback from the students.

Sensitizing the parents about the importance of nurturing and mobilizing family protective factors focused on

- The nature of adolescents
- Importance of academic achievement of students
- Risks faced by students
- Influence of risk on achievement
- Importance of family protective factors on academic resilience
- Effective mobilization of select family protective factors viz., family resources, family psychological nurturance, family environment, and authoritative parenting.

Written communication was sent to the parents, with the permission of head of institution of experimental school. Role of effective communication and importance of arranging appropriate psychological environment, facilities and opportunities were emphasized. Face to face contact with parents was limited to two hours. In addition, there were two written communication, telephonic conversation that ensued from written communication and / or face to face meeting, and indirect communication generated via four classroom meetings with students in the FAR group in as many weeks. Sample of the correspondence with parents, and the events of the programme day are given in Appendix G1.

### **Sample Used in Experimental Phase**

For experimental treatment one among the school sampled for the survey having an average educational and social status was selected randomly. This school is located in a village named Pattikkad 8 kilometers away from Perintalmanna, nearby municipal area, in Malappuram District which is a socially and educationally backward area identified by the Government of India. Headmistress and senior assistant of school were consulted. Four divisions were selected randomly from the total of 8 divisions of standard VIII in this school.

Personal information blank was used to find out the features of control and experimental groups. Name of the student, age, whether a fresh student of standard VIII, subjects that are easy to learn, difficult subjects, cause of adversity, name of guardian, relationship with guardian, occupation of guardian, siblings, distance to school from home, mode of transportation, lunch style, utilization of vacation, help done to parents in household activities, and media facilities in home were obtained from the four groups. The relevant information is summarized. The obtained information show that groups are approximately similar on the select school related and family related factors which may have impact on student adversity and thus achievement. Malayalam and English versions of Personal Information Blank and the summary of comparison of groups are presented in Appendix H1, H2 and H3.

#### **Matching the groups on size, child-risk, family-risk, and achievement**

The four groups (three experimental plus one control group) were matched on relevant variables viz., child-risk, family-risk, total pre-achievement, and mathematics pre-achievement. For this, Scale of Child-Risk, Scale of Family-Risk, and Battery of Teacher-Made Tests of Achievement were administered to the subjects in the four groups. The two risk scales provided scores on child and family risk factors. Since all four groups of students are from same school and experimental treatments are especially focusing on fostering child protective factors and family protective factors, excluding school protective factors, measure of school risk was not taken. Battery of tests of achievement provided measures of aggregate academic achievement (total score) and achievement in mathematics of four groups. Based on scores obtained on above measures, students with extreme scores in anyone of the four groups, without a near match in the other groups, were excluded from the data considered for analysis and derivation of findings. Thus, in each of four groups, the number of subjects considered for analysis of data is 30.

### **Experimental and control groups**

The experimental and control treatments were randomly allotted to the four groups (intact classes). After excluding extreme cases from the analyzed sample, the differences among four groups on achievement in mathematics, academic achievement, child-risk, and family-risk were not significant. Results of comparison among the four groups for equality on pretest scores of achievement in mathematics, academic achievement, child-risk, and family-risk are provided in Chapter IV, Analysis.

### **Low and high risk groups**

For analysis purpose, the treatment groups were divided into low and high risk groups based on scores on child-risk and family-risk. Based on Median value of child-risk score for total group, the total group was divided into low child-risk (below median) and high child-risk (above median) groups. Likewise the total group was divided into low family-risk and high family-risk groups.

### **Pre-Testing on Protective Factors, Treatment and Post Testing**

Scales of six within-child protective factors and four family protective factors were administered in all four groups. As per design, treatment was given to experimental classes. Both immediate and delayed post-tests on select protective factors were conducted, and both immediate and delayed post treatment achievement scores in Mathematics were collected from school records. As it was not viable to equate the four groups, the effect of treatment on protective factors is measured in terms of post treatment gain (Pretest score subtracted from Post test score).

### **Statistical Analyses**

The techniques of analysis of data employed in this study are the following. All the analysis were carried out with Statistical Programme for Social Sciences (SPSS).

### **1. Analysis of Variance**

One way Analysis of Variance was employed in this study to,

- i. analyze group differences of three risk groups (viz., low, average, and high) sourced from child-risk, family-risk, and school risk on twelve protective factors and achievement in subjects viz., Mathematics, Basic Science, Social Science, and Information Technology
- ii. test equality of treatment groups prior to intervention
- iii. compare the post test scores of achievement and protective factors in FAR, CAR, FCAR, and control groups.

In order to employ ANOVA, the data must satisfy some basic assumptions. The basic assumptions underlying the use and interpretation of ANOVA (Wiersma, 1986) are the following:

- 1) Measurement of the dependent variable, the variable whose data are being analyzed is on at least interval scale.
- 2) The score (criterion or dependent variable) are selected from a population that is normally distributed.
- 3) When two or more populations are being studied, they must have homogenous variance.
- 4) The observations or scores are independent, which means that the score of one individual is not influenced by score of any other.

Survey phase of present study utilized 16 criterion variables. Out of this, 12 protective factor variables were measured using Likert type scales, and academic achievement in four subjects were measured by the achievement tests constructed in such a way that scores of test possess the characteristics viz., equality, magnitude, and equal interval. Hence the first assumption was satisfied in use of ANOVA.

In order to verify the second assumption, the investigator calculated statistics like mean, median, mode, standard deviation, skewness, and kurtosis of the criterion variables in the survey and dependent variables in experimentation phase.

The results presented in Analysis chapter demonstrate that the second assumption is also satisfied.

Third assumption for ANOVA is the homogeneity of variance across the different groups or samples of study. Studies with large samples have sufficient reason for statistical acceptance of homogeneity of variance. In the present study, in survey phase the total sample is 478 and in experimental phase total sample is 120. So the third assumption was satisfied.

Fourth assumption of ANOVA is that the samples drawn should be independent. In the present study, three risk groups viz., low, average, and high sourced from child-risk, family-risk, and school-risk in the survey phase, and FAR, CAR, FCAR, and Control groups were framed following the conventional procedure of “ $\sigma$ ” distance from mean. This means that the three groups subjected to study in survey phase and four groups subjected to study in experimentation phase were independent. With this fourth assumption is also satisfied.

## **2. Analysis of Covariance**

Being a quasi experimental study, the present study utilized Analysis of Covariance to statistically equate the initial differences of the three interventions and control groups.

As a requirement to employ ANCOVA, the investigator scrutinized data used for analysis with a view to check whether the data are sufficient to satisfy the major assumptions suggested by Winer (1971), Wildt and Ahtola (1978), and Ferguson (1976) to carry out the ANCOVA procedure. ANCOVA has two important additional consideration than ANOVA, viz.,

1. Independence of the covariate and treatment effect, and,
2. Homogeneity of regression slopes.

The basic assumptions of ANCOVA mentioned above were examined by analyzing the collected data. The results are presented below.

The intervention and control groups do not differ on child-risk, family-risk and mathematics pre-achievement (see Table 37) and hence these variables can be considered covariates without violating assumption 1.

a) **Linear Relationship between the Dependent Variable and the Covariates**

The nature of relationship between dependent variable and covariates was studied using scatter plots. Visual examination of the scatter plots revealed that the relationship between dependent variable (immediate post-treatment achievement in Mathematics) and the covariates viz., child-risk, family-risk, and mathematics pre-achievement did not depart greatly from the line of goodness of fit. Through this, the assumptions of linear relationship between the dependent variable and the covariates were fulfilled.

Scatter plots of three covariates against dependent variable are presented as Appendix J1.

**3. One tailed test of significance of difference between means.**

In order to compare the means of intervention and control groups, One tailed test of significance of difference between means was employed.

**4. Two tailed test of significance of difference between means.**

In order to compare between the means on variables in survey and compare between the means of intervention groups two tailed test of significance of difference between means was employed.

Findings are presented in chapter IV.

Present study employed three major statistical techniques for analyzing the data and for testing the hypotheses viz., mean difference analysis, and one-way ANOVA for analyzing the data collected from survey, and, mean difference analysis, one-way ANOVA, and ANCOVA for analyzing the experimental data. One-way ANOVA was employed to find out whether the three risk groups viz., low, average, and high differ significantly in protective factors and academic achievement and also to check whether the control and experimental groups differ significantly in academic resilience. Mean difference analysis was conducted to compare two groups if the results of ANOVA were significant in respect to the comparison groups. ANCOVA was used in the analysis of experimental data to examine whether the three experimental groups and control group differ significantly in post-treatment achievement, after controlling the effect of covariates.

### **Influence of child-, family-, and school risks on protective factors and academic achievement**

The analysis of data from survey phase and the results thereof the survey are presented first, followed by analysis and results of the data from experimental phase. Before proceeding into the testing of hypotheses, the distribution of scores on the relevant variables was studied.

#### **Distribution of scores on criterion variables and attribute variables**

Essential descriptive statistics like Mean, Median, Mode, Standard Deviation, Skewness, and Kurtosis of all the select variables for the total sample in the survey phase of the study were calculated. This data are presented in the Table 10.

**Table 10***Descriptive Statistics of the Select Variables in the Survey Phase*

Variables	Mean	Median	Mode	SD	Skewness	Kurtosis
<b>Criterion Variables</b>						
Social Competence	74.97	76	77	7.11	-0.63	0.95
Problem Solving Skill	65.66	66	67	7.09	-0.58	0.48
Critical Consciousness	51.92	53	56	5.78	-2.44	13.20
Autonomy	47.57	48	49	4.75	-1.02	1.01
Sense of Purpose	89.79	91	95	7.25	-0.97	0.97
Peer Support	83.57	84	84	7.42	-0.83	1.97
Family Resources	69.50	72	79	9.16	-1.54	2.91
Family Psychological Nurturance	99.89	101.5	106	10.32	-0.94	1.76
Family Environment	65.81	67	72	7.04	-1.17	1.86
Authoritative Parenting	38.25	40	45	7.25	-1.92	3.36
Curriculum Adaptation to Student Diversity	54.21	55	57	6.70	-0.61	0.65
Caring Teachers	102.49	105	114	14.63	-0.84	0.81
Mathematics	38.89	33.3	30	13.43	0.73	1.24
Basic Science	48.66	47.6	47.6	13.33	0.09	1.68
Social Science	43.80	40	30	15.22	0.81	1.17
Information Technology	63.50	65	70	15.19	-0.59	1.76
<b>Attribute Variables</b>						
Child-Risk	46.35	47.5	53	11.76	-0.32	-0.59
Family-Risk	32.33	30	32	12.77	1.39	2.25
School-Risk	37.72	36	41	12.89	0.81	0.75

From table 10 it can be seen that the three measures of central tendency viz., Mean, Median, and Mode of the criterion variables like Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, Peer Support, Family Resources, Family Environment, Authoritative Parenting, Curriculum Adaptation to Student Diversity, and Basic Science and attribute variables like Child-Risk, Family-Risk, and School-Risk are approximate to one

another. In case of Family Psychological Nurturance, Caring Teachers, Mathematics, Social Science, and Information Technology the values show slight variation. Indices of kurtosis of all criterion variables and two attribute variables (Family-Risk, and School-Risk) are greater than zero. So the distribution is leptokurtic. Indices of skewness of all criterion variables except Mathematics, Basic Science, and Social Science, and one attribute variable (Child-Risk) are slightly negatively skewed and the distribution is negatively skewed. To have a summary view of the nature of distribution, the smoothed frequency curves of the distribution of the scores on the criterion variables (within child, family and school protective factors, and achievement in school subjects) and attribute variables (child, family and school risks) in the survey phase of the study are provided in Appendix II.

Since the criterion variables do not vary seriously from the normal distribution, it was decided to proceed with analysis of variance. Results of the analysis of survey data are presented in the following session under appropriate heads.

### **Difference among Low, Average, and High Child Risk Groups in Protective Factors**

In order to answer the question ‘which among the select twelve protective factors does significantly differ by the levels (low, average, and high) of risks sourced from within-child in secondary school students?’ analysis of variance of each protective factor at three levels of risk were carried out. Results are presented under separate headings for within-child, family and school protective factors.

#### **Comparison of Within-child Protective Factors by Child-Risk**

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, in

secondary school students differ significantly based on their level (low, average, and high) of risk from within-child source". For a summary view of the within-child protective factors in the three levels of child-risk, mean and standard deviation of them are presented in Table 11.

**Table 11**

*Means and Standard Deviations of the Within-Child Protective Factors by Three Levels of Child-Risk*

<u>Within Child Protective Factors</u>	<u>Groups</u>					
	<u>Low Child-Risk<sup>a</sup></u>		<u>Average Child-Risk<sup>b</sup></u>		<u>High Child-Risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Social Competence	76.17	6.96	74.43	7.18	75.89	6.79
Problem Solving Skill	65.80	7.38	65.43	7.02	66.46	7.11
Critical Consciousness	51.63	8.14	51.93	4.69	52.17	6.82
Autonomy	47.84	5.04	47.26	4.84	48.54	3.88
Sense of Purpose	90.74	6.87	89.31	7.33	90.79	7.22
Peer Support	84.11	6.95	82.91	7.60	85.65	6.77

<sup>a</sup>n=82, <sup>b</sup>n=318, <sup>c</sup>n=78

Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support were compared, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. Results of one-way ANOVA of the six within-child protective factors are given in Table 12.

**Table 12**

*ANOVA of Within-Child Protective Factors by Child-Risk among Secondary School Pupils*

Within-child Protective Factors	Source of variance	SS	df	MS	F
Social Competence	Between groups	277.37	2	138.68	2.77
	Within groups	23809.99	475	50.13	
	Total	24087.36	477		
Problem Solving Skill	Between groups	68.08	2	34.04	0.68
	Within groups	23943.16	475	50.41	
	Total	24011.24	477		
Critical Consciousness	Between groups	11.46	2	5.73	0.17
	Within groups	15907.39	475	33.49	
	Total	15918.85	477		
Autonomy	Between groups	109.56	2	54.78	2.44
	Within groups	10651.66	475	22.42	
	Total	10761.22	477		
Sense of Purpose	Between groups	228.16	2	114.08	2.18
	Within groups	24857.83	475	52.33	
	Total	25085.99	477		
Peer Support	Between groups	499.64	2	249.82	4.61**
	Within groups	25760.54	475	54.23	
	Total	26260.17	477		

\*\*p < .01

Table 12 shows the following results regarding the within-child protective factors among the three child-risk groups, viz., Low, Average, and High. The main effect of child-risk on Social Competence is not significant,  $F(2,475) = 2.77$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Social Competence.

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The main effect of child-risk on Problem Solving Skill is not significant,  $F(2,475) = 0.68$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Problem Solving Skill.

The main effect of child-risk on Critical Consciousness is not significant,  $F(2,475) = 0.17$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Critical Consciousness.

The main effect of child-risk on Autonomy is not significant,  $F(2,475) = 2.44$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Autonomy.

The main effect of child-risk on Sense of Purpose is not significant,  $F(2,475) = 2.18$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Sense of Purpose.

The main effect of child-risk on Peer Support is significant,  $F(2,475) = 4.61$ ,  $p < .01$ . Follow up test of significance of difference between the means of Peer Support of the child-risk groups revealed the following results. There is no significant difference between mean scores of Peer Support of low ( $M=84.11$ ,  $SD=6.95$ ) and average ( $M=82.91$ ,  $SD=7.60$ ) child-risk groups,  $t=1.37$ ,  $p > .05$ ; and, between low ( $M=84.11$ ,  $SD=6.95$ ) and high ( $M=85.65$ ,  $SD=6.77$ ) child-risk groups,  $t=-1.42$ ,  $p > .05$ . There is significant difference between the mean scores of peer support in average ( $M=82.91$ ,  $SD=7.60$ ) and high ( $M=85.65$ ,  $SD=6.77$ ) child-risk groups,  $t=-3.12$ ,  $p < .01$ .

## Discussion

Results of one-way ANOVAs of six within-child protective factors by child-risk showed that low, average, and high child-risk groups do not differ significantly ( $p > .05$ ) in social competence, problem solving skill, critical consciousness, autonomy, and sense of purpose. The level of child-risk does not make difference in these protective factors. However, peer support, does significantly differ ( $p < .01$ ) by

child-risk. There is significantly higher peer support in high-risk students than that in average child-risk group.

### Comparison of Family Protective Factors by Child-Risk

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., vii) Family Resources, Viii) Family Psychological Nurturance, ix) Family Environment, and, x) Authoritative Parenting, in secondary school students differ significantly based on their level (low, average, and high) of risk from within-child source”. For a summary view of the family protective factors in the three levels of child-risk, mean and standard deviation of them are presented in Table 13.

**Table 13**

*Means and Standard Deviations of Family Protective Factors by Three Levels of Child-Risk*

<u>Family Protective Factors</u>	<u>Groups</u>					
	<u>Low Child-Risk<sup>a</sup></u>		<u>Average Child Risk<sup>b</sup></u>		<u>High Child Risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Family Resources	71.99	6.89	69.52	9.18	66.78	10.45
Family Psychological Nurturance	101.21	9.84	99.25	10.22	101.12	11.08
Family Environment	67.73	6.79	65.50	6.97	65.03	7.32
Authoritative Parenting	37.69	8.19	38.29	7.27	38.65	6.08

<sup>a</sup>n=82, <sup>b</sup>n=318, <sup>c</sup>n=78

Family Resources, Family Psychological Nurturance, Family Environment, and, Authoritative Parenting were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 14.

**Table 14***ANOVA of Family Protective Factors by Child-Risk among Secondary School Pupils*

Family protective factors	Source of variation	Sum of Squares	df	Mean Square	F
Family Resources	Between Groups	1084.41	2	542.21	6.61**
	Within Groups	38956.59	475	82.01	
	Total	40041.01	477		
Family Psychological Nurturance	Between Groups	392.08	2	196.04	1.85
	Within Groups	50403.59	475	106.11	
	Total	50795.66	477		
Family Environment	Between Groups	379.84	2	189.92	3.88**
	Within Groups	23262.15	475	48.97	
	Total	23641.99	477		
Authoritative Parenting	Between Groups	39.32	2	19.66	0.37
	Within Groups	25038.09	475	52.71	
	Total	25077.41	477		

\*\*p &lt; .01

Table 14 shows following results regarding the family protective factors among three child-risk groups, viz., Low, Average, and High. The main effect of child-risk on Family Resources is significant,  $F(2,475) = 6.61$ ,  $p < .01$ . Family Resources of low child-risk group ( $M=71.99$ ,  $SD=6.89$ ) is significantly more in comparison to average child-risk group ( $M=69.52$ ,  $SD=9.18$ ),  $t=2.69$ ,  $p < .05$ ; and high child-risk group ( $M = 66.78$ ,  $SD=10.45$ ),  $t=3.70$ ,  $p < .01$ . Average child-risk group has more Family Resources ( $M=69.52$ ,  $SD=9.18$ ) than high child-risk group ( $M = 66.78$ ,  $SD=10.45$ )  $t=-2.12$ ,  $p < .05$ . Evidently, there is significant decrease in the Family Resources with increase in the level of child-risk.

The main effect of child-risk on Family Psychological Nurturance is not significant,  $F(2,475) = 1.85$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Family Psychological Nurturance.

The main effect of child-risk on Family Environment is significant,  $F(2,475) = 3.88$ ,  $p < .01$ . Family Environment of low child-risk group ( $M=67.73$ ,  $SD=6.79$ ) is significantly superior to that of average child-risk group ( $M=65.50$ ,  $SD=6.97$ ),  $t=2.64$ ,  $p < .05$ , and, high child-risk group ( $M=65.03$ ,  $SD=7.32$ ),  $t= 2.42$ ,  $p < .05$ . There is no significant difference in Family Resources of average ( $M=65.50$ ,  $SD=6.97$ ) and high ( $M=65.03$ ,  $SD=7.32$ ) child-risk groups,  $t=0.51$ ,  $p > .05$ .

The main effect of child-risk on Authoritative Parenting is not significant,  $F(2,475) = 0.37$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Authoritative Parenting.

## **Discussion**

Family Psychological Nurturance and Authoritative Parenting do not significantly differ by the level of child-risk. Family Resources and Family Environment are better ( $p < .05$ ) among low child-risk group than among average and high child-risk groups.

## **Comparison of School Protective Factors by Child-Risk**

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers, in secondary school students differ significantly based on their level (low, average, and high) of risk from within-child source”. For a summary view of the school protective factors in the three levels of child-risk, mean and standard deviation of them are presented in Table 15.

**Table 15**

*Means and Standard Deviations of School Protective Factors by Three Levels of Child-Risk*

School Protective Factors	Groups					
	Low Child- Risk <sup>a</sup>		Average Child- Risk <sup>b</sup>		High Child-Risk <sup>c</sup>	
	Mean	SD	Mean	SD	Mean	SD
Curriculum Adaptation to Student Diversity	55.85	7.50	53.99	6.47	53.40	6.51
Caring Teachers	101.95	16.61	103.20	13.93	100.18	15.14

<sup>a</sup>n=82, <sup>b</sup>n=318, <sup>c</sup>n=78

Curriculum Adaptation to Student Diversity and Caring Teachers were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 16.

**Table 16**

*ANOVA of School Protective Factors by Child-Risk among Secondary School Pupils*

School Protective Factors	Source of variance	SS	df	MS	F
Curriculum Adaptation to Student Diversity	Between Groups	288.34	2	144.17	
	Within groups	21093.90	475	44.41	3.25*
	Total	21382.23	477		
Caring Teachers	Between Groups	599.72	2	299.86	
	Within groups	101328.53	475	213.77	1.40
	Total	101928.25	476		

\*p < .05

Table 16 shows the following results regarding the school protective factors among the three child-risk groups, viz., Low, Average, and High. The main effect of child-risk on Curriculum Adaptation to Student Diversity is significant,  $F(2,475) = 3.25$ ,  $p < .05$ . Curriculum Adaptation to Student Diversity of low child-risk group ( $M=55.85$ ,  $SD=7.50$ ) is significantly high in comparison to average child-risk group

( $M=53.99$ ,  $SD=6.47$ ),  $t=2.06$ ,  $p < .05$ ; and high child-risk group ( $M=53.40$ ,  $SD=6.51$ ),  $t=2.21$ ,  $p < .05$ . There is no significant difference in Curriculum Adaptation to Student Diversity of average ( $M=53.99$ ,  $SD=6.47$ ) and high ( $M=53.40$ ,  $SD=6.51$ ) child-risk groups,  $t=0.72$ ,  $p > .05$ .

The main effect of child-risk on Caring Teachers is not significant,  $F(2,475) = 1.40$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Caring Teachers.

## **Discussion**

Results of one-way ANOVAs of two school protective factors by child-risk showed that low, average, and high child-risk groups differ significantly ( $p < .01$ ) in Curriculum Adaptation to Student Diversity, and do not differ ( $p > .05$ ) significantly in Caring Teachers. The level of child-risk does not make a difference in Caring Teachers. There is significantly higher Curriculum Adaptation to Student Diversity in low-risk students than that in average and high child-risk groups.

### **Difference among Low, Average, and High Child Risk Groups in**

#### **Achievement in School**

Which among the school subjects does significantly differ among the three child-risk groups, viz., low, average, and high? To answer this, mean scores of four school subjects viz., Mathematics, Basic Science, Social Science, and Information Technology were compared, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. For a summary view of students' achievement in school subjects viz., Mathematics, Basic Science, Social Science, and Information Technology, at three levels of child-risk, mean and standard deviation of scores of the four subjects are presented in Table 17.

**Table 17**

*Means and Standard Deviations of Academic Achievement in Select Subjects by Three Levels Child-Risk*

<u>Academic Achievement</u>	<u>Groups</u>					
	<u>Low Child-Risk<sup>a</sup></u>		<u>Average Child-Risk<sup>b</sup></u>		<u>High Child-Risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Mathematics	46.04	14.15	37.80	13.50	38.58	11.80
Basic Science	52.05	14.25	47.84	12.96	49.45	13.83
Social Science	50.51	16.06	42.48	15.32	44.42	13.61
Information Technology	63.99	12.42	62.43	16.07	66.58	13.28

<sup>a</sup>n=37, <sup>b</sup>n=221, <sup>c</sup>n=71

Results of testing the hypotheses that, “Mean achievement scores of each secondary school subject viz., i) Mathematics, ii) Basic Science, iii) Social Science, and iv) Information Technology, significantly differ by the levels (low, average, and high) of risk sourced from within-child” are presented in Table 18.

**Table 18**

*ANOVA of Academic Achievement by Child-Risk among Secondary School Pupils*

Academic achievement	Source of variance	SS	df	MS	F
Mathematics	Between groups	2161.94	2	1080.97	6.18**
	Within groups	57021.83	326	174.91	
	Total	59183.77	328		
Basic Science	Between groups	617.76	2	308.88	1.75
	Within groups	57630.69	326	176.78	
	Total	58248.45	328		
Social Science	Between groups	2080.82	2	1040.41	4.59**
	Within groups	73892.40	326	226.66	
	Total	75973.22	328		
Information Technology	Between groups	936.28	2	468.14	2.04
	Within groups	74732.72	326	229.24	
	Total	75669.00	328		

\*p < .05; \*\*p < .01

Table 18 shows the following results regarding the academic achievement of the four school subjects among the three child-risk groups, viz., Low, Average, and

High. The main effect of child-risk on Mathematics is significant,  $F(2, 326) = 6.18$ ,  $p < .01$ . Follow up test of significance of difference between the means of Mathematics of child-risk revealed the following results. Mathematics achievement of low child-risk group ( $M=46.04$ ,  $SD=14.15$ ) is significantly higher than that of average child-risk group ( $M=37.80$ ,  $SD=13.50$ ),  $t= 3.30$ ,  $p < .01$ ; and high child-risk group ( $M=38.58$ ,  $SD=11.80$ ),  $t= 2.75$ ,  $p < .05$ . There is no significant difference in the Mathematics achievement of average ( $M=37.80$ ,  $SD=13.50$ ) and high ( $M=38.58$ ,  $SD=11.80$ ),  $t= -0.47$ ,  $p > .05$  child-risk groups.

The main effect of child-risk on Basic Science achievement is not significant,  $F(2,326) = 1.75$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Basic Science achievement.

The main effect of child-risk on Social Science achievement is significant,  $F(2, 326) = 4.59$ ,  $p < .01$ . Social Science achievement of low child-risk group ( $M=50.51$ ,  $SD=16.06$ ) is significantly higher than that of the average child-risk group ( $M=42.48$ ,  $SD=15.32$ ),  $t=2.83$ ,  $p < .05$ ; and, high child-risk group ( $M=44.42$ ,  $SD=13.61$ ),  $t =1.97$ ,  $p < .05$ . There is no significant difference between the mean scores of average ( $M=42.48$ ,  $SD=15.32$ ) and high ( $M=44.42$ ,  $SD=13.61$ ) child-risk groups,  $t=-1.01$ ,  $p > .05$ .

The main effect of child-risk on Information Technology achievement is not significant,  $F(2,326) = 2.04$ ,  $p > .05$ . Low, Average, and High child-risk groups do not differ significantly on Basic Science achievement.

## **Discussion**

Results of one-way ANOVAs of academic achievement of four school subjects by child-risk showed that low, average, and high child-risk groups do not differ significantly ( $p > .05$ ) in Basic Science, and Information Technology. The level of child-risk does not make a difference in academic achievement of these school subjects. But Mathematics and Social Science does significantly differ ( $p <$

.01) by child-risk. There is significantly higher academic achievement in Mathematics and Social Science in low child-risk group than that in average child-risk group. It means that high child-risk level lowers the Mathematics and Social Science achievement.

### **Difference among Low, Average, and High Family Risk Groups in Protective Factors**

In order to answer the question ‘which among the select twelve protective factors does significantly differ by the levels (low, average, and high) of risks sourced from family in secondary school students?’ analysis of variance of each protective factor at three levels of risk were carried out. Results are presented under separate headings for within child, family and school protective factors.

#### **Comparison of Within-Child Protective Factors by Family-Risk**

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, in secondary school students differ significantly based on their level (low, average, and high) of risk from family source”. For a summary view of the within-child protective factors in the three levels of family-risk, means and standard deviations of them are presented in Table 19.

**Table 19**

*Means and Standard Deviations of Within-Child Protective Factors by Three Levels of Family-Risk*

<u>Within-child Protective Factors</u>	<u>Groups</u>					
	<u>Low Family-Risk<sup>a</sup></u>		<u>Average Family- Risk<sup>b</sup></u>		<u>High Family- Risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Social Competence	77.80	6.55	74.82	7.19	73.27	6.47
Problem Solving Skill	68.20	6.64	65.73	7.12	63.02	6.50
Critical Consciousness	53.68	4.52	51.86	5.95	50.65	5.47
Autonomy	49.25	4.03	47.42	4.85	46.90	4.46
Sense of Purpose	92.79	5.19	89.78	7.22	87.24	8.08
Peer Support	87.20	5.56	83.45	7.49	80.98	7.34

<sup>a</sup>n=56, <sup>b</sup>n=359, <sup>c</sup>n=63

Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 20.

**Table 20**

*ANOVA of Within-Child Protective Factors by Family-Risk among Secondary School Pupils*

Within-child Protective Factors	Source of variance	SS	df	MS	F
Social Competence	Between groups	638.69	2	319.34	
	Within groups	23448.67	475	49.37	6.47**
	Total	24087.36	477		
Problem Solving Skill	Between groups	802.45	2	401.22	
	Within groups	23208.79	475	48.86	8.21**
	Total	24011.24	477		
Critical Consciousness	Between groups	275.82	2	137.91	
	Within groups	15643.03	475	32.93	4.19**
	Total	15918.85	477		
Autonomy	Between groups	193.65	2	96.82	
	Within groups	10567.57	475	22.25	4.35**
	Total	10761.22	477		
Sense of Purpose	Between groups	911.86	2	455.93	
	Within groups	24174.12	475	50.89	8.96**
	Total	25085.99	477		
Peer Support	Between groups	1162.66	2	581.33	
	Within groups	25097.52	475	52.84	11.00**
	Total	26260.17	477		

\*\*p < .01

Table 20 shows the following results regarding the within-child protective factors among three family-risk groups, viz., Low, Average, and High. The main effect of family-risk on Social Competence is significant,  $F(2,475) = 6.47$ ,  $p < .01$ . Low, Average, and High family-risk groups do differ significantly on Social Competence. Social Competence of low family-risk group ( $M=77.80$ ,  $SD=6.55$ ) is significantly higher than average family-risk group ( $M=74.82$ ,  $SD=7.19$ ),  $t = 3.12$ ,  $p < .01$ ; and high family-risk group ( $M=73.27$ ,  $SD=6.47$ ),  $t = 3.79$ ,  $p < .01$ . There is no

significant difference between the mean scores of average ( $M=74.82$ ,  $SD=7.19$ ) and high ( $M=73.27$ ,  $SD=6.47$ ) family risk groups,  $t=1.72$ ,  $p > .05$ .

The main effect of family-risk on Problem Solving Skill is significant,  $F(2,475) = 8.21$ ,  $p < .01$ . Low, Average, and High family-risk groups do differ significantly on Problem Solving Skill. Problem Solving Skill of low family-risk group ( $M=68.20$ ,  $SD=6.64$ ) is significantly higher than that of average ( $M=65.73$ ,  $SD=7.12$ ) family-risk group,  $t = 2.56$ ,  $p < .05$ ; and high family-risk group ( $M=63.02$ ,  $SD= 6.50$ ),  $t=4.29$ ,  $p < .01$ . Problem Solving Skill of average family-risk group ( $M=65.73$ ,  $SD=7.12$ ) is significantly higher than that of high family-risk group ( $M=63.02$ ,  $SD= 6.50$ ),  $t=3.01$ ,  $p < .01$ .

The main effect of family-risk on Critical Consciousness is significant,  $F(2,475) = 4.19$ ,  $p < .01$ . Low, Average, and High family-risk groups do differ significantly on Critical Consciousness. Critical Consciousness of low family-risk group ( $M=53.68$ ,  $SD=4.52$ ) is significantly higher than that of average ( $M=51.86$ ,  $SD=5.95$ ,  $t=2.67$ ,  $p < .01$ ) and high ( $M= 50.65$ ,  $SD= 5.47$ ,  $t=3.31$ ,  $p < .01$ ) family risk groups. Critical Consciousness of average ( $M=51.86$ ,  $SD=5.95$ ) and high ( $M= 50.65$ ,  $SD= 5.47$ ) family-risk groups do not differ significantly,  $t=1.60$ ,  $p > .05$ .

The main effect of family-risk on Autonomy is significant,  $F(2,475) =4.35$ ,  $p < .05$ . Low, Average, and High family-risk groups do differ significantly on Autonomy. Autonomy of low family-risk group ( $M=49.25$ ,  $SD=4.03$ ) is significantly higher than that of average ( $M=47.42$ ,  $SD=4.85$ ) family-risk group,  $t=3.07$ ,  $p < .01$ ; and high family-risk group ( $M=46.90$ ,  $SD=4.46$ ),  $t=3.02$ ,  $p < .01$ . Autonomy of average ( $M=47.42$ ,  $SD=4.85$ ) and high ( $M=46.90$ ,  $SD=4.46$ ) family-risk groups do not differ significantly,  $t=0.84$ ,  $p > .05$ .

The main effect of family-risk on Sense of Purpose is significant,  $F(2,475) =8.96$ ,  $p < .01$ . Low, Average, and High family-risk groups do differ significantly on Sense of Purpose. Sense of Purpose of low family-risk group ( $M=92.79$ ,  $SD=5.19$ ) is significantly higher than average ( $M=89.78$ ,  $SD=7.22$ ) family-risk group,  $t=3.80$ ,  $p$

< .01; and high family-risk group (M=87.24, SD= 8.08),  $t=4.51$ ,  $p < .01$ . Sense of Purpose of average (M=89.78, SD=7.22) family-risk group is significantly higher than high (M=87.24, SD= 8.08) family-risk group,  $t=2.34$ ,  $p < .05$ .

The main effect of family-risk on Peer Support is significant,  $F(2,475) = 11.00$ ,  $p < .01$ . Peer Support of low family-risk group (M=87.20, SD=5.56) is significantly higher than average (M=83.45, SD=7.49) family-risk group,  $t=4.46$ ,  $p < .01$ ; and high family-risk group (M=80.98, SD= 7.34),  $t=5.24$ ,  $p < .01$ . There is significantly higher Peer Support in average (M=83.45, SD=7.49) family-risk group than high (M=80.98, SD=7.34) family-risk group,  $t= 2.46$ ,  $p < .05$ .

## **Discussion**

Results of one-way ANOVAs of six within-child protective factors by family-risk showed that low, average, and high family-risk groups do differ significantly ( $p < .01$ ) in Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support. The level of family-risk does make a difference in these protective factors. The within-child protective factors are less in average and high family-risk groups than low family-risk group. As the level of family-risk increases the within-child protective factors become less.

## **Comparison of Family Protective Factors by Family-Risk**

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., vii) Family Resources, Viii) Family Psychological Nurturance, ix) Family Environment, and, x) Authoritative Parenting in secondary school students differ significantly based on their level (low, average, and high) of risk from family source”. For a summary view of the family protective factors in three levels of family-risk, means and standard deviations of them are presented in Table 21.

**Table 21**

*Means and Standard Deviations of Family Protective Factors by Three Levels of Family-Risk*

<u>Family Protective Factors</u>	<u>Groups</u>					
	<u>Low Family-Risk<sup>a</sup></u>		<u>Average Family Risk<sup>b</sup></u>		<u>High Family Risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Family Resources	74.86	6.23	69.24	9.12	66.18	9.67
Family Psychological Nurturance	105.57	8.43	99.44	10.25	97.40	10.62
Family Environment	70.08	4.66	65.48	7.08	63.87	7.16
Authoritative Parenting	39.11	8.55	38.25	7.25	37.46	5.93

<sup>a</sup>n=56, <sup>b</sup>n=359, <sup>c</sup>n=63

Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 22.

**Table 22**

*ANOVA of Family Protective Factors by Family-Risk among Secondary School Pupils*

Family protective factors	Source of variation	Sum of Squares	df	Mean Square	F
Family Resources	Between Groups	2327.18	2	1163.59	14.66**
	Within Groups	37713.82	475	79.40	
	Total	40041.01	477		
Family Psychological Nurturance	Between Groups	2272.32	2	1136.16	11.12**
	Within Groups	48523.35	475	102.15	
	Total	50795.66	477		
Family Environment	Between Groups	1298.86	2	649.43	13.81**
	Within Groups	22343.14	475	47.04	
	Total	23641.99	477		
Authoritative Parenting	Between Groups	80.94	2	40.47	0.77
	Within Groups	24996.47	475	52.62	
	Total	25077.41	477		

\*\*p < .01

Table 22 shows the following results regarding the family protective factors among three family-risk groups, viz., Low, Average, and High. The main effect of family-risk on Family Resources is significant,  $F(2,475) = 14.66$ ,  $p < .01$ . Low, Average, and High family-risk groups do differ significantly on Family Resources. Family Resources of low family-risk group ( $M=74.86$ ,  $SD=6.23$ ) is significantly higher than average family-risk group ( $M=69.24$ ,  $SD=9.12$ ),  $t= 5.84$ ,  $p < .01$ ; and high family-risk group ( $M=66.18$ ,  $SD=9.67$ ),  $t = 5.88$ ,  $p < .01$ . Family resources of average risk group ( $M=69.24$ ,  $SD=9.12$ ) is greater than high family-risk group ( $M=66.18$ ,  $SD=9.67$ ),  $t = 2.34$ ,  $p < .05$ .

The main effect of family-risk on Family Psychological Nurturance is significant,  $F(2,475) = 11.12$ ,  $p < .01$ . Low, Average, and High family-risk groups do differ significantly on Family Psychological Nurturance. Family Psychological Nurturance of low family-risk group ( $M=105.57$ ,  $SD=8.43$ ) is significantly high in comparison to average family-risk group ( $M=99.44$ ,  $SD=10.25$ ),  $t=4.91$ ,  $p < .01$ ; and high family-risk group ( $M=97.40$ ,  $SD= 10.62$ ),  $t=4.67$ ,  $p < .01$ . Average ( $M=99.44$ ,  $SD=10.25$ ) family-risk and high ( $M=97.40$ ,  $SD= 10.62$ ) family-risk groups do not differ in Family Psychological Nurturance,  $t= 1.41$ ,  $p > .05$ .

The main effect of family-risk on Family Environment is significant,  $F(2,475) = 13.81$ ,  $p < .01$ . Family Environment of low family-risk group ( $M=70.08$ ,  $SD=4.66$ ) is significantly superior to that of average family-risk group ( $M=65.48$ ,  $SD=7.08$ ),  $t=6.33$ ,  $p < .01$ ; and, high family-risk group ( $M=63.87$ ,  $SD= 7.16$ ),  $t= 5.67$ ,  $p < .01$ . There is no significant difference in Family Environment of average ( $M=65.48$ ,  $SD=7.08$ ) and high ( $M=63.87$ ,  $SD= 7.16$ ) family-risk groups,  $t=1.65$ ,  $p > .05$ .

The main effect of family-risk on Authoritative Parenting is not significant,  $F(2,475) = 0.77$ ,  $p > .05$ . Low, Average, and High family-risk groups do not differ significantly on Authoritative Parenting.

## Discussion

Authoritative Parenting does not significantly differ by the level of family-risk. Family Resources, Family Psychological Nurturance and Family Environment are better ( $p < .05$ ) among low family-risk group than among average and high family-risk groups.

## Comparison of School Protective Factors by Family-Risk

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers, in secondary school students differ significantly based on their level (low, average, and high) of risk from family source”. For a summary view of the school protective factors in the three levels of family-risk, means and standard deviations of them are presented in Table 23.

**Table 23**

*Means and Standard Deviations of School Protective Factors by Three Levels of Family-Risk*

<u>School Protective Factors</u>	<u>Groups</u>					
	<u>Low Child-Risk<sup>a</sup></u>		<u>Average Child-Risk<sup>b</sup></u>		<u>High Child-Risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Curriculum Adaptation to Student Diversity	57.95	5.48	53.72	6.88	53.71	5.56
Caring Teachers	109.48	12.17	101.59	14.74	101.38	14.52

<sup>a</sup>n=56, <sup>b</sup>n=359, <sup>c</sup>n=63

Curriculum Adaptation to Student Diversity and Caring Teachers were compared by the level of family-risk, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 24.

**Table 24**

*ANOVA of School Protective Factors by Family-Risk among Secondary School Pupils*

School Protective Factors	Source of variance	SS	df	MS	F
Curriculum Adaptation to Student Diversity	Between Groups	883.95	2	441.98	
	Within groups	20498.28	475	43.15	10.24**
	Total	21382.23	477		
Caring Teachers	Between Groups	3103.47	2	1551.73	
	Within groups	98824.78	474	208.49	7.44**
	Total	101928.25	476		

\*\* $p < .01$

Table 24 shows the following results regarding the school protective factors among three family-risk groups, viz., Low, Average, and High. The main effect of family-risk on Curriculum Adaptation to Student Diversity is significant,  $F(2,475) = 10.24$ ,  $p < .01$ . Curriculum Adaptation to Student Diversity of low family-risk group ( $M=57.95$ ,  $SD=5.48$ ) is significantly high in comparison to average family-risk group ( $M=53.72$ ,  $SD=6.88$ ),  $t=5.18$ ,  $p < .01$ ; and high family-risk group ( $M=53.71$ ,  $SD= 5.56$ ),  $t=4.18$ ,  $p < .01$ . There is no significant difference in Curriculum Adaptation to Student Diversity of average ( $M=53.72$ ,  $SD=6.88$ ) and high ( $M=53.71$ ,  $SD= 5.55$ ) family-risk groups,  $t=0.01$ ,  $p > .05$ .

The main effect of family-risk on Caring Teachers is significant,  $F(2,475) = 7.44$ ,  $p < .01$ . Low, Average, and High family-risk groups do differ significantly on Caring Teachers. Caring Teachers for low family-risk group ( $M=109.48$ ,  $SD=12.17$ ) is significantly high in comparison to average family-risk group ( $M=101.59$ ,  $SD=14.74$ ),  $t=4.38$ ,  $p < .01$ ; and high family-risk group ( $M=101.38$ ,  $SD= 14.52$ ),  $t=3.31$ ,  $p < .01$ . There is no significant difference in Caring Teachers of average ( $M=101.59$ ,  $SD=14.74$ ) and high ( $M=101.38$ ,  $SD= 14.52$ ) family-risk groups,  $t=0.11$ ,  $p > .05$ .

## Discussion

Results of one-way ANOVAs of two school protective factors by family-risk showed that low, average, and high family-risk groups differ significantly ( $p < .01$ ) in Curriculum Adaptation to Student Diversity, and Caring Teachers. There is significantly higher Curriculum Adaptation to Student Diversity and Caring Teachers in low-risk group than that in average and high family-risk groups.

### Difference among Low, Average, and High Family Risk Groups in Achievement in School

Which among the school subjects does significantly differ among three family-risk groups, viz., Low, Average, and High? To answer this, mean scores of Low, Average, and High family-risk groups on four school subjects viz., Mathematics, Basic Science, Social Science, and Information Technology were compared, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. For a summary view of students' achievement in school subjects viz., Mathematics, Basic Science, Social Science, and Information Technology, at three levels of family-risk, mean and standard deviation of scores of four subjects are presented in Table 25.

**Table 25**

*Means and Standard Deviations of Academic Achievement in Select Subjects by Three Levels of Family-Risk*

Academic Achievement	Groups					
	Low student- risk <sup>a</sup>		Average student risk <sup>b</sup>		High student risk <sup>c</sup>	
	Mean	SD	Mean	SD	Mean	SD
Mathematics	38.81	13.93	39.80	13.70	35.03	11.28
Basic Science	46.46	13.77	49.06	13.53	48.40	12.18
Social Science	44.02	14.74	42.86	15.25	47.72	15.01
Information Technology	60.35	16.68	64.98	15.50	59.18	11.44

<sup>a</sup>n=36, <sup>b</sup>n=238, <sup>c</sup>n=55

Results of testing the hypotheses that, “Mean achievement scores of each secondary school subject viz., i) Mathematics, ii) Basic Science, iii) Social Science, and iv) Information Technology, significantly differ by the levels (low, average, and high) of risk sourced from family” are presented in Table 26.

**Table 26**

*ANOVA of School Subjects by Family-Risk among Secondary School Pupils*

Academic achievement	Source of variance	SS	df	MS	F
Mathematics	Between groups	1016.60	2	508.30	
	Within groups	58167.17	326	178.43	3.01**
	Total	59183.77	328		
Basic Science	Between groups	216.80	2	108.40	
	Within groups	58031.65	326	178.01	0.61
	Total	58248.45	328		
Social Science	Between groups	1056.98	2	528.49	
	Within groups	74916.24	326	229.80	2.30
	Total	75973	328		
Information Technology	Between groups	1904.01	2	952.01	
	Within groups	73764.99	326	226.27	4.21**
	Total	75669.00	328		

\*\*p < .01

Table 26 shows the following results regarding the academic achievement of four school subjects among three family-risk groups, viz., Low, Average, and High. The main effect of family-risk on Mathematics is significant,  $F(2, 326) = 3.01$ ,  $p < .01$ . Low ( $M=38.81$ ,  $SD=13.93$ ) and average ( $M=39.80$ ,  $SD=13.70$ ) family-risk groups do not differ significantly in Mathematics achievement,  $t = -0.40$ ,  $p > .05$ ; and average ( $M=39.80$ ,  $SD=13.70$ ) and high ( $M=35.03$ ,  $SD= 11.28$ ) family-risk groups do not differ significantly in Mathematics achievement,  $t = 1.36$ ,  $p > .05$ . Average ( $M=39.80$ ,  $SD=13.70$ ) family-risk group is superior to high ( $M=35.03$ ,  $SD= 11.28$ ) family-risk group in Mathematics achievement,  $t=2.71$ ,  $p < .01$ .

The main effect of family-risk on Basic Science achievement is not significant,  $F(2,326) = 0.61, p > .05$ . Low, Average, and High family-risk groups do not differ significantly in Basic Science achievement.

The main effect of family-risk on Social Science achievement is not significant,  $F(2, 326) = 2.30, p > .05$ . Low, Average, and High family-risk groups do not differ significantly in Social Science achievement.

The main effect of family-risk on Information Technology achievement is significant,  $F(2,326) = 4.21, p < .01$ . Low ( $M=60.35, SD=16.68$ ) and average ( $M=64.98, SD=15.50$ ) family-risk groups do not differ significantly in Information Technology achievement,  $t = -1.57, p > .05$ ; and average ( $M=64.98, SD=15.50$ ) and high ( $M=59.18, SD= 11.44$ ) family-risk groups do not differ significantly in Information Technology achievement,  $t = 0.37, p > .05$ . Average ( $M=64.98, SD=15.50$ ) family-risk group is superior to high ( $M=59.18, SD= 11.44$ ) family-risk group in Information Technology achievement,  $t = 3.15, p < .05$ .

## **Discussion**

Results of one-way ANOVAs of academic achievement of four school subjects by family-risk showed that low, average, and high family-risk groups do not differ significantly ( $p > .05$ ) in Basic Science, and Social Science. The level of family-risk does not make a difference in academic achievement of these school subjects. But, Mathematics and Information Technology does significantly differ ( $p < .01$ ) by family-risk. There is significantly higher academic achievement in Mathematics and Information Technology in low family-risk group than that in high family-risk group. It means that high family-risk level lowers the Mathematics and Information Technology achievement.

**Difference among Low, Average, and High School Risk Groups  
in Protective Factors**

In order to answer the question ‘which among the select twelve protective factors does significantly differ by the levels (low, average, and high) of risks sourced from school in secondary school students?’ analysis of variance of each protective factor at three levels of school-risk were carried out. Results are presented under separate headings for within child, family and school protective factors.

**Comparison of Within-child Protective Factors by School-Risk**

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, in secondary school students differ significantly based on their level (low, average, and high) of risk from school source”. For a summary view of the within-child protective factors in the three levels of school-risk, mean and standard deviation of them are presented in Table 27.

**Table 27**

*Means and Standard Deviations of Within-Child Protective Factors by Three Levels of School-Risk*

Within child Protective Factors	Groups					
	<u>Low School - risk<sup>a</sup></u>		<u>Average School-risk<sup>b</sup></u>		<u>High School-risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Social Competence	78.34	6.00	74.44	7.22	73.76	6.61
Problem Solving Skill	68.89	6.31	65.24	7.25	64.25	6.21
Critical Consciousness	54.26	4.08	51.84	5.31	49.72	8.18
Autonomy	49.74	3.79	47.11	4.82	47.46	4.76
Sense of Purpose	93.45	4.67	89.11	7.44	89.09	7.52
Peer Support	87.51	5.60	82.95	7.48	82.33	7.61

<sup>a</sup>n=74, <sup>b</sup>n=334, <sup>c</sup>n=69

Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 28.

**Table 28**

*ANOVA of Within-Child Protective Factors by School-Risk among Secondary School Pupils*

Within-child Protective Factors	Source of variance	SS	df	MS	F
Social Competence	Between groups	1032.53	2	516.26	
	Within groups	22973.08	474	48.47	10.65**
	Total	24005.60	476		
Problem Solving Skill	Between groups	969.24	2	484.62	
	Within groups	23039.24	474	48.61	9.97**
	Total	24008.48	476		
Critical Consciousness	Between groups	738.66	2	369.33	
	Within groups	15170.66	474	32.01	11.54**
	Total	15909.32	476		
Autonomy	Between groups	421.63	2	210.82	
	Within groups	10339.40	474	21.81	9.66**
	Total	10761.04	476		
Sense of Purpose	Between groups	1175.88	2	587.94	
	Within groups	23871.53	474	50.36	11.67**
	Total	25047.40	476		
Peer Support	Between groups	1386.32	2	693.16	
	Within groups	24873.53	474	52.48	13.21**
	Total	26259.85	476		

\*\*p < .01

Table 28 shows the following results regarding the within-child protective factors among the three school-risk groups, viz., Low, Average, and High. The main effect of school-risk on Social Competence is significant,  $F(2,474) = 10.65$ ,  $p < .01$ . Social Competence of low school-risk group ( $M=78.34$ ,  $SD=6.00$ ) is significantly

higher than average school-risk group ( $M=74.44$ ,  $SD=7.22$ ),  $t= 4.87$ ,  $p < .01$ ; and high school-risk group ( $M=73.76$ ,  $SD= 6.61$ ),  $t = 4.33$ ,  $p < .01$ . There is no significant difference between the mean scores of average ( $M=74.44$ ,  $SD=7.22$ ) and high ( $M=73.76$ ,  $SD= 6.61$ ) school-risk groups,  $t= 0.77$ ,  $p > .05$ .

The main effect of school-risk on Problem Solving Skill is significant,  $F(2,474) = 9.97$ ,  $p < .01$ . Problem Solving Skill of low school-risk group ( $M=68.89$ ,  $SD=6.31$ ) is significantly higher than average ( $M=65.24$ ,  $SD=7.25$ ) school-risk group,  $t = 4.38$ ,  $p < .01$ ; and high school-risk group ( $M=64.25$ ,  $SD= 6.21$ ),  $t=4.43$ ,  $p < .01$ . There is no significant difference between the mean scores of average ( $M=65.24$ ,  $SD=7.25$ ) and high ( $M=64.25$ ,  $SD= 6.21$ ) school-risk groups,  $t=1.17$ ,  $p > .05$ .

The main effect of school-risk on Critical Consciousness is significant,  $F(2,474) = 11.54$ ,  $p < .01$ . Low, Average, and High school-risk groups do differ significantly on Critical Consciousness. Critical Consciousness of low school-risk group ( $M=54.26$ ,  $SD=4.08$ ) is significantly higher than average ( $M=51.84$ ,  $SD=5.31$ ) school-risk group,  $t=4.35$ ,  $p < .01$ ; and high school-risk group ( $M=49.72$ ,  $SD= 8.18$ ),  $t=4.15$ ,  $p < .01$ . Critical Consciousness of average ( $M=51.84$ ,  $SD=5.31$ ) school-risk group is higher than that of high ( $M=49.72$ ,  $SD= 8.18$ ) school-risk group,  $t=2.06$ ,  $p < .05$ .

The main effect of school-risk on Autonomy is significant,  $F(2,474) =9.66$ ,  $p < .01$ . Autonomy of low school-risk group ( $M=49.74$ ,  $SD=3.79$ ) is significantly higher than average ( $M=47.11$ ,  $SD=4.82$ ) school-risk group,  $t=5.12$ ,  $p < .01$ ; and high school-risk group ( $M=47.46$ ,  $SD= 4.76$ ),  $t=3.15$ ,  $p < .01$ . Autonomy of average ( $M=47.11$ ,  $SD=4.82$ ) and high ( $M=47.46$ ,  $SD= 4.76$ ) school-risk groups do not differ significantly,  $t= -0.55$ ,  $p > .05$ .

The main effect of school-risk on Sense of Purpose is significant,  $F(2,474) =11.67$ ,  $p < .01$ . Sense of Purpose of low school-risk group ( $M=93.45$ ,  $SD=4.67$ ) is significantly higher than average ( $M=89.11$ ,  $SD=7.44$ ) school-risk group,  $t=6.40$ ,  $p$

< .01; and high school-risk group ( $M=89.09$ ,  $SD= 7.52$ ),  $t=4.13$ ,  $p < .01$ . There is no significant difference between the mean scores of average ( $M=89.11$ ,  $SD=7.44$ ) and high ( $M=89.09$ ,  $SD= 7.52$ ) school-risk groups,  $t=0.02$ ,  $p > .05$ .

The main effect of school-risk on Peer Support is significant  $F(2,474) = 13.21$ ,  $p < .01$ . Peer Support of low school-risk group ( $M=87.51$ ,  $SD=5.60$ ) is significantly higher than average ( $M=82.95$ ,  $SD=7.48$ ) school-risk group,  $t=5.93$ ,  $p < .01$ ; and high school-risk group ( $M=82.33$ ,  $SD= 7.61$ ),  $t=4.61$ ,  $p < .01$ . There is no significant difference between the mean Peer Support scores of average ( $M=82.95$ ,  $SD=7.48$ ) and high ( $M=82.33$ ,  $SD= 7.61$ ) school-risk groups,  $t=0.62$ ,  $p > .05$ .

## **Discussion**

Results of one-way ANOVAs of six within-child protective factors by school-risk showed that low, average, and high school-risk groups do differ significantly ( $p < .01$ ) in Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support. The level of school-risk does make a difference in these protective factors. The within-child protective factors are less in average and high school-risk groups than in low school-risk group. When the school-risk increases the within-child protective factors become less in at-risk students.

## **Comparison of Family Protective Factors by School-Risk**

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and, x) Authoritative Parenting, in secondary school students differ significantly based on their level (low, average, and high) of risk from school source”. For a summary view of the scores of the family protective factors in the three levels of school-risk, mean and standard deviation of them are presented in Table 29.

**Table 29**

*Means and Standard Deviations of Family Protective Factors by Three Levels of School-Risk*

<u>Family Protective Factors</u>	<u>Groups</u>					
	<u>Low School-Risk<sup>a</sup></u>		<u>Average School Risk<sup>b</sup></u>		<u>High School Risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Family Resources	74.84	5.43	70.37	7.02	59.46	13.36
Family Psychological Nurturance	105.69	8.03	99.20	10.09	96.82	11.33
Family Environment	69.23	6.13	65.63	6.74	62.99	7.98
Authoritative Parenting	41.40	4.63	37.96	7.39	36.28	7.92

<sup>a</sup>n=74, <sup>b</sup>n=334, <sup>c</sup>n=69

Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting were compared among the groups first using one-way ANOVA and subsequently via post hoc comparison with test of significance of difference between means. The results are presented in Table 30.

**Table 30**

*ANOVA of Family Protective Factors by School-Risk among Secondary School Pupils*

<u>Family protective factors</u>	<u>Source of variation</u>	<u>Sum of Squares</u>	<u>df</u>	<u>Mean Square</u>	<u>F</u>
Family Resources	Between Groups	9311.81	2	4655.90	71.89**
	Within Groups	30698.86	474	64.77	
	Total	40010.67	476		
Family Psychological Nurturance	Between Groups	3304.86	2	1652.43	16.55**
	Within Groups	47318.52	474	99.83	
	Total	50623.38	476		
Family Environment	Between Groups	1427.07	2	713.54	15.23**
	Within Groups	22213.49	474	46.86	
	Total	23640.56	476		
Authoritative Parenting	Between Groups	1028.72	2	514.36	10.14**
	Within Groups	24043.63	474	50.72	
	Total	25072.35	476		

\*\*p < .01

Table 30 shows the following results regarding the family protective factors among three school-risk groups, viz., Low, Average, and High. The main effect of school-risk on Family Resources is significant,  $F(2,474) = 71.89, p < .01$ . Family Resources of low school-risk group ( $M=74.84, SD=5.43$ ) is significantly high in comparison to average school-risk group ( $M=70.37, SD=7.02$ ),  $t=6.05, p < .01$ ; and high school-risk group ( $M=59.46, SD=13.36$ ),  $t=8.90, p < .01$ . Average school-risk group has more Family Resources ( $M=70.37, SD=7.02$ ) than high school-risk group ( $M=59.46, SD=13.36$ ),  $t=6.60, p < .01$ . Evidently, there is significant decrease in the Family Resources with increase in the level of school-risk.

The main effect of school-risk on Family Psychological Nurturance is significant,  $F(2,475) = 16.55, p < .01$ . Low, Average, and High school-risk groups do differ significantly on Family Psychological Nurturance. Family Psychological Nurturance of low school-risk group ( $M=105.69, SD=8.03$ ) is significantly high in comparison to average school-risk group ( $M=99.20, SD=10.09$ ),  $t=5.98, p < .01$ ; and high school-risk group ( $M=96.82, SD=11.33$ ),  $t=5.37, p < .01$ . Average ( $M=99.20, SD=10.09$ ) and high ( $M=96.82, SD=11.33$ ) school-risk groups do not differ in Family Psychological Nurturance,  $t=1.62, p > .05$ .

The main effect of school-risk on Family Environment is significant,  $F(2,475) = 15.23, p < .01$ . Family Environment of low school-risk group ( $M=69.23, SD=6.13$ ) is significantly superior to that of average school-risk group ( $M=65.63, SD=6.74$ ),  $t=4.49, p < .01$ ; and high school-risk group ( $M=62.99, SD=7.98$ ),  $t=5.22, p < .01$ . Family Environment of average school-risk group ( $M=65.63, SD=6.74$ ) is significantly higher than that of the high ( $M=62.99, SD=7.98$ ) school-risk group,  $t=2.57, p < .05$ .

The main effect of school-risk on Authoritative Parenting is significant,  $F(2,475) = 10.14, p < .01$ . Low, Average, and High school-risk groups do differ significantly on Authoritative Parenting. Authoritative Parenting of low school-risk group ( $M=41.40, SD=4.63$ ) is significantly high in comparison to average school-

risk group ( $M=37.96$ ,  $SD=7.39$ ),  $t=5.11$ ,  $p < .01$ ; and high school-risk group ( $M=36.28$ ,  $SD= 7.92$ ),  $t=4.68$ ,  $p < .01$ . Average ( $M=37.96$ ,  $SD=7.39$ ) school-risk and high ( $M=36.28$ ,  $SD= 7.92$ ) school-risk groups do not differ in Authoritative Parenting,  $t= 1.62$ ,  $p > .05$ .

## Discussion

One-way ANOVAs of family protective factors revealed that Family Resources, Family Psychological Nurturance, Family Environment and Authoritative Parenting are better ( $p < .01$ ) among low school-risk group, than among average and high school-risk groups. With the increase in school-risk, the level of family protective factors decreases.

## Comparison of School Protective Factors by School-Risk

This section presents the results of testing the hypotheses that, “Mean scores of protective factors viz., xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers, in secondary school students differ significantly based on their level (low, average, and high) of risk from school source”. For a summary view of the school protective factors in the three levels of school-risk, mean and standard deviation of them are presented in Table 31.

**Table 31**

*Means and Standard Deviations of School Protective Factors by Three Levels of School-Risk*

<u>School Protective Factors</u>	<u>Groups</u>					
	<u>Low Child-Risk<sup>a</sup></u>		<u>Average Child-Risk<sup>b</sup></u>		<u>High Child-Risk<sup>c</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Curriculum Adaptation to Student Diversity	56.91	5.20	54.16	6.61	51.57	7.52
Caring Teachers	108.24	13.53	102.18	14.38	97.77	15.29

<sup>a</sup>n=74, <sup>b</sup>n=334, <sup>c</sup>n=69

Curriculum Adaptation to Student Diversity, and Caring Teachers were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 32.

**Table 32**

*ANOVA of School Protective Factors by School-Risk among Secondary School Pupils*

School Protective Factors	Source of variance	SS	df	MS	F
Curriculum Adaptation to Student Diversity	Between Groups	1021.05	2	510.53	
	Within groups	20360.56	474	42.95	11.89**
	Total	21381.61	476		
Caring Teachers	Between Groups	4017.27	2	2008.64	
	Within groups	97904.67	473	206.99	9.70**
	Total	101921.94	475		

\*\*p < .01

Table 32 shows the following results regarding the school protective factors among three school-risk groups, viz., Low, Average, and High. The main effect of school-risk on Curriculum Adaptation to Student Diversity is significant,  $F(2,474) = 11.89$ ,  $p < .01$ . Curriculum Adaptation to Student Diversity of low school-risk group ( $M=56.91$ ,  $SD=5.20$ ) is significantly high in comparison to average school-risk group ( $M=54.16$ ,  $SD=6.61$ ),  $t=3.90$ ,  $p < .01$ ; and high school-risk group ( $M=51.57$ ,  $SD= 7.52$ ),  $t=4.91$ ,  $p < .01$ . Curriculum Adaptation to Student Diversity of average ( $M=54.16$ ,  $SD=6.61$ ) school-risk group is higher than that of high ( $M=51.57$ ,  $SD= 7.52$ ) school-risk group,  $t=2.66$ ,  $p < .01$ .

The main effect of school-risk on Caring Teachers is significant,  $F(2,475) = 9.70$ ,  $p < .01$ . Low, Average, and High school-risk groups do differ significantly on Caring Teachers. Caring Teachers of low school-risk group ( $M=108.24$ ,  $SD=13.53$ ) is significantly high in comparison to average school-risk group ( $M=102.18$ ,  $SD=14.38$ ),  $t=3.45$ ,  $p < .01$ ; and high school-risk group ( $M=97.77$ ,  $SD= 15.29$ ),

$t=4.32$ ,  $p < .01$ . Caring Teachers of average ( $M=102.18$ ,  $SD=14.38$ ) school-risk group is higher than that of high ( $M=97.77$ ,  $SD= 15.29$ ) school-risk group,  $t=2.20$ ,  $p < .01$ .

## Discussion

Results of one-way ANOVAs of two school protective factors by school-risk showed that low, average, and high school-risk groups differ significantly ( $p < .01$ ) in Curriculum Adaptation to Student Diversity, and Caring Teachers. There is significantly higher Curriculum Adaptation to Student Diversity and Caring Teachers in low-risk group than that in average and high School-risk groups.

### Difference among Low, Average, and High School Risk Groups in Achievement in School

In order to answer the question “which school subjects viz., Mathematics, Basic Science, Social Science, and Information Technology demonstrate significant difference in achievement, based on levels of risk sourced from school in secondary students?”, means and standard deviations of the subjects were compared, first using one-way ANOVA, and subsequently via post hoc comparison with test of significance of difference between means. For a summary view of students’ achievement in school subjects viz., Mathematics, Basic Science, Social Science, and Information Technology, at three levels of school-risk, mean and standard deviation of scores of four subjects are presented in Table 33.

**Table 33**

*Means and Standard Deviations of Academic Achievement in Select Subjects by Three Levels of School-Risk*

Academic Achievement	Groups					
	Low school -risk <sup>a</sup>		Average school- risk <sup>b</sup>		High school- risk <sup>c</sup>	
	Mean	SD	Mean	SD	Mean	SD
Mathematics	40.65	13.34	36.90	12.51	44.61	15.13
Basic Science	50.51	15.60	47.24	12.94	52.30	11.66
Social Science	46.32	16.63	43.01	14.84	44.52	15.24
Information Technology	62.00	16.75	64.24	15.42	62.67	12.38

<sup>a</sup>n=55, <sup>b</sup>n=214, <sup>c</sup>n=59

Results of testing the hypotheses that, “Mean achievement scores of each secondary school subject viz., i) Mathematics, ii) Basic Science, iii) Social Science, and iv) Information Technology, significantly differ by levels (low, average, and high) of risk sourced from school” are presented in Table 34.

**Table 34**

*ANOVA of Academic Achievement in Select Subjects by School-Risk among Secondary School Pupils*

Academic achievement	Source of variance	SS	df	MS	F
Mathematics	Between groups	2953.11	2	1476.56	8.54**
	Within groups	56194.61	325	172.91	
	Total	59147.73	327		
Basic Science	Between groups	1397.50	2	698.75	4.00**
	Within groups	56716.81	325	174.51	
	Total	58114.31	327		
Social Science	Between groups	513.56	2	256.78	1.11
	Within groups	75340.43	325	231.82	
	Total	75853.99	327		
Information Technology	Between groups	279.62	2	139.81	0.61
	Within groups	74711.16	325	229.88	
	Total	74990.78	327		

\*\*p < .01

Table 34 shows the following results regarding the academic achievement of the four school subjects among the three school-risk groups, viz., Low, Average, and High. The main effect of school-risk on Mathematics is significant,  $F(2, 325) = 8.54$ ,  $p < .01$ . Mathematics achievement of low ( $M=40.65$ ,  $SD=13.34$ ) school-risk group and that of average ( $M=36.90$ ,  $SD=12.51$ ) school-risk group do not differ significantly,  $t = 1.88$ ,  $p < .05$ . Average ( $M=36.90$ ,  $SD=12.51$ ) and high ( $M=44.61$ ,  $SD= 15.13$ ) school-risk groups do not differ significantly in Mathematics achievement,  $t = -1.48$ ,  $p > .05$ . Average ( $M=36.90$ ,  $SD=12.51$ ) school-risk group is inferior to high ( $M=44.61$ ,  $SD= 15.13$ ) school-risk group in Mathematics achievement,  $t=-3.59$ ,  $p < .01$ .

The main effect of school-risk on Basic Science achievement is significant,  $F(2,325) = 4.00, p < .01$ . There is no significant difference between mean scores of Basic Science achievement of low ( $M=50.51, SD=15.60$ ) and average ( $M=47.24, SD=12.94$ ) school-risk groups,  $t=1.43, p > .05$ ; and those between low ( $M=50.51, SD=15.60$ ) and high ( $M=52.30, SD= 11.66$ ) school-risk groups,  $t=-0.69, p > .05$ . The mean scores of Basic Science achievement of average ( $M=47.24, SD=12.94$ ) school-risk group is inferior to high ( $M=52.30, SD= 11.66$ ) school-risk group,  $t=-2.88, p < .01$ .

The main effect of school-risk on Social Science achievement is not significant,  $F(2, 325) = 1.11, p > .05$ . Low, Average, and High school-risk groups do not differ significantly in Social Science achievement.

The main effect of school-risk on Information Technology achievement is not significant,  $F(2,325) = 0.61, p < .05$ . Low, Average, and High school-risk groups do not differ significantly in Information Technology achievement.

## **Discussion**

Results of one-way ANOVAs of academic achievement of four school subjects by school-risk showed that low-, average-, and high-, school-risk groups do not differ significantly ( $p > .05$ ) in Social Science, and Information Technology achievement. The level of school-risk does not make a difference in academic achievement of these school subjects. But, Mathematics and Basic Science do significantly differ ( $p < .01$ ) by school-risk. There is significantly higher academic achievement in Basic Science in high school-risk group than that in average school-risk group. Achievement in Mathematics of high risk group is superior to average risk group.

## **Concluding remarks on analysis of survey phase**

The survey was conducted to find out how risk dimensions viz., child-risk, family-risk, and school-risk affect the distribution of within-child protective factors

viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support; family protective factors viz., Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting; and school protective factors viz., Curriculum Adaptation to Student Diversity, and Caring Teachers and how these risk dimensions affect the achievement of Mathematics, Basic Science, Social Science, and Information Technology. Child-risk does not severely affect the protective factors. High child-risk group possess high peer support. When the child-risk increases, the students utilize peer support to demonstrate success in presence of adversity. In case of achievement, high child-risk group achieve low scores. Family-risk negatively affects within-child protective factors, family protective factors, and school protective factors, and achievement of Mathematics, and Information Technology. Students facing risks from parents and family have lesser achievement. The school-risk negatively affect the degree of possession of within-child protective factors, family protective factors, and school protective factors, and achievement of Mathematics and Basic Science.

### **Effectiveness of Collaborative Intervention in Fostering Academic Resilience**

This phase of the analysis tests the effectiveness of the programme in fostering academic resilience among at-risk secondary school students by comparing the effectiveness of FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Family and Child focused intervention for fostering Academic Resilience) in developing academic resilience in terms of protective factors and student achievement. This section answers the following questions. 1) Can FAR (Family focused intervention for fostering Academic Resilience) enhance protective factors and student achievement? 2) Can CAR (Child focused intervention for fostering Academic Resilience) enhance protective factors and student achievement? 3) Can FCAR (Family cum Child focused intervention for fostering Academic Resilience) enhance protective factors and student achievement? 4) Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on gain in each of the

select protective factors? If so, which level of intervention is more effective in enhancing each of the protective factors? 5) Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on enhancing student achievement? If so, which level of intervention is more effective in enhancing student achievement?

Before proceeding into the testing of hypotheses, the distributions of scores on the relevant variables were studied. Equivalence of the experimental and control groups in terms of the mean scores of the relevant variables viz., child-risk, family-risk, total pre-achievement, and mathematics pre-achievement were tested.

### **Distribution of dependent variables and moderator variables**

Essential descriptive statistics like Mean, Median, Mode, Standard Deviation, Skewness, and Kurtosis of all the select variables for the total sample in the experimental phase of the study were calculated, and presented in the Table 35.

**Table 35**

*Descriptive Statistics of the Pre-Test Scores of the Select Variables in the Experimental Phase*

Variables	Mean	Median	Mode	SD	Skewness	Kurtosis
<b>Dependent Variables</b>						
Social Competence	72.68	72	70	6.91	-0.27	0.02
Problem Solving Skill	60.92	62	62	7.43	-0.92	0.83
Critical Consciousness	50.16	50	51	4.66	-0.19	-0.5
Autonomy	47.01	46	46	9.05	1.21	1.52
Sense of Purpose	85.05	86	90	7.83	-0.59	0.13
Peer Support	79.14	79	77	7.51	1.25	5.19
Family Resources	69.17	70	76	8.04	-1.81	6.24
Family Psychological Nurturance	98.03	96	90	12.54	1.14	2.26
Family Environment	63.83	64	62	6.36	-0.28	-0.57
Authoritative Parenting	36.76	39	42	12.27	-0.20	-2.20`
Achievement in Mathematics	4.43	4	4	3.18	0.36	-0.86
<b>Moderator Variables</b>						
Child-Risk	41.24	41	40	10.42	-0.008	-0.22
Family-Risk	31.04	30	30	8.95	0.89	2.30

*N=120*

From table 35 it can be seen that mean, median, and mode of the pre-test scores of dependent variables like Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Peer Support, Family Environment, and achievement test scores of mathematics and moderator variables viz., Child-Risk and Family-Risk do not show much variation in their values. Family Resources, Family Psychological Nurturance, Authoritative Parenting, and Sense of Purpose show slight variation. Distributions of the dependent variables like Critical Consciousness, Family Environment, Authoritative Parenting, Achievement in Mathematics, and Child-Risk are platykurtic and all others are leptokurtic. Distributions of Autonomy, Peer Support, Family Psychological Nurturance, and achievement test scores of Mathematics, and Family-Risk are positively skewed and all others are negatively skewed. Since the dependent variables do not vary seriously from the normal distribution, it was decided to proceed with analysis of variance.

### **Equivalence of the Groups Prior to Intervention**

According to Best and Kahn (2006), ANCOVA permits statistical control for differences on the Pre-test so that differences in the post-test would not be due to initial differences prior to intervention. So investigator used ANCOVA to compare the immediate post-intervention scores of Mathematics. Hence, the differences in the control variables viz., Child-Risk, Family-Risk, Total Pre-Achievement, and Mathematics Pre-Achievement can be statistically controlled, such that post-intervention differences would not be due to initial differences prior to intervention. Equivalence of the experimental and control groups on the dependent and moderator variables prior to intervention were tested.

Mean scores of Child-Risk, Family-Risk, Mathematics pre-achievement, and Total Pre-Achievement among four groups (FAR, CAR, FCAR and control) were compared using one-way ANOVA. For a summary view of the scores of the Child-Risk and Family-Risk, Mathematics Pre-achievement, and Total Pre-achievement, means and standard deviations of them are presented in Table 36.

**Table 36**  
*Means and Standard Deviations of Equating Variables*

<i>Equating Variables</i>	<u>Group</u>							
	<u>Control<sup>a</sup></u>		<u>FAR<sup>b</sup></u>		<u>CAR<sup>c</sup></u>		<u>FCAR<sup>d</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Child-Risk	38.50	10.88	41.87	11.71	44.77	9.12	39.83	9.14
Family-Risk	33.90	8.57	27.90	8.77	31.53	7.35	30.84	10.28
Mathematics pre-achievement	3.87	2.67	3.90	3.27	4.73	2.88	5.20	3.75
Total Pre-Achievement	20.40	10.44	19.60	6.91	22.63	8.38	20.20	7.17

<sup>a</sup>n=30, <sup>b</sup>n=30, <sup>c</sup>n=30, <sup>d</sup>n=30

Child-Risk, Family-Risk, Mathematics Pre-Achievement, and Total Pre-Achievement were compared among control, FAR, CAR, and FCAR groups using one-way ANOVA to check whether there is any difference exists among the groups on equating variables prior to intervention. Results are presented in Table 37.

**Table 37**  
*Results of ANOVA of Variables Used to Equate Groups in Experimental Phase*

<i>Equating Variables</i>	<i>Source of variance</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Child-Risk	Between groups	669.49	3	223.16	2.11
	Within groups	12244.50	116	105.56	
	Total	12913.99	119		
Family-Risk	Between groups	549.68	3	183.23	2.36
	Within groups	8991.06	116	77.51	
	Total	9540.73	119		
Mathematics Pre-achievement	Between groups	38.49	3	12.83	1.28
	Within groups	1164.83	116	10.04	
	Total	1203.33	119		
Total Pre-achievement	Between groups	158.63	3	52.88	0.76
	Within groups	8076.17	116	69.62	
	Total	8234.79	119		

\*p < .05

Table 37 shows the following. Mean scores of Child-Risk does not differ significantly among the control and intervention groups,  $F(3, 116) = 2.11, p > .05$ . Mean scores of Family-Risk does not differ significantly among the control and intervention groups,  $F(3, 116) = 2.36, p > .05$ . Mean scores of Mathematics pre-achievement does not differ significantly among the control and intervention groups,  $F(3, 116) = 1.28, p > .05$ . Mean scores of Total Pre-achievement does not differ significantly among the control and intervention groups,  $F(3, 116) = 0.76, p > .05$ .

### **Discussion**

Results of one-way ANOVA of Child-Risk and Family-Risk, Mathematics Pre-achievement, and Total Pre-achievement revealed that control and intervention groups are experiencing same degree of student risk and family risk, and are equal in their status of mathematics pre-achievement, and total pre-achievement. Hence, the FAR, CAR, FCAR, and Control groups do not show any significant differences before intervention. Raise in achievement in mathematics can be attributed to the intervention for fostering resilience by inculcating protective factors.

### **Gain in Protective Factors by Intervention**

To answer the questions ‘Can FAR, CAR and FCAR enhance protective factors and student achievement?’ and ‘Do the level of intervention (FAR, CAR, and FCAR) differ in their effect on gain in each of the select protective factors? If so, which level of intervention is more effective in enhancing each of the protective factors?’ analysis of variance of each protective factor were carried out. Results are presented under separate headings for within child and family protective factors.

### **Gain in within-child protective factors by intervention**

This section presents the results of testing the hypotheses that, ‘Mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose and vi) Peer Support is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the

control group'. For a summary view of the gain in within-child protective factors in the four groups, means and standard deviations of them are presented in Table 38.

**Table 38**

*Means and Standard Deviations of Gain in Within-Child Protective Factors in the Control, FAR, CAR, and FCAR Groups*

<u>Within-child Protective Factors</u>	<u>Groups</u>							
	<u>Control<sup>a</sup></u>		<u>FAR<sup>b</sup></u>		<u>CAR<sup>c</sup></u>		<u>FCAR<sup>d</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Social Competence	14.63	5.27	14.70	6.34	17.48	6.87	21.00	7.70
Problem Solving Skill	20.27	9.35	17.07	6.55	19.93	7.77	23.63	8.61
Critical Consciousness	14.93	5.82	17.47	6.39	18.00	5.57	21.77	4.45
Autonomy	12.83	4.56	11.50	4.15	12.41	5.31	17.47	4.98
Sense of Purpose	17.55	6.56	16.00	6.73	23.48	7.07	22.67	5.40
Peer Support	16.10	5.54	14.60	5.27	19.66	6.65	21.40	8.14

<sup>a</sup>n=30, <sup>b</sup>n=30, <sup>c</sup>n=30, <sup>d</sup>n=30

Gain in Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 39.

**Table 39***ANOVA of Gain Scores of Within-Child Protective Factors by Intervention*

Within-child Protective Factors	Source of variance	SS	df	MS	F
Social Competence	Between groups	813.19	3	271.06	6.22**
	Within groups	5010.51	115	43.57	
	Total	5823.70	118		
Problem Solving Skill	Between groups	650.31	3	216.77	3.27**
	Within groups	7620.56	115	66.27	
	Total	8270.87	118		
Critical Consciousness	Between groups	716.09	3	238.70	7.60**
	Within groups	3610.70	115	31.40	
	Total	4326.79	118		
Autonomy	Between groups	639.11	3	213.04	9.39**
	Within groups	2610.17	115	22.70	
	Total	3249.28	118		
Sense of Purpose	Between groups	1218.07	3	406.02	9.72**
	Within groups	4763.08	115	41.78	
	Total	5981.15	118		
Peer Support	Between groups	880.67	3	293.56	6.96**
	Within groups	4853.65	115	42.21	
	Total	5734.32	118		

\*\*p &lt; .01

Table 39 shows the following results regarding the effect of intervention on within-child protective factors in total sample. The main effect of intervention on Social Competence is significant,  $F(3,115) = 6.22$ ,  $p < .01$ . Social Competence of FAR group ( $M = 14.70$ ,  $SD = 6.34$ ) and control group ( $M = 14.63$ ,  $SD = 5.27$ ) do not differ significantly in the mean gain scores,  $t = -0.05$ ,  $p > .05$ . Mean gain score of Social Competence of CAR group ( $M = 17.48$ ,  $SD = 6.87$ ) is significantly higher than that of the control group ( $M = 14.63$ ,  $SD = 5.27$ ),  $t = -1.80$ ,  $p < .05$ . Mean gain score of Social Competence of FCAR group ( $M = 21.00$ ,  $SD = 7.70$ ) is significantly higher than that of the control group ( $M = 14.63$ ,  $SD = 5.27$ ),  $t = -3.74$ ,  $p < .01$ . Mean gain score of Social Competence of the FAR group ( $M = 14.70$ ,  $SD = 6.34$ ) and CAR group ( $M = 17.48$ ,  $SD = 6.87$ ),  $t = -1.63$ ,  $p > .05$  do not differ significantly. Mean gain score of Social Competence of FCAR group ( $M = 21.00$ ,  $SD = 7.70$ ) is significantly higher than that of the FAR group ( $M = 14.70$ ,  $SD = 6.34$ ),  $t = -3.46$ ,  $p <$

.01. There is no significant difference between mean gain scores of Social Competence of FCAR group ( $M= 21.00$ ,  $SD= 7.70$ ) and CAR group ( $M= 17.48$ ,  $SD= 6.87$ ) and,  $t= -1.85$ ,  $p > .05$ .

The main effect of intervention on Problem Solving Skill is significant,  $F(3,115) = 3.27$ ,  $p < .01$ . Mean gain scores of Problem Solving Skill of FAR group ( $M= 17.07$ ,  $SD= 6.55$ ) and control group ( $M=20.27$ ,  $SD=9.35$ ),  $t= 1.54$ ,  $p > .05$ ; CAR group ( $M= 19.93$ ,  $SD= 7.77$ ) and control group ( $M=20.27$ ,  $SD=9.35$ ),  $t= 0.15$ ,  $p > .05$ ; and FCAR group ( $M= 23.63$ ,  $SD= 8.61$ ) and control group ( $M=20.27$ ,  $SD=9.35$ ),  $t= -1.45$ ,  $p > .05$  do not differ significantly. Problem Solving Skill of the FAR group ( $M= 17.07$ ,  $SD= 6.55$ ) and CAR group ( $M= 19.93$ ,  $SD= 7.77$ ),  $t= -1.54$ ,  $p > .05$  do not differ significantly in the mean gain scores. Mean gain score of Problem Solving Skill of FCAR group ( $M= 23.63$ ,  $SD= 8.61$ ) is significantly higher than FAR group ( $M= 17.07$ ,  $SD= 6.55$ ),  $t= -3.32$ ,  $p < .01$ . There is no significant difference between mean gain scores of Problem Solving Skill of FCAR group ( $M= 23.63$ ,  $SD= 8.61$ ) and CAR group ( $M= 19.93$ ,  $SD= 7.77$ ),  $t= -1.75$ ,  $p > .05$ .

The main effect of intervention on Critical Consciousness is significant,  $F(3,115) = 7.60$ ,  $p < .01$ . There is no significant difference between the mean gain score of Critical Consciousness of FAR ( $M= 17.47$ ,  $SD= 6.39$ ) group and that of control ( $M= 14.93$ ,  $SD= 5.82$ ) group,  $t= -1.61$ ,  $p > .05$ . The mean gain score of Critical Consciousness of CAR ( $M= 18.00$ ,  $SD= 5.57$ ) group is significantly higher than that of control ( $M= 14.93$ ,  $SD= 5.82$ ) group,  $t= -2.09$ ,  $p < .05$ . Mean gain score of Critical Consciousness of FCAR ( $M= 21.77$ ,  $SD= 4.45$ ) group is significantly higher than that of control ( $M= 14.93$ ,  $SD= 5.82$ ) group,  $t= -5.11$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Critical Consciousness of FAR ( $M= 17.47$ ,  $SD= 6.39$ ) and CAR ( $M= 18.00$ ,  $SD= 5.57$ ) groups,  $t= -0.34$ ,  $p > .05$ . Mean gain score of Critical Consciousness of FCAR ( $M= 21.77$ ,  $SD= 4.45$ ) group is significantly higher than that of the FAR ( $M= 17.47$ ,  $SD= 6.39$ ),  $t= -3.02$ ,  $p < .01$ ; and mean gain score of Critical Consciousness of

FCAR (M= 21.77, SD= 4.45) group is significantly higher than that of the CAR (M= 18.00, SD= 5.57) group  $t = -2.90$ ,  $p < .05$ .

The main effect of intervention on Autonomy is significant,  $F(3,115) = 9.39$ ,  $p < .01$ . There is no significant difference between the mean gain score of Autonomy of FAR (M= 11.50, SD= 4.15) group and that of control (M= 12.83, SD= 4.56) group,  $t = 1.18$ ,  $p > .05$ . There is no significant difference between the mean gain score of Autonomy of CAR (M= 12.41, SD= 5.31) group and control (M= 12.83, SD= 4.56) group,  $t = 0.33$ ,  $p > .05$ . The mean gain score of Autonomy of FCAR (M= 17.47, SD= 4.98) group is significantly higher than that of the control (M= 12.83, SD= 4.56) group,  $t = -3.76$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Autonomy of FAR (M= 11.50, SD= 4.15) and CAR (M= 12.41, SD= 5.31) groups,  $t = -0.74$ ,  $p > .05$ . The mean gain score of Autonomy of FCAR (M= 17.47, SD= 4.98) group is significantly higher than that of the FAR (M= 11.50, SD= 4.15) group,  $t = -5.04$ ,  $p < .05$ . Mean gain score of Autonomy of FCAR (M= 17.47, SD= 4.98) group is significantly higher than that of the CAR (M= 12.41, SD= 5.31) group,  $t = -3.81$ ,  $p < .01$ .

The main effect of intervention on Sense of Purpose is significant,  $F(3,115) = 9.72$ ,  $p < .01$ . There is no significant difference between the mean gain score of Sense of Purpose of FAR (M= 16.00, SD= 6.73) group and control (M= 17.55, SD= 6.56) group,  $t = 0.90$ ,  $p > .05$ . The mean gain score of Sense of Purpose of CAR (M= 23.48, SD= 7.07) group is significantly higher than that of the control (M= 17.55, SD= 6.56) group,  $t = -3.37$ ,  $p < .01$ . The mean gain score of Sense of Purpose of FCAR (M= 22.67, SD= 5.40) group is significantly higher than that of the control (M= 17.55, SD= 6.56) group,  $t = -3.30$ ,  $p < .01$ . The mean gain score of Sense of Purpose of CAR (M= 23.48, SD= 7.07) group is significantly higher than that of FAR (M= 16.00, SD= 6.73) group,  $t = -4.20$ ,  $p < .01$ , and mean gain score of Sense of Purpose of FCAR (M= 22.67, SD= 5.40) group is significantly higher than that of FAR (M= 16.00, SD= 6.73) group,  $t = -4.23$ ,  $p < .01$ . There is no

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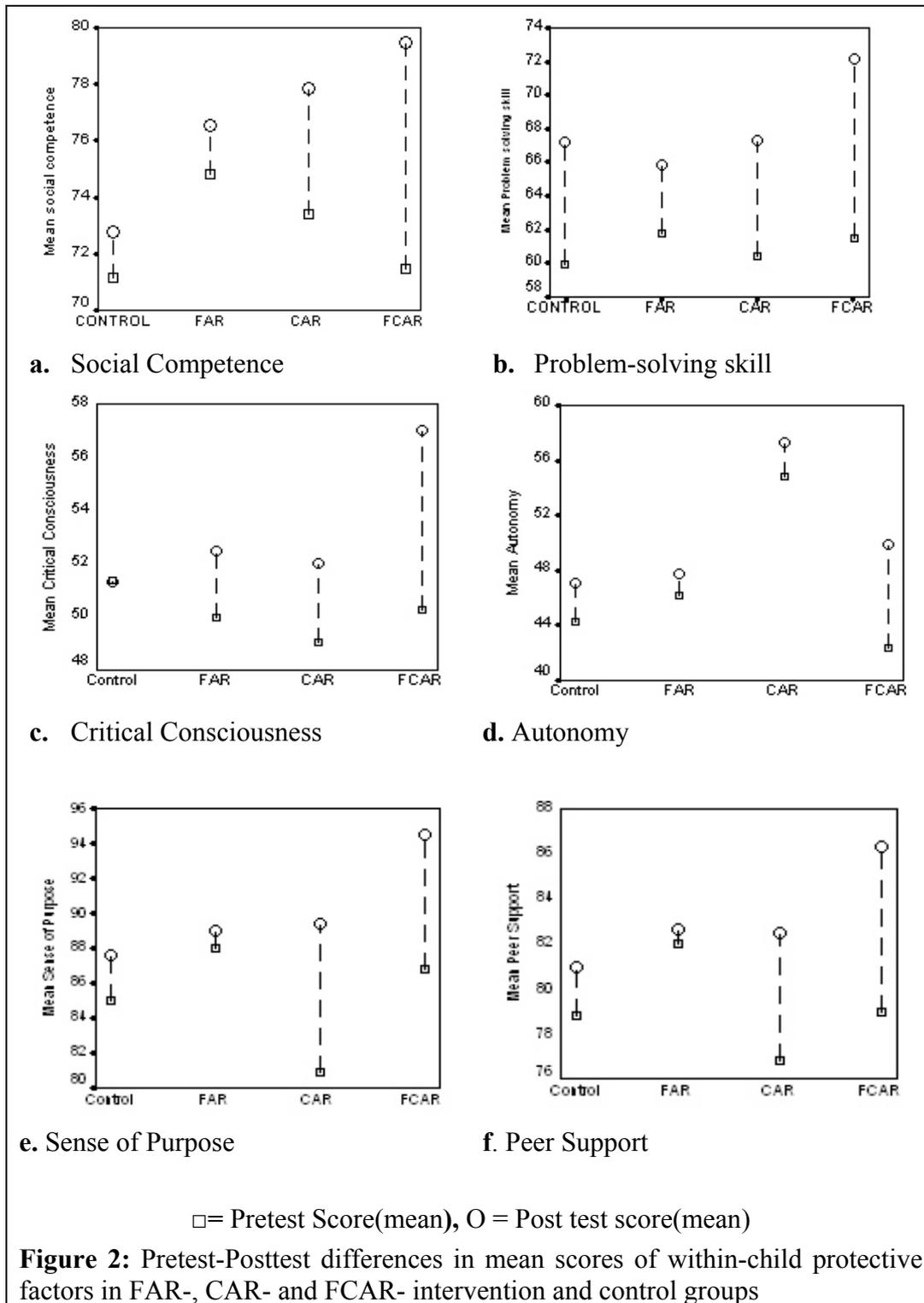
significant difference between mean gain scores of Sense of Purpose of CAR (M= 23.48, SD= 7.07) group and FCAR (M=22.67, SD= 5.40) group,  $t= 0.50$ ,  $p > .05$ .

The main effect of intervention on Peer Support is significant,  $F(3,115) = 6.96$ ,  $p < .01$ . There is no significant difference between the mean gain score of Peer Support of FAR (M= 14.60, SD= 5.27) group and control (M= 16.10, SD= 5.54) group,  $t= 1.07$ ,  $p > .05$ . The mean gain score of Peer Support of CAR (M= 19.66, SD= 6.65) group is significantly higher than that of control (M= 16.10, SD= 5.54) group,  $t= -2.25$ ,  $p < .05$ . Mean gain score of Peer Support of FCAR (M= 21.40, SD= 8.14) group is significantly higher than that of control (M= 16.10, SD= 5.54) group,  $t= -2.95$ ,  $p < .05$ . The mean gain score of Peer Support of CAR (M= 19.66, SD= 6.65) group is significantly higher than that of FAR (M= 14.60, SD= 5.27),  $t= -3.27$ ,  $p < .05$ . Mean gain score of Peer Support of FCAR (M= 21.40, SD= 8.14) group is significantly higher than that of FAR (M= 14.60, SD= 5.27) group,  $t= -3.84$ ,  $p < .05$ . There is no significant difference between the mean gain scores of Peer Support of CAR (M= 19.66, SD= 6.65) group and FCAR (M= 21.40, SD= 8.14) group,  $t= -0.91$ ,  $p > .05$ .

### **Discussion**

All the six protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support differ significantly ( $p < .01$ ) among FAR, CAR, FCAR and control groups i.e., intervention made significant gain in the protective factors. FAR and control groups do not differ in any of the six within-child protective factors i.e., FAR has no significant effect on fostering the within-child protective factors. CAR is effective in fostering protective factors viz., Social Competence, Critical Consciousness, Sense of Purpose, and Peer Support. CAR has no significant effect on fostering Problem Solving Skill and Autonomy. FCAR has significant effect on fostering Social Competence, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support, and has no effect on fostering Problem Solving Skill. CAR is more effective in fostering protective factors viz., Sense of Purpose, and Peer Support than FAR. FCAR is more effective

in fostering all the six within-child protective factors than FAR. FCAR is more effective in fostering Critical Consciousness and Autonomy than CAR. A summary view of the gain in within-child protective factors is presented in Figure 2.



### Gain in family protective factors by intervention

This section presents the results of testing the hypotheses that, ‘Mean gain score of each of the protective factor viz., vii) Family Resources, Viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting, are significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in control group’. For a summary view of the gain in family protective factors in the four groups, mean and standard deviation of them are presented in Table 40.

**Table 40**

*Means and Standard Deviations of Gain in Family Protective Factors in the Control, FAR, CAR, and FCAR Groups*

Family Protective Factors	Group							
	Control <sup>a</sup>		FAR <sup>b</sup>		CAR <sup>c</sup>		FCAR <sup>d</sup>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Family Resources	16.67	7.08	20.87	4.75	23.86	10.24	25.07	6.56
Family Psychological Nurturance	17.17	8.77	25.10	7.95	27.39	14.38	30.00	7.01
Family Environment	12.94	4.72	14.54	5.00	23.46	9.32	15.17	4.11
Authoritative Parenting	9.27	3.08	8.27	3.35	7.43	4.20	27.77	9.54

<sup>a</sup>n=30, <sup>b</sup>n=30, <sup>c</sup>n=30, <sup>d</sup>n=30

Gain in Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 41.

**Table 41***ANOVA of Gain Scores of Family Protective Factors by Intervention*

Family Protective Factors	Source of variation	Sum of Squares	df	Mean Square	F
Family Resources	Between Groups	1249.38	3	416.46	7.67**
	Within Groups	6191.43	114	54.31	
	Total	7440.81	117		
Family Psychological Nurturance	Between Groups	2749.04	3	916.35	9.44**
	Within Groups	11071.83	114	97.12	
	Total	13820.88	117		
Family Environment	Between Groups	1904.81	3	634.94	17.22**
	Within Groups	4204.56	114	36.88	
	Total	6109.36	117		
Authoritative Parenting	Between Groups	8491.81	3	2830.60	86.79**
	Within Groups	3717.96	114	32.61	
	Total	12209.77	117		

\*\*p &lt; .01

Table 41 shows the following results regarding the effect of intervention on family protective factors in total sample. The main effect of intervention on Family Resources is significant,  $F(3,114) = 7.67$ ,  $p < .01$ . The mean gain score of Family Resources of FAR ( $M = 20.87$ ,  $SD = 4.75$ ) group is significantly higher than that of control ( $M = 16.67$ ,  $SD = 7.08$ ) group,  $t = -2.70$ ,  $p < .05$ . Mean gain score of CAR ( $M = 23.86$ ,  $SD = 10.24$ ) group is significantly higher than that of control ( $M = 16.67$ ,  $SD = 7.08$ ) group,  $t = -3.16$ ,  $p < .01$ . Mean gain score of FCAR ( $M = 25.07$ ,  $SD = 6.56$ ) group is significantly higher than that of control ( $M = 16.67$ ,  $SD = 7.08$ ) group,  $t = -4.77$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Family Resources of FAR ( $M = 20.87$ ,  $SD = 4.75$ ) and CAR ( $M = 23.86$ ,  $SD = 10.24$ ) groups,  $t = -1.45$ ,  $p > .05$ . Mean gain score of Family Resources of FCAR ( $M =$

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25.07, SD= 6.56) group is significantly higher than that of FAR (M= 20.87, SD= 4.75) group,  $t = -2.84$ ,  $p < .05$ . On gain in Family Resources, there is no significant difference between CAR (M= 23.86, SD= 10.24) group and FCAR (M= 25.07, SD= 6.56) group,  $t = -0.54$ ,  $p > .05$ .

The main effect of intervention on Family Psychological Nurturance is significant,  $F(3,114) = 9.44$ ,  $p < .01$ . The mean gain score of Family Psychological Nurturance of FAR (M= 25.10, SD= 7.95) group is significantly higher than that of control (M= 17.17, SD= 8.77) group,  $t = -3.67$ ,  $p < .01$ . Mean gain score of CAR (M= 27.39, SD= 14.38) group is significantly higher than that of control (M= 17.17, SD= 8.77) group,  $t = -3.32$ ,  $p < .01$ . Mean gain score of FCAR (M= 30.00, SD= 7.01) group is significantly higher than that of control (M= 17.17, SD= 8.77) group,  $t = -6.26$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Family Psychological Nurturance of FAR (M= 25.10, SD= 7.95) and CAR (M= 27.39, SD= 14.38) groups,  $t = -0.76$ ,  $p > .05$ . Mean gain score of Family Psychological Nurturance of FCAR (M= 30.00, SD= 7.01) group is significantly higher than that of FAR (M= 25.10, SD= 7.95) group,  $t = -2.53$ ,  $p < .05$ . There is no significant difference between mean gain scores of Family Psychological Nurturance of CAR (M= 27.39, SD= 14.38) group and FCAR (M= 30.00, SD= 7.01) group,  $t = -0.89$ ,  $p > .05$ .

The main effect of intervention on Family Environment is significant,  $F(3,114) = 17.22$ ,  $p < .01$ . There is no significant difference between the mean gain score of Family Environment of FAR (M= 14.54, SD= 5.00) group and that of control (M= 12.94, SD= 4.72) group,  $t = -1.27$ ,  $p > .05$ . Mean gain score of Family Environment of CAR (M= 23.46, SD= 9.32) group is significantly higher than that of control (M= 12.94, SD= 4.72) group,  $t = -5.52$ ,  $p < .05$ . Mean gain score of FCAR (M= 15.17, SD= 4.11) group is significantly higher than that of control (M= 12.94, SD= 4.72) group,  $t = -1.95$ ,  $p < .05$ . The mean gain scores of Family Environment of CAR (M= 23.46, SD= 9.32) group is significantly higher than that of FAR (M= 14.54, SD= 5.00) group,  $t = -4.62$ ,  $p < .05$ . There is no significant

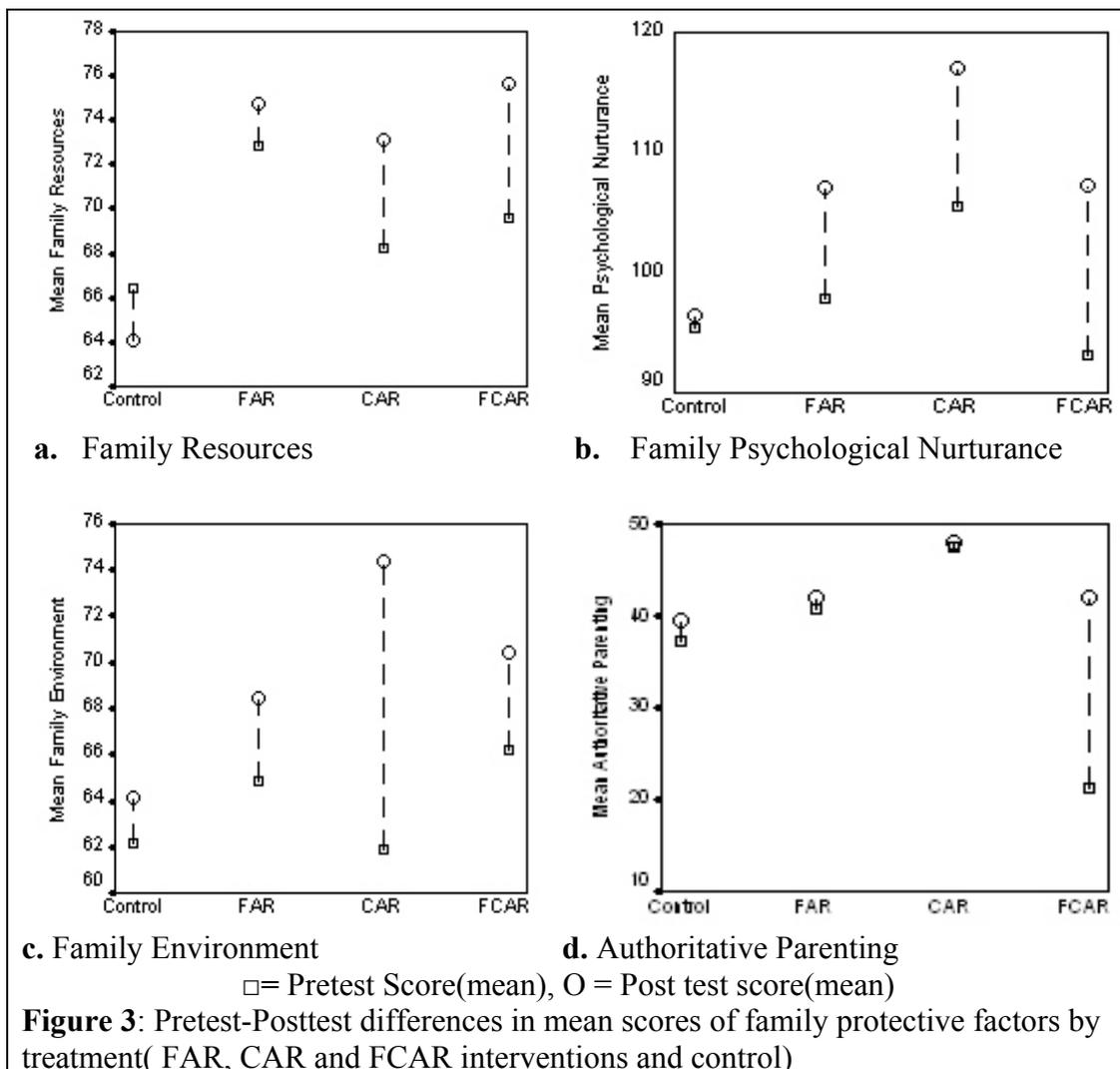
difference between mean gain scores of Family Environment of FAR ( $M= 14.54$ ,  $SD= 5.00$ ) and FCAR ( $M= 15.17$ ,  $SD= 4.11$ ) groups,  $t= -0.53$ ,  $p > .05$ . The mean gain score of Family Environment of CAR ( $M= 23.46$ ,  $SD= 9.32$ ) group is significantly higher than that of FCAR ( $M= 15.17$ ,  $SD= 4.11$ ) group,  $t= 4.46$ ,  $p < .05$ .

The main effect of intervention on Authoritative Parenting is significant,  $F(3,114) = 86.79$ ,  $p < .01$ . There is no significant difference between the mean gain score of Authoritative Parenting of FAR ( $M= 8.27$ ,  $SD= 3.35$ ) group and that of control ( $M= 9.27$ ,  $SD= 3.08$ ) group,  $t= 1.20$ ,  $p > .05$ . There is no significant gain in the mean score of Authoritative Parenting of CAR ( $M= 7.43$ ,  $SD= 4.20$ ) group than that of control ( $M= 9.27$ ,  $SD= 3.08$ ) group,  $t= 1.94$ ,  $p > .05$ . The mean gain score of FCAR ( $M= 27.77$ ,  $SD= 9.54$ ) group is significantly higher than that of control ( $M= 9.27$ ,  $SD= 3.08$ ) group,  $t= -10.11$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Authoritative Parenting of FAR ( $M= 8.27$ ,  $SD= 3.35$ ) and CAR ( $M= 7.43$ ,  $SD= 4.20$ ) groups,  $t= 0.86$ ,  $p > .05$ . Mean gain score of Authoritative Parenting of FCAR ( $M= 27.77$ ,  $SD= 9.54$ ) group is significantly higher than that of FAR ( $M= 8.27$ ,  $SD= 3.35$ ) group,  $t= -10.56$ ,  $p < .01$ . Mean gain score of Authoritative Parenting of FCAR ( $M= 27.77$ ,  $SD= 9.54$ ) group is significantly higher than that of CAR ( $M= 7.43$ ,  $SD= 4.20$ ) group,  $t= -10.69$ ,  $p < .01$ .

## Discussion

ANOVAs of mean gain scores of family protective factors revealed that all the four family protective factors viz., Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting differ significantly ( $p < .01$ ) among the FAR, CAR, FCAR and control groups i.e., the intervention has a significant effect on fostering the family protective factors. FAR and control groups differ in two family protective factors viz., Family Resources and Family Psychological Nurturance i.e., FAR has significant effect on fostering these family protective factors; it has no effect on fostering Family Environment and Authoritative Parenting. CAR is effective in fostering protective factors viz., Family

Resources, Family Psychological Nurturance, and Family Environment. FCAR and control groups differ in all the four family protective factors viz., Family Resources and Family Psychological Nurturance, Family Environment, and Authoritative Parenting i.e., FCAR has significant effect in fostering these family protective factors. CAR is more effective in fostering the protective factor, Family Environment, than FAR and FCAR. FCAR is more effective in fostering the protective factors viz., Family Resources, Family Psychological Nurturance, and Authoritative Parenting FAR. FCAR is more effective in fostering the protective factor, Authoritative Parenting, and CAR is more effective in fostering the protective factor, Family Environment. A summary view of the gain in family protective factors is presented in Figure 3.



### Gain in achievement by intervention

To answer the questions, ‘Can FAR, CAR and FCAR enhance student achievement?’ ‘Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on enhancing student achievement? If so, which level of intervention is more effective in enhancing student achievement?’, analysis of variance of immediate and delayed post test achievement scores were carried out. For a summary view of the scores of the immediate and delayed post-intervention achievement in the control, FAR, CAR, and FCAR groups, mean and standard deviation of them are presented in Table 42.

**Table 42**

*Means and Standard Deviations of Post-Intervention Achievement Scores of Mathematics among Control, FAR, CAR, and FCAR Groups*

Academic Achievement	Group							
	Control <sup>a</sup>		FAR <sup>b</sup>		CAR <sup>c</sup>		FCAR <sup>d</sup>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Immediate Achievement in Mathematics	24.97	4.74	27.10	6.52	28.07	7.11	31.87	7.31
Delayed Achievement in Mathematics	31.70	2.72	44.70	2.76	34.31	6.77	37.23	9.51

<sup>a</sup>n=30, <sup>b</sup>n=30, <sup>c</sup>n=30, <sup>d</sup>n=30

Results of one-way ANOVA of immediate and delayed post-intervention achievement in Mathematics of control, FAR, CAR, and FCAR groups are given in Table 43.

**Table 43***ANOVA of Immediate and Delayed Post-Intervention Achievement in Mathematics*

Academic achievement	Source of variance	SS	df	MS	F
Immediate Achievement in Mathematics	Between groups	749.00	3	249.67	5.91**
	Within groups	4901.00	116	42.25	
	Total	5650.00	119		
Delayed Achievement in Mathematics	Between groups	2832.82	3	944.27	25.01**
	Within groups	4342.17	115	37.76	
	Total	7174.99	118		

\*\* $p < .01$ 

Table 43 shows the following results regarding the effect of intervention on Mathematics achievement in total sample. The main effect of intervention on immediate achievement in Mathematics is significant,  $F(3, 116) = 5.91$ ,  $p < .01$ . There is no significant difference between the mean immediate post-intervention score (immediate post-test scores) of Mathematics Achievement of FAR ( $M = 27.10$ ,  $SD = 6.52$ ) group and that of control ( $M = 24.97$ ,  $SD = 4.74$ ) group,  $t = -1.45$ ,  $p > .05$ . Immediate post-test score of Mathematics Achievement CAR ( $M = 28.07$ ,  $SD = 7.11$ ) group is significantly higher than that of the control ( $M = 24.97$ ,  $SD = 4.74$ ) group,  $t = -1.99$ ,  $p < .05$ . Mean immediate post-test score of Mathematics Achievement of FCAR ( $M = 31.87$ ,  $SD = 7.31$ ) group is significantly higher than that of control ( $M = 24.97$ ,  $SD = 4.74$ ) group,  $t = -4.34$ ,  $p < .01$ . There is no significant difference between the mean immediate post-intervention scores of Mathematics Achievement of FAR ( $M = 27.10$ ,  $SD = 6.52$ ) and CAR ( $M = 28.07$ ,  $SD = 7.11$ ) groups,  $t = -0.55$ ,  $p > .05$ . Mean immediate post-test score of Mathematics Achievement of FCAR ( $M = 31.87$ ,  $SD = 7.31$ ) group is significantly higher than that of FAR ( $M = 27.10$ ,  $SD = 6.52$ )  $t = -2.67$ ,  $p < .05$ . Mean immediate post-test score of Mathematics Achievement of FCAR ( $M = 31.87$ ,  $SD = 7.31$ ) group is significantly higher than that of CAR ( $M = 28.07$ ,  $SD = 7.11$ ) group,  $t = -2.04$ ,  $p < .05$ .

The main effect of intervention on delayed achievement in Mathematics is significant,  $F(3, 115) = 25.01, p < .01$ . Mean delayed post-test score of Mathematics Achievement of FAR ( $M = 44.70, SD = 2.76$ ) group is significantly higher than that of control ( $M = 31.70, SD = 2.72$ ) group,  $t = -18.37, p < .01$ . Delayed post-test score of Mathematics Achievement of CAR ( $M = 34.31, SD = 6.77$ ) group is significantly higher than that of control ( $M = 31.70, SD = 2.72$ ) group,  $t = -1.96, p < .05$ . Delayed post-test score of Mathematics Achievement of FCAR ( $M = 37.23, SD = 9.51$ ) group is significantly higher than that of control ( $M = 31.70, SD = 2.72$ ) group,  $t = -3.06, p < .01$ . Mean delayed post-test score of Mathematics Achievement of FAR ( $M = 44.70, SD = 2.76$ ) group is significantly higher than that of CAR ( $M = 34.31, SD = 6.77$ ) group,  $t = 7.78, p < .01$ . Mean delayed post-test score of Mathematics Achievement of FAR ( $M = 44.70, SD = 2.76$ ) is significantly higher than that of FCAR ( $M = 37.23, SD = 9.51$ ) group,  $t = 4.13, p < .01$ . There is no significant difference between mean delayed post-test score of Mathematics Achievement of CAR ( $M = 34.31, SD = 6.77$ ) group and FCAR ( $M = 37.23, SD = 9.51$ ) group,  $t = -1.37, p > .05$ .

### **Discussion**

Control and intervention groups differ in their mean immediate post-intervention scores of Mathematics Achievement. FAR has no effect on enhancing the immediate Mathematics Achievement. CAR and FCAR have significant effect on enhancing immediate Mathematics Achievement. FAR and CAR do not differ in their effect on enhancing the immediate Mathematics Achievement. FCAR is more effective in promoting immediate Mathematics Achievement.

Control and intervention groups differ in their delayed post-intervention scores of Mathematics Achievement. FAR, CAR, and FCAR have significant effect on enhancing the delayed Mathematics Achievement. FAR is most effective on enhancing the delayed Mathematics Achievement than CAR and FCAR. CAR and FCAR do not differ in promoting delayed Mathematics Achievement.

**Effectiveness of Collaborative Intervention in Fostering Academic Resilience  
by Levels of Child and Family Risk**

This phase of the analysis tests the effectiveness of the programme in fostering academic resilience among secondary school students at High and Low levels of Child-Risk and at High and Low levels of Family-Risk. This is done by comparing the effectiveness of FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Family cum Child focused intervention for fostering Academic Resilience) in developing academic resilience in terms of protective factors and student achievement in the four risk groups. Separate ANOVA and test of significance difference between means were conducted to find out the effect FAR, CAR, and FCAR on fostering academic resilience in low child-risk level, high child-risk level, low family-risk level, and high family-risk level.

**Gain in Protective Factors by Intervention at Low Child-Risk Level**

To answer the questions ‘Can FAR , CAR and FCAR enhance protective factors among students at Low Child-Risk Level?’ and “Do the level of intervention (FAR, CAR, and FCAR) differ in their effect on gain in each of the select protective factors among students at Low Child-Risk Level? If so, which level of intervention is more effective in enhancing each of the protective factors?”, analysis of variance of each protective factor was carried out. Results are presented under separate headings for within-child, and family protective factors.

**Gain in within-child protective factors by intervention at low child-risk level**

This section presents the results of testing the hypotheses that, ‘In low child-risk group, mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose and vi) Peer Support is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the control group’. For a summary view of the gain in

within-child protective factors in four groups, means and standard deviations of them in low child-risk group are presented in Table 44.

**Table 44**

*Means and Standard Deviations of Gain Scores of the Within-Child Protective Factors in Control, FAR, CAR, and FCAR Groups at Low Child- Risk Level*

<u>Within-child Protective Factors</u>	<u>Groups</u>							
	<u>Control<sup>a</sup></u>		<u>FAR<sup>b</sup></u>		<u>CAR<sup>c</sup></u>		<u>FCAR<sup>d</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Social Competence	14.60	4.48	14.60	5.96	17.57	6.21	17.87	6.21
Problem Solving Skill	22.07	5.43	14.33	5.49	19.07	8.45	19.87	7.44
Critical Consciousness	15.33	5.64	16.47	8.07	18.07	5.73	20.13	3.98
Autonomy	14.47	4.31	12.67	3.81	12.86	5.13	14.73	4.45
Sense of Purpose	18.61	6.32	16.00	7.06	23.07	7.10	21.27	4.91
Peer Support	16.13	5.22	14.40	5.84	20.65	6.82	20.93	10.11

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=14, <sup>d</sup>n=15

Gain in Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 45.

**Table 45**

*ANOVA of Gain Scores of Within-Child Protective Factors by Intervention at Low Child-Risk Level*

Within-child Protective Factors	Source of variance	SS	df	MS	F
Social Competence	Between groups	144.55	3	48.18	1.46
	Within groups	1820.36	55	33.10	
	Total	1964.92	58		
Problem Solving Skill	Between groups	477.38	3	159.126	3.45**
	Within groups	2538.93	55	46.16	
	Total	3016.31	58		
Critical Consciousness	Between groups	195.02	3	65.01	1.78
	Within groups	2005.73	55	36.47	
	Total	2200.75	58		
Autonomy	Between groups	50.79	3	16.93	0.86
	Within groups	1081.71	55	19.67	
	Total	1132.51	58		
Sense of Purpose	Between groups	416.94	3	138.98	3.40**
	Within groups	2209.08	54	40.91	
	Total	2626.02	57		
Peer Support	Between groups	468.24	3	156.08	2.97**
	Within groups	2895.70	55	52.65	
	Total	3363.94	58		

\*\* $p < .01$

Table 45 shows the following results regarding the effect of intervention on within-child protective factors at low child-risk level.

The main effect of intervention on Social Competence is not significant,  $F(3, 55) = 1.46, p > .05$ .

Main effect of intervention on Problem Solving Skill is significant,  $F(3, 55) = 3.45, p < .01$ . There is no significant gain in mean score of Problem Solving Skill of FAR group ( $M = 14.33, SD = 5.49$ ) than that of control group ( $M = 22.07, SD = 5.43$ ),  $t = 3.88, p > .05$ . Problem Solving Skill of CAR group ( $M = 19.07, SD = 8.45$ ) and that of the control group ( $M = 22.07, SD = 5.43$ ) do not differ significantly in the mean gain scores,  $t = 1.13, p > .05$ . Problem Solving Skill of FCAR group ( $M = 19.87, SD = 7.44$ ) and that of the control group ( $M = 22.07, SD = 5.43$ ) do not differ

significantly in the mean gain scores,  $t = 0.93$ ,  $p > .05$ . Problem Solving Skill of the FAR group ( $M = 14.33$ ,  $SD = 5.49$ ) and CAR group ( $M = 19.07$ ,  $SD = 8.45$ ) do not differ significantly in the mean gain scores,  $t = -1.78$ ,  $p > .05$ . The mean gain score of FCAR group ( $M = 19.87$ ,  $SD = 7.44$ ) is significantly higher than that of FAR ( $M = 14.33$ ,  $SD = 5.49$ ) group,  $t = -2.32$ ,  $p < .05$ . Mean gain score of Problem Solving Skill of CAR group ( $M = 19.07$ ,  $SD = 8.45$ ) and FCAR group ( $M = 19.87$ ,  $SD = 7.44$ ) do not differ significantly,  $t = -0.27$ ,  $p > .05$ .

The main effect of intervention on Critical Consciousness is not significant,  $F(3, 55) = 1.78$ ,  $p > .05$ .

The main effect of intervention on Autonomy is not significant,  $F(3, 55) = 0.86$ ,  $p > .05$ .

The main effect of intervention on Sense of Purpose is significant  $F(3, 55) = 3.40$ ,  $p < .01$ . There is no significant difference between the mean gain score of Sense of Purpose of FAR ( $M = 16.00$ ,  $SD = 7.06$ ) group and control ( $M = 18.61$ ,  $SD = 6.32$ ) group,  $t = 1.07$ ,  $p > .05$ . The mean gain score of Sense of Purpose of CAR ( $M = 23.07$ ,  $SD = 7.10$ ) group is significantly higher than that of control ( $M = 18.61$ ,  $SD = 6.32$ ) group,  $t = -1.78$ ,  $p < .05$ . The mean gain scores of Sense of Purpose of FCAR ( $M = 21.27$ ,  $SD = 4.91$ ) group and control ( $M = 18.61$ ,  $SD = 6.32$ ) group do not differ significantly in mean gain scores,  $t = -1.29$ ,  $p > .05$ . The mean gain scores of Sense of Purpose of CAR ( $M = 23.07$ ,  $SD = 7.10$ ) group is significantly higher than that of FAR ( $M = 16.00$ ,  $SD = 7.06$ ) group,  $t = -2.69$ ,  $p < .01$ . Mean gain scores of Sense of Purpose of FCAR ( $M = 21.27$ ,  $SD = 4.91$ ) group is significantly higher than that of FAR ( $M = 16.00$ ,  $SD = 7.06$ ) group,  $t = -2.37$ ,  $p < .05$ . There is no significant difference between CAR ( $M = 23.07$ ,  $SD = 7.10$ ) group and FCAR ( $M = 21.27$ ,  $SD = 4.91$ ) group in the mean gain scores,  $t = 0.79$ ,  $p > .05$ .

The main effect of intervention on Peer Support is significant,  $F(3, 55) = 2.97$ ,  $p < .01$ . There is no significant difference between the mean gain score of

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Peer Support of FAR (M= 14.40, SD= 5.48) group and control (M= 16.13, SD= 5.22) group,  $t=0.86$ ,  $p > .05$ . The mean gain score of Peer Support of CAR (M= 20.65, SD= 6.82) group is significantly higher than that of control (M= 16.13, SD= 5.22) group,  $t= -1.99$ ,  $p < .05$ . There is no significant difference between mean gain scores of Peer Support of FCAR (M= 20.93, SD= 10.11) and control (M= 16.13, SD= 5.22) groups,  $t= -1.63$ ,  $p > .05$ . The mean gain score of Peer Support of CAR (M= 20.65, SD= 6.82) group is significantly higher than that of FAR (M= 14.40, SD= 5.48),  $t= -2.64$ ,  $p < .01$ . Mean gain scores of Peer Support of FCAR (M= 20.93, SD= 10.11) group is significantly higher than that of FAR (M= 14.40, SD= 5.48) group,  $t= -2.17$ ,  $p < .05$ . There is no significant difference in gain scores of Peer Support between CAR (M= 20.65, SD= 6.82) group and FCAR (M= 20.93, SD= 10.11) group,  $t= -0.09$ ,  $p > .05$ .

### **Discussion**

At low child-risk level, three within-child protective factors viz., Problem Solving Skill, Sense of Purpose, and Peer Support differ significantly ( $p < .01$ ) among control, FAR, CAR and FCAR groups i.e., the intervention made a significant difference in the protective factors of intervention groups. FAR and control groups do not differ in any of the six within-child protective factors i.e., FAR has no significant effect on fostering the within-child protective factors, at low child-risk level. At low child-risk level, CAR is effective in fostering the protective factors, Sense of Purpose and Peer Support only. CAR has no significant effect on fostering the other four protective factors. At low child-risk level, FCAR has no significant effect on fostering any of the six within child protective factors. At low child risk level, CAR is more effective than FAR, in fostering protective factors viz., Sense of Purpose, and Peer Support. In all other protective factors the CAR and FAR interventions do not differ significantly. At low child-risk level, FCAR is more effective than FAR, in fostering protective factors viz., Problem Solving Skill, Sense of Purpose, and Peer Support. At low child-risk level, CAR and FCAR do not differ significantly in fostering the within-child protective factors.

### Gain in family protective factors by intervention at low child-risk level

This section presents the result of testing the hypotheses that, ‘among low child-risk level, mean gain score of each of the protective factor viz., vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the control group’. For a summary view of the gain in family protective factors in four groups, mean and standard deviation of them are presented in Table 46.

**Table 46**

*Means and Standard Deviations of Family Protective Factors in Control, FAR, CAR, and FCAR Groups at Low Child-Risk Level*

Family Protective Factors	Group							
	<u>Control</u> <sup>a</sup>		<u>FAR</u> <sup>b</sup>		<u>CAR</u> <sup>c</sup>		<u>FCAR</u> <sup>d</sup>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Family Resources	18.27	6.34	20.67	5.68	20.65	6.58	24.13	6.92
Family Psychological Nurturance	17.80	6.69	24.27	6.41	24.45	12.37	27.00	5.17
Family Environment	13.00	4.16	13.15	4.72	22.55	8.92	14.13	3.56
Authoritative Parenting	9.40	1.92	8.40	4.08	6.38	4.31	27.60	10.45

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=13, <sup>d</sup>n=15

At low child risk level, gain in Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 47.

**Table 47**

*ANOVA of Gain Scores of Family Protective Factors by Intervention at Low Child-Risk Level*

Family protective factors	Source of variation	Sum of Squares	df	Mean Square	F
Family Resources	Between Groups	266.13	3	88.71	2.18
	Within Groups	2202.77	54	40.79	
	Total	2468.90	57		
Family Psychological Nurturance	Between Groups	690.32	3	230.11	3.64**
	Within Groups	3412.27	54	63.19	
	Total	4102.58	57		
Family Environment	Between Groups	848.34	3	282.78	9.05**
	Within Groups	1687.10	54	31.24	
	Total	2535.44	57		
Authoritative Parenting	Between Groups	4276.40	3	1425.47	37.81**
	Within Groups	2035.88	54	37.70	
	Total	6312.28	57		

\*\* $p < .01$

Table 47 shows the following results regarding the effect of intervention on family protective factors of low child-risk students.

The main effect of intervention on Family Resources is not significant,  $F(3, 54) = 2.18, p > .05$ .

The main effect of intervention on Family Psychological Nurturance is significant,  $F(3, 54) = 3.64, p < .01$ . Mean gain score of Family Psychological Nurturance of FAR ( $M = 24.27, SD = 6.41$ ) group is significantly higher than that of control ( $M = 17.80, SD = 6.69$ ) group,  $t = -2.70, p < .01$ . The mean gain score of CAR ( $M = 24.45, SD = 12.37$ ) group is significantly higher than control ( $M = 17.80, SD = 6.69$ ) group,  $t = -1.73, p < .01$ . Mean gain score of FCAR ( $M = 27.00, SD = 5.17$ ) group is significantly higher than that of control ( $M = 17.80, SD = 6.69$ ) group,  $t = -$

4.21,  $p < .01$ . There is no significant difference between the mean gain scores of Family Psychological Nurturance of FAR ( $M = 24.27$ ,  $SD = 6.41$ ) and CAR ( $M = 24.45$ ,  $SD = 12.37$ ) groups,  $t = -0.05$ ,  $p > .05$ ; between FAR ( $M = 24.27$ ,  $SD = 6.41$ ) group and FCAR ( $M = 27.00$ ,  $SD = 5.17$ ) group,  $t = -1.28$ ,  $p > .05$ ; and also between CAR ( $M = 24.45$ ,  $SD = 12.37$ ) group and FCAR ( $M = 27.00$ ,  $SD = 5.17$ ) group,  $t = -0.69$ ,  $p > .05$ .

The main effect of intervention on Family Environment is significant,  $F(3, 54) = 9.05$ ,  $p < .01$ . There is no significant difference between the mean gain score of Family Environment of FAR ( $M = 13.15$ ,  $SD = 4.72$ ) group and that of control ( $M = 13.00$ ,  $SD = 4.16$ ) group,  $t = -0.09$ ,  $p > .05$ . Mean gain score of Family Environment of CAR ( $M = 22.55$ ,  $SD = 8.92$ ) group is significantly higher than that of control ( $M = 13.00$ ,  $SD = 4.16$ ) group,  $t = -3.54$ ,  $p < .01$ . There is no significant difference between the mean gain score of FCAR ( $M = 14.13$ ,  $SD = 3.56$ ) group and control ( $M = 13.00$ ,  $SD = 4.16$ ) group,  $t = -0.80$ ,  $p > .05$ . Mean gain score of Family Environment of CAR ( $M = 22.55$ ,  $SD = 8.92$ ) group is significantly higher than that of FAR ( $M = 13.15$ ,  $SD = 4.72$ ) group,  $t = -3.40$ ,  $p < .01$ . There is no significant difference between mean gain scores of Family Environment of FAR ( $M = 13.15$ ,  $SD = 4.72$ ) and FCAR ( $M = 14.13$ ,  $SD = 3.56$ ) groups,  $t = -0.64$ ,  $p > .05$ . Mean gain score of Family Environment of CAR ( $M = 22.55$ ,  $SD = 8.92$ ) group is significantly higher than that of FCAR ( $M = 14.13$ ,  $SD = 3.56$ ) group,  $t = 3.19$ ,  $p < .01$ .

Main effect of intervention on Authoritative Parenting is significant,  $F(3, 54) = 37.81$ ,  $p < .01$ . There is no significant difference between the mean gain score of Authoritative Parenting of FAR ( $M = 8.40$ ,  $SD = 4.08$ ) group and that of control ( $M = 9.40$ ,  $SD = 1.92$ ) group,  $t = 0.86$ ,  $p > .05$ . There is no significant gain in mean score of Authoritative Parenting of CAR ( $M = 6.38$ ,  $SD = 4.31$ ) group than that of control ( $M = 9.40$ ,  $SD = 1.92$ ) group,  $t = 2.33$ ,  $p < .05$ ; and the mean gain score of Authoritative Parenting of FCAR ( $M = 27.60$ ,  $SD = 10.45$ ) group is significantly higher than that of control ( $M = 9.40$ ,  $SD = 1.92$ ) group,  $t = -6.63$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Authoritative Parenting of FAR ( $M = 8.40$ ,  $SD = 4.08$ ) and CAR ( $M = 6.38$ ,  $SD = 4.31$ ) groups,  $t = 1.27$ ,  $p > .05$ .

Mean gain score of Authoritative Parenting of FCAR (M= 27.60, SD= 10.45) group is significantly higher than that of FAR (M= 8.40, SD= 4.08) group  $t = -6.63, p < .01$ , and also mean gain score of Authoritative Parenting of FCAR (M= 27.60, SD= 10.45) group is significantly higher than that of CAR (M= 6.38, SD= 4.31) group,  $t = -7.19, p < .01$ .

### **Discussion**

At low child-risk level, three family protective factors viz., Family Psychological Nurturance, Family Environment, and Authoritative Parenting differ significantly ( $p < .01$ ) among control, FAR, CAR and FCAR groups i.e., intervention has significant effect on fostering these family protective factors. At low child-risk level, three levels of intervention could not make any change in Family Resources. At low child-risk level, FAR has significant effect on fostering Family Psychological Nurturance, and has no effect on fostering Family Environment and Authoritative Parenting. At low child-risk level, CAR is effective in fostering two protective factors viz., Family Psychological Nurturance and Family Environment. At low child-risk level, FCAR has significant effect on fostering Family Psychological Nurturance, and Authoritative Parenting. At low child-risk level, CAR is more effective than FAR and FCAR in fostering Family Environment. At low child-risk level, FCAR is more effective than FAR in fostering the protective factor viz., Authoritative Parenting. Comparing CAR and FCAR at low child-risk level, FCAR is more effective in fostering Authoritative Parenting, and CAR is more effective in fostering Family Environment.

### **Gain in achievement by intervention at low child-risk level**

To answer the questions, ‘Can FAR, CAR and FCAR enhance student achievement, at low child-risk level?’ ‘Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on enhancing student achievement? If so, which level of intervention is more effective in enhancing student achievement at low child-risk level?’ analysis of variance of immediate and delayed post test achievement scores were carried out. For a summary view of the scores of the

immediate and delayed post-intervention achievement in the control, FAR, CAR, and FCAR groups, mean and standard deviation of them are presented in Table 48.

**Table 48**

*Means and Standard Deviations of Post-Intervention Achievement Scores of Mathematics among Control, FAR, CAR, and FCAR Groups at Low Child-Risk Level*

Academic Achievement	Groups							
	Control <sup>a</sup>		FAR <sup>b</sup>		CAR <sup>c</sup>		FCAR <sup>d</sup>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Immediate Achievement in Mathematics	25.07	4.99	26.27	6.19	30.80	8.46	33.73	4.13
Delayed Achievement in Mathematics	32.20	3.12	44.20	2.37	34.36	3.46	37.00	11.17

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=15, <sup>d</sup>n=15

Results of one-way ANOVA of immediate and delayed post-intervention achievement in Mathematics of control, FAR, CAR, and FCAR groups are given in Table 49.

**Table 49**

*ANOVA of Immediate and Delayed Post-Intervention Achievements in Mathematics by Interventions at Low Child-Risk Level*

Academic achievement	Source of Variance	Sum of Squares	df	Mean Square	F
Immediate achievement	Between Groups	728.73	3.00	242.91	6.40**
	Within Groups	2127.20	56.00	37.99	
	Total	2855.93	59.00		
Delayed achievement	Between Groups	1220.97	3.00	406.99	10.57**
	Within Groups	2118.01	55.00	38.51	
	Total	3338.98	58.00		

\*\*p < .01

Table 49 shows the following results on effect of intervention on immediate and delayed post-intervention achievement of Mathematics in low child-risk group.

The main effect of intervention on immediate achievement in Mathematics is significant,  $F(3, 56) = 6.40$ ,  $p < .01$ . There is no significant difference between the mean immediate post-intervention score of Mathematics Achievement of FAR ( $M = 26.27$ ,  $SD = 6.19$ ) group and that of control ( $M = 25.07$ ,  $SD = 4.99$ ) group,  $t = -0.58$ ,  $p > .05$ . Mean immediate Mathematics Achievement of CAR group ( $M = 30.80$ ,  $SD = 8.46$ ) is significantly higher than control ( $M = 25.07$ ,  $SD = 4.99$ ) group,  $t = -2.26$ ,  $p < .05$ . Mean immediate Mathematics Achievement of FCAR ( $M = 33.73$ ,  $SD = 4.13$ ) group is significantly higher than control ( $M = 25.07$ ,  $SD = 4.99$ ) group,  $t = -5.18$ ,  $p < .01$ . Mean immediate Mathematics Achievement of CAR ( $M = 30.80$ ,  $SD = 8.46$ ) and FAR ( $M = 26.27$ ,  $SD = 6.19$ ) groups do not differ significantly,  $t = -1.67$ ,  $p > .05$ . Mean immediate Mathematics Achievement of FCAR ( $M = 33.73$ ,  $SD = 4.13$ ) group is significantly higher than that of FAR ( $M = 26.27$ ,  $SD = 6.19$ ) group,  $t = -3.88$ ,  $p < .01$ . Mean immediate Mathematics Achievement of FCAR ( $M = 33.73$ ,  $SD = 4.13$ ) and CAR ( $M = 30.80$ ,  $SD = 8.46$ ) groups do not differ significantly,  $t = -1.21$ ,  $p > .05$ .

The main effect of intervention on delayed achievement in Mathematics is significant,  $F(3, 55) = 10.57$ ,  $p < .01$ . The mean delayed post-intervention score of Mathematics Achievement of FAR ( $M = 44.20$ ,  $SD = 2.37$ ) group is significantly higher than that of control ( $M = 32.20$ ,  $SD = 3.12$ ) group,  $t = -11.86$ ,  $p < .01$ . Mean delayed Mathematics Achievement of CAR ( $M = 34.36$ ,  $SD = 3.46$ ) group is significantly higher than that of control ( $M = 32.20$ ,  $SD = 3.12$ ) group,  $t = -1.80$ ,  $p < .05$ . There is no significant difference between FCAR ( $M = 37.00$ ,  $SD = 11.17$ ) group and control ( $M = 32.20$ ,  $SD = 3.12$ ) group in delayed Mathematics Achievement,  $t = -1.60$ ,  $p > .05$ . Mean delayed Mathematics Achievement of FAR ( $M = 44.20$ ,  $SD = 2.37$ ) group is significantly higher than that of CAR ( $M = 34.36$ ,  $SD = 3.46$ ) group,  $t = 9.09$ ,  $p < .01$ ; and that of FAR ( $M = 44.20$ ,  $SD = 2.37$ ) group is significantly higher than that of FCAR ( $M = 37.00$ ,  $SD = 11.17$ ) group,  $t = 2.44$ ,  $p < .05$ . There is no

significant difference between mean delayed Mathematics Achievement CAR (M= 34.36, SD= 3.46) and FCAR (M= 37.00, SD= 11.17) groups,  $t = -0.87$ ,  $p > .05$ .

### **Discussion**

At low child-risk level, control and intervention groups differ in their effect on immediate Mathematics Achievement. FAR has no significant effect on enhancing immediate Mathematics Achievement. CAR and FCAR have significant effect on enhancing immediate Mathematics Achievement. CAR and FAR groups do not differ in enhancing immediate Mathematics Achievement. FCAR is more effective than FAR in promoting immediate Mathematics Achievement. CAR and FCAR groups do not differ in promoting immediate post-intervention scores of Mathematics Achievement.

At low child-risk level, control and intervention groups differ in their effect on delayed Mathematics Achievement. FAR and CAR groups significantly promote delayed Mathematics achievement. FCAR has no significant effect on delayed Mathematics achievement. FAR significantly promote delayed Mathematics achievement than FCAR and CAR. CAR and FCAR do not differ significantly on this count.

### **Gain in Protective Factors by Intervention at High Child-Risk Level**

To answer the questions ‘Can FAR, CAR and FCAR enhance protective factors among students at High Child-Risk Level?’ and “Do the level of intervention (FAR, CAR, and FCAR) differ in their effect on gain in each of the select protective factors among students at High Child-Risk Level? If so, which level of intervention is more effective in enhancing each of the protective factors?” analysis of variance of each protective factor were carried out. Results are presented under separate headings for within-child and family protective factors.

**Gain in within-child protective factors by intervention in high child-risk level**

This section presents the results of testing the hypotheses that, ‘At high child-risk level, mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose and vi) Peer Support is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the control group’. For a summary view of the gain in within-child protective factors in four groups, mean and standard deviation of them are presented in Table 50.

**Table 50**

*Means and Standard Deviations of Gain Scores of the Within-Child Protective Factors in Control, FAR, CAR, and FCAR Groups at High Child-Risk Level*

<u>Within-child Protective Factors</u>	<u>Groups</u>							
	<u>Control<sup>a</sup></u>		<u>FAR<sup>b</sup></u>		<u>CAR<sup>c</sup></u>		<u>FCAR<sup>d</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Social Competence	14.67	6.11	14.80	6.90	17.40	7.65	24.13	7.95
Problem Solving Skill	18.47	12.02	19.80	6.54	20.75	7.28	27.40	8.24
Critical Consciousness	14.53	6.16	18.47	4.17	17.93	5.61	23.40	4.42
Autonomy	11.20	4.33	10.33	4.27	12.00	5.62	20.20	3.95
Sense of Purpose	16.51	6.82	16.00	6.63	23.87	7.27	24.07	5.68
Peer Support	16.07	6.02	14.80	4.83	18.80	6.59	21.87	5.89

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=15, <sup>d</sup>n=15

Gain in Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 51.

**Table 51**

*ANOVA of Gain Scores of Within-Child Protective Factors by Intervention at High Child-Risk Level*

Within-child Protective Factors	Source of variance	SS	df	MS	F
Social Competence	Between groups	886.18	3	295.39	
	Within groups	2895.07	56	51.70	5.71**
	Total	3781.25	59		
Problem Solving Skill	Between groups	711.73	3	237.24	
	Within groups	4314.68	56	77.05	3.08**
	Total	5026.40	59		
Critical Consciousness	Between groups	600.58	3	200.19	
	Within groups	1490.00	56	26.61	7.52**
	Total	2090.58	59		
Autonomy	Between groups	936.60	3	312.20	
	Within groups	1178.13	56	21.34	14.84**
	Total	2114.73	59		
Sense of Purpose	Between groups	891.78	3	297.26	
	Within groups	2458.40	56	43.90	6.78**
	Total	3350.18	59		
Peer Support	Between groups	442.72	3	147.57	
	Within groups	1927.47	56	34.42	4.29**
	Total	2370.18	59		

\*\*p < .01

Table 51 shows the results on the effect of intervention on within-child protective factors of high child-risk group.

The main effect of intervention on Social Competence is significant,  $F(3, 56) = 5.71$ ,  $p < .01$ . Mean gain score of Social Competence of FAR group ( $M = 14.80$ ,  $SD = 6.90$ ) and control group ( $M = 14.67$ ,  $SD = 6.11$ ) do not differ significantly,  $t = -0.05$ ,  $p > .05$ . Social Competence of CAR group ( $M = 17.40$ ,  $SD = 7.65$ ) and control group ( $M = 14.67$ ,  $SD = 6.11$ ) do not differ significantly,  $t = -1.08$ ,  $p > .05$ . Social Competence of FCAR group ( $M = 24.13$ ,  $SD = 7.95$ ) is significantly higher

than that of the control group ( $M=14.67$ ,  $SD=6.11$ ),  $t= -3.65$ ,  $p < .01$ . Social Competence of FAR group ( $M= 14.80$ ,  $SD= 6.90$ ) and CAR group ( $M= 17.40$ ,  $SD= 7.65$ ) do not differ significantly,  $t= -0.98$ ,  $p > .05$ . Social Competence of the FCAR group ( $M= 24.13$ ,  $SD= 7.95$ ) is significantly higher than that of FAR group ( $M= 14.80$ ,  $SD= 6.90$ ),  $t= -3.43$ ,  $p < .01$ . Mean gain score of Social Competence of FCAR group ( $M= 24.13$ ,  $SD= 7.95$ ) is significantly higher than that of the CAR group ( $M= 17.40$ ,  $SD= 7.65$ ),  $t= -2.36$ ,  $p < .01$ .

The main effect of intervention on Problem Solving Skill is significant,  $F(3, 56) = 3.08$ ,  $p < .01$ . Mean gain score of Problem Solving Skill of FAR group ( $M= 19.80$ ,  $SD= 6.54$ ) and control group ( $M=18.47$ ,  $SD=12.02$ ) do not differ significantly,  $t= -0.38$ ,  $p > .05$ . Mean gain score of Problem Solving Skill of CAR group ( $M= 20.75$ ,  $SD= 7.28$ ) and control group ( $M=18.47$ ,  $SD=12.02$ ) do not differ significantly,  $t= -0.63$ ,  $p > .05$ . Problem Solving Skill of FCAR group ( $M= 27.40$ ,  $SD= 8.24$ ) is significantly higher than that of the control group ( $M=18.47$ ,  $SD=12.02$ ),  $t= -2.37$ ,  $p < .05$ . Problem Solving Skill of the FAR group ( $M= 19.80$ ,  $SD= 6.54$ ) and CAR group ( $M= 20.75$ ,  $SD= 7.28$ ) do not differ significantly in the mean gain score of Problem Solving Skill,  $t= -0.38$ ,  $p > .05$ . Mean gain score of Problem Solving Skill of FCAR group ( $M= 27.40$ ,  $SD= 8.24$ ) is significantly higher than that of the FAR group ( $M= 19.80$ ,  $SD= 6.54$ ),  $t= -2.80$ ,  $p < .05$ . Mean gain score of Problem Solving Skill of FCAR group ( $M= 27.40$ ,  $SD= 8.24$ ) is significantly higher than that of the CAR group ( $M= 20.75$ ,  $SD= 7.28$ ),  $t= -2.34$ ,  $p < .05$ .

The main effect of intervention on Critical Consciousness is significant,  $F(3, 56) = 7.52$ ,  $p < .01$ . Mean gain score of Critical Consciousness of FAR group ( $M= 18.47$ ,  $SD= 4.17$ ) is significantly higher than that of control group ( $M=14.53$ ,  $SD=6.16$ ),  $t= -2.05$ ,  $p < .05$ . Critical Consciousness of CAR group ( $M= 17.93$ ,  $SD= 5.61$ ) and that of the control group ( $M=14.53$ ,  $SD=6.16$ ) do not differ significantly,  $t= -1.58$ ,  $p > .05$ . Critical Consciousness of FCAR group ( $M= 23.40$ ,  $SD= 4.42$ ) is significantly higher than that of the control group ( $M=14.53$ ,  $SD=6.16$ ),  $t= -4.53$ ,  $p < .01$ . Critical Consciousness of the FAR group ( $M= 18.47$ ,  $SD= 4.17$ ) and CAR group

( $M= 17.93$ ,  $SD= 5.61$ ) do not differ significantly,  $t= 0.30$ ,  $p > .05$ . Mean gain score of Critical Consciousness FCAR group ( $M= 23.40$ ,  $SD= 4.42$ ) is significantly higher than that of FAR group ( $M= 18.47$ ,  $SD= 4.17$ ),  $t= -3.14$ ,  $p < .01$ . Mean gain score of Critical Consciousness of FCAR group ( $M= 23.40$ ,  $SD= 4.42$ ) is significantly higher than that of the CAR group ( $M= 17.93$ ,  $SD= 5.61$ ),  $t= -2.97$ ,  $p < .01$ .

The main effect of intervention on Autonomy is significant,  $F(3, 56)=14.84$ ,  $p < .05$ . Mean gain scores of Autonomy of FAR group ( $M= 10.33$ ,  $SD= 4.27$ ) and control group ( $M=11.20$ ,  $SD=4.33$ ) do not differ significantly in the mean gain scores,  $t= 0.55$ ,  $p > .05$ . Autonomy of CAR group ( $M= 12.00$ ,  $SD= 5.62$ ) and the control group ( $M=11.20$ ,  $SD=4.33$ ) do not differ significantly in the mean gain scores,  $t= -0.44$ ,  $p > .05$ . Autonomy of FCAR group ( $M= 20.20$ ,  $SD= 3.95$ ) is significantly higher than that of the control group ( $M=11.20$ ,  $SD=4.33$ ),  $t= -5.95$ ,  $p < .01$ . Autonomy of the FAR group ( $M= 10.33$ ,  $SD= 4.27$ ) and CAR group ( $M= 12.00$ ,  $SD= 5.62$ ) do not differ significantly in the mean gain scores,  $t= -0.92$ ,  $p > .05$ . Mean gain score of Autonomy of FCAR group ( $M= 20.20$ ,  $SD= 3.95$ ) is significantly higher than that of FAR group ( $M= 10.33$ ,  $SD= 4.27$ ),  $t= -6.57$ ,  $p < .01$ . Mean gain score of Autonomy of FCAR group ( $M= 20.20$ ,  $SD= 3.95$ ) is significantly higher than that of the CAR group ( $M= 12.00$ ,  $SD= 5.62$ ),  $t= -4.62$ ,  $p < .01$ .

The main effect of intervention on Sense of Purpose is significant,  $F(3, 56)=6.78$ ,  $p < .01$ . There is no significant difference between the mean gain score of Sense of Purpose of FAR ( $M= 16.00$ ,  $SD= 6.63$ ) group and control ( $M= 16.51$ ,  $SD= 6.82$ ) group,  $t= 0.21$ ,  $p > .05$ . The mean gain score of Sense of Purpose of CAR ( $M= 23.87$ ,  $SD= 7.27$ ) group is significantly higher than that of the control ( $M= 16.51$ ,  $SD= 6.82$ ) group,  $t= -2.86$ ,  $p < .05$ . The mean gain score of Sense of Purpose of FCAR ( $M= 24.07$ ,  $SD= 5.68$ ) group is significantly higher than that of the control ( $M= 16.51$ ,  $SD= 6.82$ ) group,  $t= -3.30$ ,  $p < .01$ . The mean gain score of Sense of Purpose of CAR ( $M= 23.87$ ,  $SD= 7.27$ ) group is significantly higher than that of FAR ( $M= 16.00$ ,  $SD= 6.63$ ) group,  $t= -3.10$ ,  $p < .01$ . The mean gain score of Sense of Purpose of FCAR ( $M= 24.07$ ,  $SD= 5.68$ ) group is significantly higher than

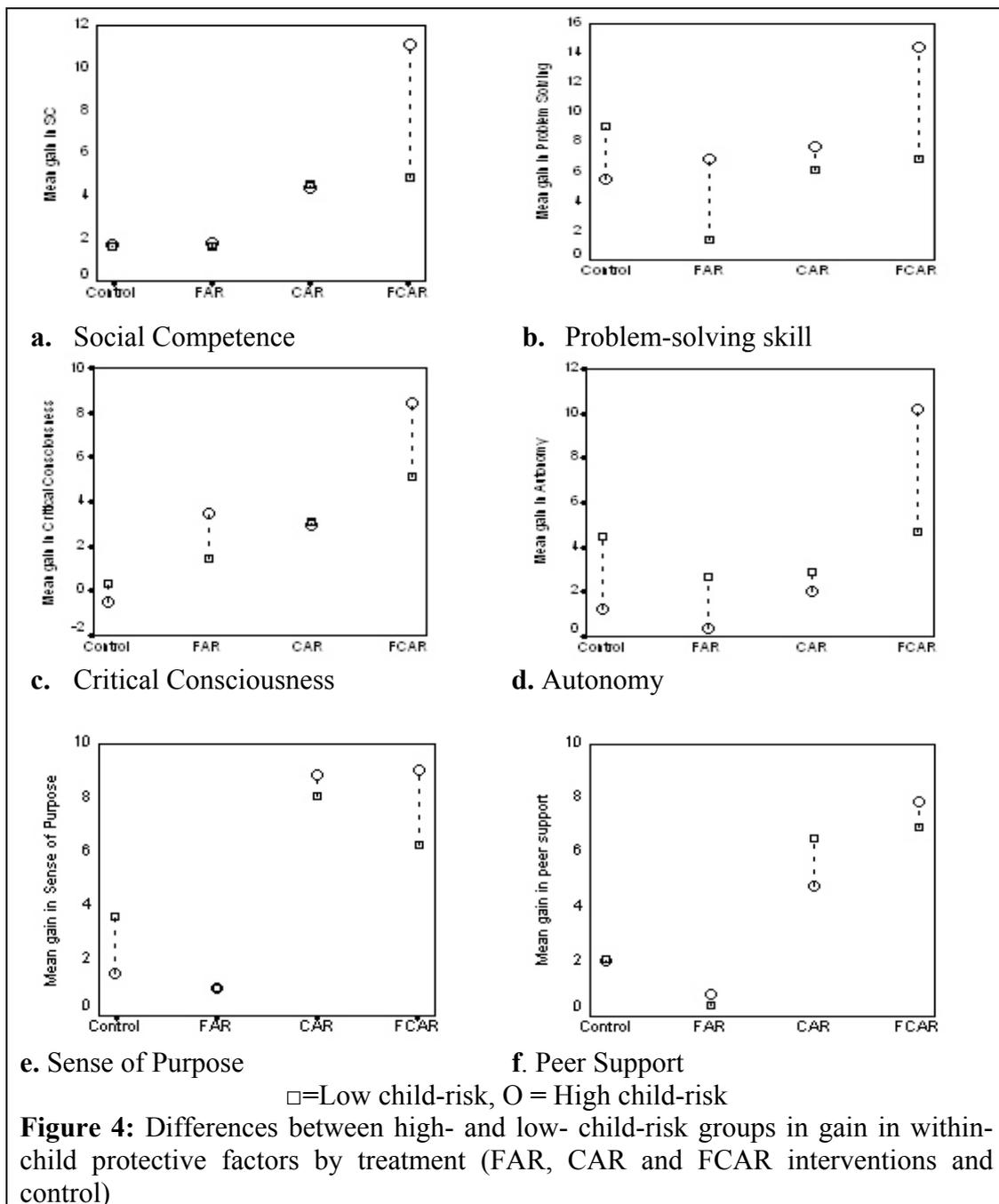
that of FAR (M= 16.00, SD= 6.63) group,  $t = -3.58$ ,  $p < .01$ . There is no significant difference in the mean gain score of Sense of Purpose between CAR (M= 23.87, SD= 7.27) group and FCAR (M= 24.07, SD= 5.68) group,  $t = -0.08$ ,  $p > .05$ .

The main effect of intervention on Peer Support is significant,  $F(3, 56) = 4.29$ ,  $p < .01$ . There is no significant difference between the mean gain score of Peer Support of FAR (M= 14.80, SD= 4.83) group and control (M= 16.07, SD= 6.02) group,  $t = 0.64$ ,  $p > .05$ . There is no significant difference between mean gain score of Peer Support of CAR (M= 18.80, SD= 6.59) group and control (M= 16.07, SD= 6.02) group,  $t = -1.18$ ,  $p > .05$ . Peer Support of FCAR (M= 21.87, SD= 5.89) group is significantly higher than that of control (M= 16.07, SD= 6.02) group,  $t = -2.67$ ,  $p < .05$ . There is no significant difference between Peer Support of CAR (M= 18.80, SD= 6.59) group and FAR (M= 14.80, SD= 4.83),  $t = -1.90$ ,  $p > .05$ . Mean gain score of Peer Support of FCAR (M= 21.87, SD= 5.89) group is significantly higher than that of FAR (M= 14.80, SD= 4.83) group,  $t = -3.59$ ,  $p < .01$ . There is no significant difference in the mean gain score of Peer Support between CAR (M= 18.80, SD= 6.59) group and FCAR (M= 21.87, SD= 5.89) group,  $t = -1.35$ ,  $p > .05$ .

## Discussion

At high child-risk level, all the six within-child protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support differ significantly ( $p < .01$ ) among FAR, CAR, FCAR and control groups, i.e., the intervention made significant differences in the protective factors of intervention groups. FAR and control groups do not differ in five within-child protective factors, except Critical Consciousness i.e., at high child-risk level, FAR has no significant effect on fostering the within-child protective factors other than Critical Consciousness. At high child-risk level, CAR is effective in fostering within-child protective factor viz., Sense of Purpose only. At high child-risk level, FCAR has significant effect on fostering Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer

Support. At high child-risk level, CAR is more effective in fostering Sense of Purpose than FAR. At high child-risk level, FCAR is more effective in fostering all the six within-child protective factors than FAR. At high child-risk level, FCAR is more effective in fostering the protective factors except Sense of Purpose and Peer Support than CAR. A summary view of the comparative post- experimental gain in within-child protective factors by the level of child-risk is presented in figure 4.



**Gain in family protective factors by intervention at high child-risk level**

This section presents the results of testing the hypotheses that, ‘at high child-risk level, mean gain score of each of the protective factor viz., vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the control group’. For a summary view of the gain in family protective factors in four groups, mean and standard deviation of them are presented in Table 52.

**Table 52**

*Means and Standard Deviations of Gain Scores of the Family Protective Factors in Control, FAR, CAR, and FCAR Groups at High Child-Risk Level*

Family Protective Factors	Group							
	Control <sup>a</sup>		FAR <sup>b</sup>		CAR <sup>c</sup>		FCAR <sup>d</sup>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Family Resources	15.07	7.62	21.07	3.81	26.99	11.98	26.00	6.29
Family Psychological Nurturance	16.53	10.66	25.93	9.40	30.31	15.89	33.00	7.47
Family Environment	12.89	5.37	15.93	5.04	24.33	9.88	16.20	4.48
Authoritative Parenting	9.13	4.00	8.13	2.56	8.33	4.03	27.93	8.91

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=15, <sup>d</sup>n=15

At high child-risk level, gain in Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 53.

**Table 53**

*ANOVA of Gain Scores of Family Protective Factors by Intervention at High Child-Risk Level*

Family protective factors	Source of variation	Sum of Squares	df	Mean Square	F
Family Resources	Between Groups	1334.93	3	444.98	6.96**
	Within Groups	3578.80	56	63.91	
	Total	4913.73	59		
Family Psychological Nurturance	Between Groups	2304.05	3	768.02	6.02**
	Within Groups	7147.60	56	127.64	
	Total	9451.65	59		
Family Environment	Between Groups	1066.32	3	355.44	8.27**
	Within Groups	2406.56	56	42.97	
	Total	3472.88	59		
Authoritative Parenting	Between Groups	4242.45	3	1414.15	47.89**
	Within Groups	1653.73	56	29.53	
	Total	5896.18	59		

\*\*p < .01

Table 53 shows the following results regarding the effect of intervention on family protective factors in high child-risk group.

The main effect of intervention on Family Resources is significant,  $F(3, 56) = 6.96, p < .01$ . The mean gain score of Family Resources of FAR ( $M = 21.07, SD = 3.81$ ) group is significantly higher than that of control ( $M = 15.07, SD = 7.62$ ) group,  $t = -2.73, p < .01$ . Mean gain score of Family Resources in CAR ( $M = 26.99, SD = 11.98$ ) group is significantly higher than that of control ( $M = 15.07, SD = 7.62$ ) group,  $t = -3.25, p < .01$ . Mean gain score of Family Resources in FCAR ( $M = 26.00, SD = 6.29$ ) group is significantly higher than that of control ( $M = 15.07, SD = 7.62$ ) group,  $t = -4.28, p < .01$ . There is no significant difference between the mean gain scores of

Family Resources of FAR (M= 21.07, SD= 3.81) and CAR (M= 26.99, SD= 11.98) groups,  $t = -1.82$ ,  $p > .05$ . Mean gain score of Family Resources of FCAR (M= 26.00, SD= 6.29) group is significantly higher than that of FAR (M= 21.07, SD= 3.81) group,  $t = -2.60$ ,  $p < .01$ . There is no significant difference between CAR (M= 26.99, SD= 11.98) group and FCAR (M= 26.00, SD= 6.29) group on mean gain score of Family Resources,  $t = 0.28$ ,  $p > .05$ .

The main effect of intervention on Family Psychological Nurturance in high child-risk students is significant,  $F(3, 56) = 6.02$ ,  $p < .01$ . The mean gain score of Family Psychological Nurturance of FAR (M= 25.93, SD= 9.40) group is significantly higher than that of control (M= 16.53, SD= 10.66) group,  $t = -2.56$ ,  $p < .05$ . Mean gain score of Family Psychological Nurturance of CAR (M= 30.31, SD= 15.89) group is significantly higher than that of control (M= 16.53, SD= 10.66) group,  $t = -2.79$ ,  $p < .01$ . Mean gain score of Family Psychological Nurturance of FCAR (M= 33.00, SD= 7.47) group is significantly higher than that of control (M= 16.53, SD= 10.66) group,  $t = -4.90$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Family Psychological Nurturance of FAR (M= 25.93, SD= 9.40) and CAR (M= 30.31, SD= 15.89) groups,  $t = -0.92$ ,  $p > .05$ . Mean gain score of Family Psychological Nurturance of FCAR (M= 33.00, SD= 7.47) group is significantly higher than that of FAR (M= 25.93, SD= 9.40) group,  $t = -2.28$ ,  $p < .05$ . There is no significant difference in the gain scores of Family Psychological Nurturance between CAR (M= 30.31, SD= 15.89) group and FCAR (M= 33.00, SD= 7.47) group,  $t = -0.59$ ,  $p > .05$ .

The main effect of intervention on Family Environment is significant,  $F(3, 56) = 8.27$ ,  $p < .01$ . There is no significant difference between the mean gain score of Family Environment of FAR (M= 15.93, SD= 5.04) group and that of control (M= 12.89, SD= 5.37) group,  $t = -1.60$ ,  $p > .05$ . Mean gain score of Family Environment of CAR (M= 24.33, SD= 9.88) group is significantly higher than that of control (M= 12.89, SD= 5.37) group,  $t = -3.94$ ,  $p < .01$ . Mean gain score of Family Environment of FCAR (M= 16.20, SD= 4.48) is significantly higher than

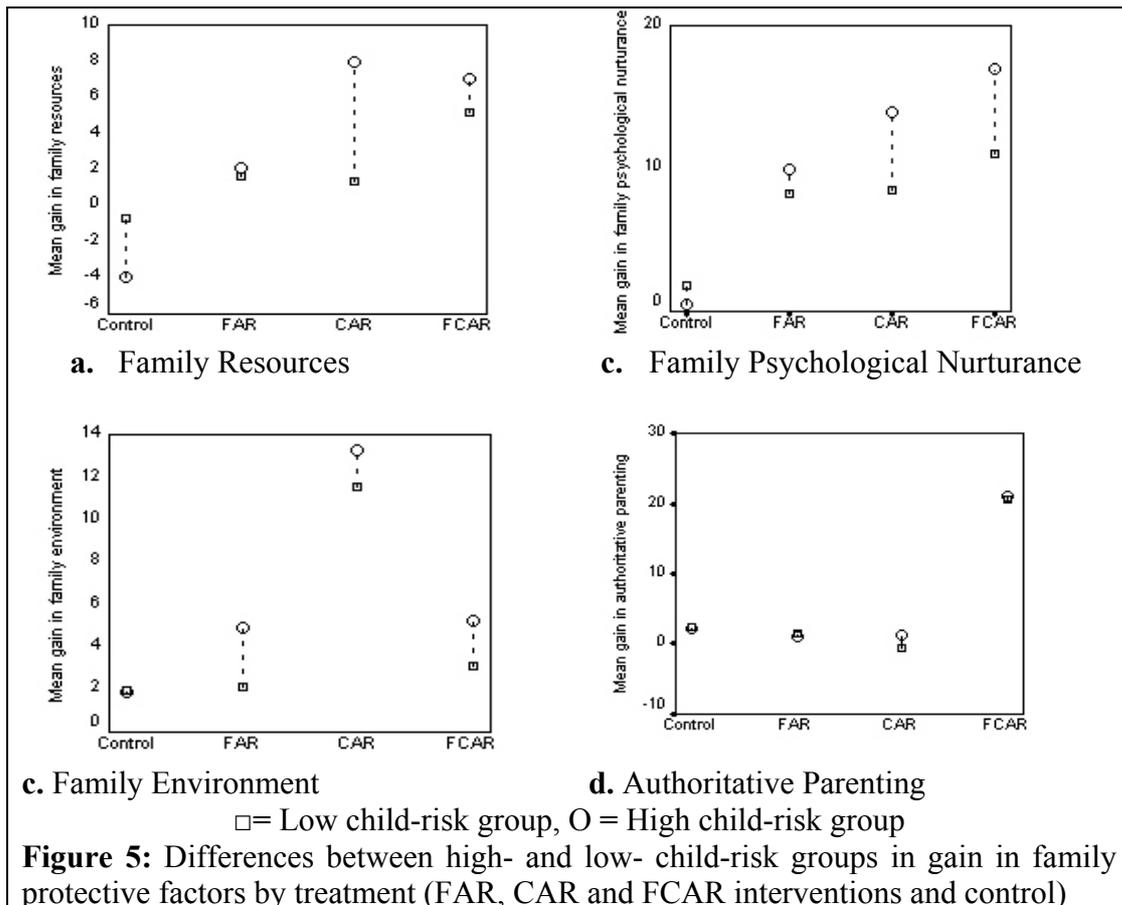
that of control (M= 12.89, SD= 5.37) group,  $t = -1.83$ ,  $p < .05$ . Mean gain score of Family Environment of CAR (M= 24.33, SD= 9.88) group is significantly higher than that of FAR (M= 15.93, SD= 5.04) and group,  $t = -2.93$ ,  $p < .01$ . There is no significant difference between mean gain scores of Family Environment of FAR (M= 15.93, SD= 5.04) and FCAR (M= 16.20, SD= 4.48) groups,  $t = -0.16$ ,  $p > .05$ . Mean gain scores of Family Environment of CAR (M= 24.33, SD= 9.88) group is significantly higher than that of FCAR (M= 16.20, SD= 4.48) group,  $t = 2.90$ ,  $p < .01$ .

The main effect of intervention on Authoritative Parenting is significant in high child-risk group,  $F(3, 56) = 47.89$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Authoritative Parenting of FAR (M= 8.13, SD= 2.56) group and that of control (M= 9.13, SD= 4.00) group,  $t = 0.82$ ,  $p > .05$ ; and, also between CAR (M= 8.33, SD= 4.03) group and control (M= 9.13, SD= 4.00) group,  $t = 0.55$ ,  $p > .05$ . Mean gain score of Authoritative Parenting of FCAR (M= 27.93, SD= 8.91) group is significantly higher than that of control (M= 9.13, SD= 4.00) group,  $t = -7.46$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Authoritative Parenting of FAR (M= 8.13, SD= 2.56) and CAR (M= 8.33, SD= 4.03) groups,  $t = -0.16$ ,  $p > .05$ . Mean gain score of Authoritative Parenting of FCAR (M= 27.93, SD= 8.91) group is significantly higher than that of FAR (M= 8.13, SD= 2.56) group,  $t = -8.27$ ,  $p < .01$ . Mean gain score of Authoritative Parenting of FCAR (M= 27.93, SD= 8.91) group is significantly higher than that of CAR (M= 8.33, SD= 4.03) group,  $t = -7.76$ ,  $p < .01$ .

## **Discussion**

At high child-risk level, all the four family protective factors viz., Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting differ significantly ( $p < .01$ ) among control, FAR, CAR and FCAR groups i.e., the intervention has a significant effect on fostering the family protective factors. At high child-risk level, FAR has significant effect on

fostering two family protective factors, viz., Family Resources and Family Psychological Nurturance. CAR is effective in fostering all the protective factors except Authoritative Parenting. FCAR has significant effect on fostering all the four family protective factors in high child-risk group. CAR is more effective than FAR in fostering the protective factor, Family Environment. FCAR is more effective than FAR in fostering the protective factors viz., Family Resources, Family Psychological Nurturance, and Authoritative Parenting. FCAR is more effective than CAR in fostering the protective factor, Authoritative Parenting, and CAR is more effective in fostering the protective factor, Family Environment. A summary view of the comparative post- experimental gain in family protective factors by the level of child-risk is presented in figure 5.



### Gain in achievement by intervention at high child-risk level

To answer the questions, ‘can FAR, CAR and FCAR enhance student achievement, at high child-risk level?’ ‘Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on enhancing student achievement? If so, which level of intervention is more effective in enhancing student achievement at high child-risk level?’ analysis of variance of immediate and delayed post test achievement scores were carried out. For a summary view of the scores of the immediate and delayed post-intervention achievement in the control, FAR, CAR, and FCAR groups, mean and standard deviation of them are presented in Table 54.

**Table 54**

*Means and Standard Deviations of Post-Intervention Achievement Scores of Mathematics among Control, FAR, CAR, and FCAR Groups at High Child-Risk Level*

Academic Achievement	Groups							
	Control <sup>a</sup>		FAR <sup>b</sup>		CAR <sup>c</sup>		FCAR <sup>d</sup>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Immediate Achievement in Mathematics	24.86	4.64	27.93	6.94	25.33	4.13	30.00	9.29
Delayed Achievement in Mathematics	31.20	2.42	45.20	3.10	34.26	8.97	37.46	7.91

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=15, <sup>d</sup>n=15

Results of one-way ANOVA of immediate and delayed post-intervention achievement in Mathematics of control, FAR, CAR, and FCAR groups are given in Table 55.

**Table 55**

*ANOVAs of Immediate- and Delayed Post-Intervention Achievement in Mathematics among High Child-Risk Group by Interventions*

Academic Achievement	Source of Variance	Sum of Squares	df	Mean Square	F
Immediate Achievement in Mathematics	Between Groups	257.93	3	85.98	1.97
	Within Groups	2424.00	56	43.29	
	Total	2681.93	59		
Delayed Achievement in Mathematics	Between Groups	1628.47	3	542.82	13.77**
	Within Groups	2207.47	56	39.42	
	Total	3835.93	59		

\*\*p < .01

Table 55 shows the following results. Main effect of intervention on immediate achievement in Mathematics is not significant,  $F(3, 56) = 1.97$ ,  $p > .05$ .

Main effect of intervention on delayed achievement in Mathematics is significant,  $F(3, 56) = 13.77$ ,  $p < .01$ . Mean delayed post-intervention scores of Mathematics Achievement of FAR ( $M = 45.20$ ,  $SD = 3.10$ ) group is significantly higher than that of control ( $M = 31.20$ ,  $SD = 2.42$ ) group,  $t = -13.79$ ,  $p < .01$ . There is no significant difference in the mean delayed Mathematics Achievement between CAR ( $M = 34.26$ ,  $SD = 8.97$ ) group and control ( $M = 31.20$ ,  $SD = 2.42$ ) group,  $t = -1.28$ ,  $p > .05$ . Mean delayed Mathematics Achievement of FCAR ( $M = 37.46$ ,  $SD = 7.91$ ) group is significantly higher than that of control ( $M = 31.20$ ,  $SD = 2.42$ ) group,  $t = -2.93$ ,  $p < .05$ . Mean delayed Mathematics Achievement of FAR ( $M = 45.20$ ,  $SD = 3.10$ ) group is significantly higher than that of CAR ( $M = 34.26$ ,  $SD = 8.97$ ) group,  $t = 4.46$ ,  $p < .01$ . The mean delayed Mathematics Achievement of FAR ( $M = 45.20$ ,  $SD = 3.10$ ) is significantly higher than that of FCAR ( $M = 37.46$ ,  $SD = 7.91$ ) group,  $t = 3.53$ ,  $p < .01$ . There is no significant difference in the mean delayed Mathematics Achievement between CAR ( $M = 34.26$ ,  $SD = 8.97$ ) group and FCAR ( $M = 37.46$ ,  $SD = 7.91$ ) group,  $t = -1.04$ ,  $p > .05$ .

## **Discussion**

At high child-risk level, control and intervention groups do not differ in their immediate Mathematics Achievement. FAR, CAR and FCAR have no significant effect on enhancing immediate Mathematics Achievement. In case of delayed achievement in Mathematics, intervention and control groups differ significantly. FAR and FCAR groups have significant effect in promoting delayed achievement in Mathematics. CAR has no effect in promoting achievement in Mathematics. FAR is more effective than CAR and FCAR in promoting delayed Mathematics Achievement. CAR and FCAR do not differ in promoting delayed Mathematics Achievement.

### **Gain in Protective Factors by Intervention at Low Family-Risk Level**

To answer the questions ‘Can FAR , CAR and FCAR enhance protective factors among students at Low Family-Risk Level?’ and “Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on gain in each of the select protective factors among students at Low Family-Risk Level? If so, which level of intervention is more effective in enhancing each of the protective factors?”, analysis of variance of each protective factor were carried out. Results are presented under separate headings for within-child, and family protective factors.

#### **Gain in within-child protective factors by intervention at low family-risk level**

This section presents the results of testing the hypotheses that, ‘At low family-risk level, mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose and vi) Peer Support is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the control group’. For a summary view of the gain in within-child protective factors in four groups, mean and standard deviation of them are presented in Table 56.

**Table 56**

*Means and Standard Deviations of Gain Scores of the Within-Child Protective Factors in Control, FAR, CAR, and FCAR Groups at Low Family-Risk Level*

<u>Within-child Protective Factors</u>	<u>Groups</u>							
	<u>Control<sup>a</sup></u>		<u>FAR<sup>b</sup></u>		<u>CAR<sup>c</sup></u>		<u>FCAR<sup>d</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Social Competence	13.58	4.07	16.33	6.01	16.80	5.88	22.47	9.46
Problem Solving Skill	21.93	5.82	19.27	7.52	18.89	7.86	25.20	10.12
Critical Consciousness	15.33	5.58	17.73	5.10	19.62	5.78	22.46	5.01
Autonomy	13.13	4.90	10.87	4.66	12.60	4.95	17.93	6.13
Sense of Purpose	16.50	5.24	17.93	7.47	21.70	5.97	24.00	5.35
Peer Support	16.20	5.00	16.00	4.89	19.53	5.71	22.60	6.16

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=15, <sup>d</sup>n=15

Gain in Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 57.

**Table 57**

*ANOVA of Gain Scores of Within-Child Protective Factors by Interventions at Low Family-Risk Level*

Within-Child Protective Factors	Source of variance	SS	df	MS	F
Social Competence	Between groups	623.53	3	207.84	4.70**
	Within groups	2475.07	56	44.20	
	Total	3098.60	59		
Problem Solving Skill	Between groups		3		1.99
	Within groups	380.13	56	126.71	
	Total	3561.20	59	63.59	
Critical Consciousness	Between groups	3941.33	3		4.34**
	Within groups	408.58	56	136.19	
	Total	1757.60	59	31.39	
Autonomy	Between groups	2166.18	3		5.09**
	Within groups	411.93	56	137.31	
	Total	1510.00	59	26.96	
Sense of Purpose	Between groups	1921.93	3		4.55**
	Within groups	520.02	56	173.34	
	Total	2095.37	59	38.10	
Peer Support	Between groups	2615.39	3		5.08**
	Within groups	440.85	56	146.95	
	Total	1619.73	59	28.92	

\*\*p < .01

Table 57 shows the following results regarding the effect of intervention on within-child protective factors in low family-risk group.

The main effect of intervention on Social Competence is significant,  $F(3, 56) = 4.70$ ,  $p < .01$ . There is no significant difference in the mean gain scores of Social Competence of FAR group ( $M = 16.33$ ,  $SD = 6.01$ ) and control group ( $M = 13.58$ ,  $SD = 4.07$ ),  $t = -1.47$ ,  $p > .05$ . Mean gain score of Social Competence of CAR group ( $M = 16.80$ ,  $SD = 5.88$ ) is significantly higher than that of the control group ( $M = 13.58$ ,  $SD = 4.07$ ),  $t = -1.74$ ,  $p < .05$ . Gain in Social Competence of FCAR

group (M= 22.47, SD= 9.46) is significantly higher than that of the control group (M=13.58, SD=4.07),  $t = -3.34$ ,  $p < .01$ . Gain in Social Competence of FAR group (M= 16.33, SD= 6.01) and CAR group (M= 16.80, SD= 5.88) do not differ significantly,  $t = -0.22$ ,  $p > .05$ . Gain in Social Competence of the FCAR group (M= 22.47, SD= 9.46) is significantly higher than that of FAR group (M= 16.33, SD= 6.01),  $t = -2.12$ ,  $p < .05$ . There is no significant difference in the mean gain scores of Social Competence of FCAR group (M= 22.47, SD= 9.46) and CAR group (M= 16.80, SD= 5.88),  $t = -1.97$ ,  $p > .05$ .

The main effect of intervention on Gain in Problem Solving Skill is not significant,  $F(3, 56) = 1.99$ ,  $p > .05$ .

The main effect of intervention on Critical Consciousness is significant,  $F(3, 56) = 4.34$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Critical Consciousness of FAR group (M= 17.73, SD= 5.10) and control group (M=15.33, SD=5.78),  $t = -1.23$ ,  $p > .05$ . Mean gain score of Critical Consciousness of CAR group (M= 19.62, SD= 5.78) is significantly higher than that of control group (M=15.33, SD=5.78),  $t = -2.07$ ,  $p < .05$ . Critical Consciousness of FCAR group (M= 22.46, SD= 5.01) is significantly higher than that of the control group (M=15.33, SD=5.78),  $t = -3.68$ ,  $p < .01$ . Gain in Critical Consciousness of the FAR group (M= 17.73, SD= 5.10) and CAR group (M= 19.62, SD= 5.78) do not differ significantly,  $t = -0.95$ ,  $p > .05$ . Mean gain score of Critical Consciousness FCAR group (M= 22.46, SD= 5.01) is significantly higher than that of FAR group (M= 17.73, SD= 5.10),  $t = -2.56$ ,  $p < .05$ . Mean gain score of Critical Consciousness of FCAR group (M= 22.46, SD= 5.01) and CAR group (M= 19.62, SD= 5.78) do not differ significantly in the mean gain scores,  $t = -1.44$ ,  $p > .05$ .

The main effect of intervention on Autonomy is significant,  $F(3, 56) = 5.09$ ,  $p < .01$ . There is no significant difference in the mean gain scores of Autonomy of FAR group (M= 10.87, SD= 4.66) and control group (M=13.13, SD=4.90),  $t = 1.29$ ,  $p > .05$ ; and those between CAR group (M= 12.60, SD= 4.95) and the control group

( $M=13.13$ ,  $SD=4.90$ ),  $t= 0.29$ ,  $p > .05$ . Gain in Autonomy of FCAR group ( $M= 17.93$ ,  $SD= 6.13$ ) is significantly higher than that of the control group ( $M=13.13$ ,  $SD=4.90$ ),  $t= -2.37$ ,  $p < .05$ . Autonomy of the FAR group ( $M= 10.87$ ,  $SD= 4.66$ ) and CAR group ( $M= 12.60$ ,  $SD= 4.95$ ) do not differ significantly in the mean gain scores,  $t= -0.99$ ,  $p > .05$ . Mean gain score of Autonomy of FCAR group ( $M= 17.93$ ,  $SD= 6.13$ ) is significantly higher than that of FAR group ( $M= 10.87$ ,  $SD= 4.66$ ),  $t= -3.55$ ,  $p < .01$ . Mean gain score of Autonomy of FCAR ( $M= 17.93$ ,  $SD= 6.13$ ) is significantly higher than that of the CAR group ( $M= 12.60$ ,  $SD= 4.95$ ),  $t= -2.62$ ,  $p < .01$ .

The main effect of intervention on Sense of Purpose is significant,  $F(3, 56) = 4.55$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Sense of Purpose of FAR ( $M= 17.93$ ,  $SD= 7.47$ ) group and control ( $M= 16.50$ ,  $SD= 5.24$ ) group,  $t= -0.61$ ,  $p > .05$ . Mean gain score of Sense of Purpose of CAR ( $M= 21.70$ ,  $SD= 5.97$ ) group is significantly higher than that of the control ( $M= 16.50$ ,  $SD= 5.24$ ) group,  $t= -2.54$ ,  $p < .05$ . The mean gain score of Sense of Purpose of FCAR ( $M= 24.00$ ,  $SD= 5.35$ ) group is significantly higher than that of the control ( $M= 16.50$ ,  $SD= 5.24$ ) group,  $t= -3.88$ ,  $p < .01$ . Mean gain score of Sense of Purpose of FAR ( $M= 17.93$ ,  $SD= 7.47$ ) and CAR ( $M= 21.70$ ,  $SD= 5.97$ ) groups do not differ significantly,  $t= -1.53$ ,  $p > .05$ . Mean gain score of Sense of Purpose of FCAR ( $M= 24.00$ ,  $SD= 5.35$ ) group is significantly higher than that of FAR ( $M= 17.93$ ,  $SD= 7.47$ ) group,  $t= -2.56$ ,  $p < .05$ . There is no significant difference between gain in Sense of Purpose of CAR ( $M= 21.70$ ,  $SD= 5.97$ ) group and FCAR ( $M= 24.00$ ,  $SD= 5.35$ ) group,  $t= -1.11$ ,  $p > .05$ .

The main effect of intervention on Peer Support is significant,  $F(3, 56) = 5.08$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Peer Support of FAR ( $M=16.00$ ,  $SD= 4.89$ ) group and control ( $M= 16.20$ ,  $SD= 5.00$ ) group,  $t= 0.11$ ,  $p > .05$ . Mean gain score of Peer Support of CAR ( $M= 19.53$ ,  $SD= 5.71$ ) group is significantly higher than that of control ( $M= 16.20$ ,  $SD= 5.00$ ) group,  $t= -1.70$ ,  $p < .05$ . Gain in Peer Support of FCAR ( $M= 22.60$ ,  $SD= 6.16$ )

group is significantly higher than that of control (M= 16.20, SD= 5.00) group,  $t = -3.12$ ,  $p < .01$ . There is no significant difference between the gain in Peer Support of CAR (M= 19.53, SD= 5.71) group and FAR (M= 16.00, SD= 4.89),  $t = -1.82$ ,  $p > .05$ . Mean gain score of Peer Support of FCAR (M= 22.60, SD= 6.16) group is significantly higher than that of FAR (M= 16.00, SD= 4.89) group,  $t = -3.25$ ,  $p < .01$ . There is no significant difference between mean gain score of Peer Support of CAR (M= 19.53, SD= 5.71) group and FCAR (M= 22.60, SD= 6.16) group,  $t = -1.42$ ,  $p > .05$ .

### **Discussion**

At low family-risk level, five within-child protective factors viz., Social Competence, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support differ significantly ( $p < .01$ ) among control, FAR, CAR and FCAR groups i.e., the intervention made a significant difference in these protective factors of intervention groups. At low family-risk level, FAR has no significant effect on fostering the within-child protective factors. CAR is effective in fostering protective factors viz., Social Competence, Critical Consciousness, Sense of Purpose and Peer Support. FCAR has significant effect on fostering Social Competence, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support. At low family-risk level, FAR and CAR interventions do not differ in their effectiveness in fostering protective factors. At low family-risk level, FCAR is more effective than FAR in fostering all the five within-child protective factors except Problem Solving Skill. FCAR is more effective in fostering the protective factor Autonomy than CAR.

### **Gain in family protective factors by intervention in low family-risk level**

This section presents the results of testing the hypotheses that, 'at low family-risk level, mean gain score of each of the protective factor viz., vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the control group'. For a summary view of the gain in family

protective factors in four groups, means and standard deviations of them are presented in Table 58.

**Table 58**

*Means and Standard Deviations of Gain Scores of the Family Protective Factors in Control, FAR, CAR, and FCAR Groups at Low Family-Risk Level*

Family Protective Factors	<u>Group</u>							
	<u>Control<sup>a</sup></u>		<u>FAR<sup>b</sup></u>		<u>CAR<sup>c</sup></u>		<u>FCAR<sup>d</sup></u>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Family Resources	15.27	7.15	20.53	4.24	23.73	12.54	24.87	6.59
Family Psychological Nurturance	17.67	6.42	23.60	8.33	24.86	12.66	30.33	8.13
Family Environment	12.55	4.21	14.15	4.48	20.00	5.64	13.67	3.04
Authoritative Parenting	8.27	3.26	7.87	3.04	7.20	4.03	26.93	10.55

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=15, <sup>d</sup>n=15

At low family-risk level, gain in Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 59.

**Table 59**

*ANOVA of Gain Scores of Family Protective Factors by Interventions at Low Family-Risk Level*

Family Protective Factors	Source of variation	Sum of Squares	df	Mean Square	F
Family Resources	Between Groups	832.07	3	277.36	4.11**
	Within Groups	3775.33	56	67.42	
	Total	4607.40	59		
Family Psychological Nurturance	Between Groups	1216.03	3	405.35	4.81**
	Within Groups	4719.78	56	84.28	
	Total	5935.82	59		
Family Environment	Between Groups	562.37	3	187.46	9.50**
	Within Groups	1104.97	56	19.73	
	Total	1667.34	59		
Authoritative Parenting	Between Groups	4136.73	3	1378.91	37.41**
	Within Groups	2064.00	56	36.86	
	Total	6200.73	59		

\*\* $p < .01$

Table 59 shows the following results regarding the effect of intervention on family protective factors in low family-risk group.

The main effect of intervention on Family Resources is significant,  $F(3, 56) = 4.11$ ,  $p < .01$ . The mean gain score of Family Resources of FAR ( $M = 20.53$ ,  $SD = 4.24$ ) group is significantly higher than that of control ( $M = 15.27$ ,  $SD = 7.15$ ) group,  $t = -2.45$ ,  $p < .05$ . Mean gain score of CAR ( $M = 23.73$ ,  $SD = 12.54$ ) group is significantly higher than that of control ( $M = 15.27$ ,  $SD = 7.15$ ) group,  $t = -2.27$ ,  $p < .05$ . Mean gain score of FCAR ( $M = 24.87$ ,  $SD = 6.59$ ) group is significantly higher than that of control ( $M = 15.27$ ,  $SD = 7.15$ ) group,  $t = -3.82$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Family Resources of FAR

( $M= 20.53$ ,  $SD= 4.24$ ) and CAR ( $M= 23.73$ ,  $SD= 12.54$ ) groups,  $t= -0.94$ ,  $p > .05$ . Mean gain score of Family Resources of FCAR ( $M= 24.87$ ,  $SD= 6.59$ ) group is significantly higher than that of FAR ( $M= 20.53$ ,  $SD= 4.24$ ) group,  $t= -2.15$ ,  $p < .05$ . There is no significant difference between mean gain score of Family Resources of CAR ( $M= 23.73$ ,  $SD= 12.54$ ) group and FCAR ( $M= 24.87$ ,  $SD= 6.59$ ) group,  $t= -0.31$ ,  $p > .05$ .

The main effect of intervention on Family Psychological Nurturance is significant,  $F(3, 56) = 4.81$ ,  $p < .01$ . The mean gain score of Family Psychological Nurturance of FAR ( $M= 23.60$ ,  $SD= 8.33$ ) group is significantly higher than that of control ( $M= 17.67$ ,  $SD= 6.42$ ) group,  $t= -2.18$ ,  $p < .05$ . Mean gain score of CAR ( $M= 24.86$ ,  $SD= 12.66$ ) group is significantly higher than that of control ( $M= 17.67$ ,  $SD= 6.42$ ) group,  $t= -1.96$ ,  $p < .05$ . Mean gain score of FCAR ( $M= 30.33$ ,  $SD= 8.13$ ) group is significantly higher than that of control ( $M= 17.67$ ,  $SD= 6.42$ ) group,  $t= -4.73$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Family Psychological Nurturance of FAR ( $M= 23.60$ ,  $SD= 8.33$ ) and CAR ( $M= 24.86$ ,  $SD= 12.66$ ) groups,  $t= -0.32$ ,  $p > .05$ . Mean gain score of Family Psychological Nurturance of FCAR ( $M= 30.33$ ,  $SD= 8.13$ ) group is significantly higher than that of FAR ( $M= 23.60$ ,  $SD= 8.33$ ) group,  $t= -2.24$ ,  $p < .05$ . There is no significant difference between mean gain scores of Family Psychological Nurturance of CAR ( $M= 24.86$ ,  $SD= 12.66$ ) group and FCAR ( $M= 30.33$ ,  $SD= 8.13$ ) group,  $t= -1.41$ ,  $p > .05$ .

The main effect of intervention on Family Environment is significant,  $F(3, 56) = 9.50$ ,  $p < .01$ . There is no significant difference between the mean gain score of Family Environment of FAR ( $M= 14.15$ ,  $SD= 4.48$ ) group and that of control ( $M= 12.55$ ,  $SD= 4.21$ ) group,  $t= -1.01$ ,  $p > .05$ . Mean gain score of Family Environment of CAR ( $M= 20.00$ ,  $SD= 5.64$ ) group is significantly higher than that of control ( $M= 12.55$ ,  $SD= 4.21$ ) group,  $t= -4.10$ ,  $p < .01$ . There is no significant difference between mean gain score of FCAR ( $M= 13.67$ ,  $SD= 3.04$ ) and control ( $M= 12.55$ ,  $SD= 4.21$ ) group,  $t= -0.84$ ,  $p > .05$ . Mean gain score of Family

Environment of CAR (M= 20.00, SD= 5.64) group is significantly higher than that of FAR (M= 14.15, SD= 4.48) group,  $t = -3.15$ ,  $p < .01$ . There is no significant difference between mean gain score of Family Environment of FAR (M= 14.15, SD= 4.48) and FCAR (M= 13.67, SD= 3.04) group,  $t = 0.34$ ,  $p > .05$ . Mean gain scores of Family Environment of CAR (M= 20.00, SD= 5.64) group is significantly higher than that of FCAR (M= 13.67, SD= 3.04) group,  $t = 3.83$ ,  $p < .01$ .

The main effect of intervention on Authoritative Parenting is significant,  $F(3, 56) = 37.41$ ,  $p < .01$ . There is no significant difference between the mean gain score of Authoritative Parenting of FAR (M= 7.87, SD= 3.04) group and that of control (M= 8.27, SD= 3.26) group,  $t = 0.35$ ,  $p > .05$ ; and between that of CAR (M= 7.20, SD= 4.03) and control (M= 8.27, SD= 3.26) group,  $t = 0.80$ ,  $p > .05$ . Mean gain score of FCAR (M= 26.93, SD= 10.55) group is significantly higher than that of control (M= 8.27, SD= 3.26) group,  $t = -6.54$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Authoritative Parenting of FAR (M= 7.87, SD= 3.04) and CAR (M= 7.20, SD= 4.03) groups,  $t = 0.51$ ,  $p > .05$ . Mean gain scores of Authoritative Parenting of FCAR (M= 26.93, SD= 10.55) group is significantly higher than that of FAR (M= 7.87, SD= 3.04) group,  $t = -6.72$ ,  $p < .01$ . Mean gain score of Authoritative Parenting of FCAR (M= 26.93, SD= 10.55) group is significantly higher than that of CAR (M= 7.20, SD= 4.03) group,  $t = -6.77$ ,  $p < .01$ .

## Discussion

At low family-risk level, all the four family protective factors viz., Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting differ significantly ( $p < .01$ ) among control, FAR, CAR and FCAR groups i.e., the intervention has significant effect on fostering the family protective factors. At low family-risk level, FAR has significant effect on fostering Family Resources, and Family Psychological Nurturance. At low family-risk level, CAR is effective in fostering all the protective factors except Authoritative Parenting. At low family-risk level, FCAR has significant effect on fostering three

family protective factors and could not foster Family Environment. CAR is more effective than FAR in fostering the protective factor, Family Environment. At low family-risk level, FCAR is more effective than FAR in fostering the protective factors viz., Family Resources, Family Psychological Nurturance, and Authoritative Parenting. Comparing CAR and FCAR groups one another, FCAR is more effective in fostering the protective factor, Authoritative Parenting, and CAR is more effective in fostering the protective factor, Family Environment.

### **Gain in achievement by intervention at low family-risk level**

To answer the questions, ‘Can FAR, CAR and FCAR enhance student achievement, at low family-risk level?’ ‘Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on enhancing student achievement? If so, which level of intervention is more effective in enhancing student achievement at low family-risk level?’, analysis of variance of immediate and delayed post test achievement scores of Mathematics were carried out. For a summary view of the scores of the immediate and delayed post-intervention achievement in the control, FAR, CAR, and FCAR groups, mean and standard deviation of them are presented in Table 60.

**Table 60**

*Means and Standard Deviations of Scores of Post-Intervention Achievement in Mathematics among Control, FAR, CAR, and FCAR Groups at Low Family-Risk Level*

<u>Academic Achievement</u>	<u>Groups</u>							
	<u>Control<sup>a</sup></u>		<u>FAR<sup>b</sup></u>		<u>CAR<sup>c</sup></u>		<u>FCAR<sup>d</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Immediate Achievement in Mathematics	25.73	5.09	29.73	7.43	28.20	6.77	34.87	4.67
Delayed Achievement in Mathematics	32.00	3.14	45.00	2.73	34.33	3.96	40.13	12.51

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=15, <sup>d</sup>n=15

Results of one-way ANOVA of immediate and delayed post-intervention achievement in Mathematics of control, FAR, CAR, and FCAR groups are given in Table 61.

**Table 61**

*ANOVA of Immediate- and Delayed Post-Intervention Achievements in Mathematics by Interventions*

Academic Achievement	Source of variation	Sum of Squares	df	Mean Square	F
Immediate Achievement in Mathematics	Between Groups	669.93	3	223.31	6.00**
	Within Groups	2084.00	56	37.21	
	Total	2753.93	59		
Delayed Achievement in Mathematics	Between Groups	1543.87	3	514.62	10.87**
	Within Groups	2651.07	56	47.34	
	Total	4194.93	59		

\*\*p < .01

Table 61 shows the following results regarding the effect of intervention on Mathematics Achievement at low family-risk level.

Main effect of intervention on immediate achievement in Mathematics is significant,  $F(3, 56) = 6.00$ ,  $p < .05$ . Mean immediate Mathematics Achievement of FAR ( $M = 29.73$ ,  $SD = 7.43$ ) group is significantly higher than that of control ( $M = 25.73$ ,  $SD = 5.09$ ) group,  $t = -1.72$ ,  $p < .05$ . There is no significant difference in immediate Mathematics Achievement between CAR ( $M = 28.20$ ,  $SD = 6.77$ ) group and control ( $M = 25.73$ ,  $SD = 5.09$ ) group,  $t = -1.13$ ,  $p > .05$ . Mean immediate Mathematics Achievement of FCAR ( $M = 34.87$ ,  $SD = 4.67$ ) group is significantly higher than that of control ( $M = 25.73$ ,  $SD = 5.09$ ) group,  $t = -5.12$ ,  $p < .01$ . There is no significant difference between mean immediate Mathematics Achievement of FAR ( $M = 29.73$ ,  $SD = 7.43$ ) group and CAR ( $M = 28.20$ ,  $SD = 6.77$ ) group,  $t = 0.59$ ,  $p > .05$ . Mean immediate Mathematics Achievement of FCAR ( $M = 34.87$ ,  $SD = 4.67$ ) group is significantly higher than that of FAR ( $M = 29.73$ ,  $SD = 7.43$ ) group,

$t = -2.27, p < .05$ ; and, mean immediate Mathematics Achievement of FCAR ( $M = 34.87, SD = 4.67$ ) group is significantly higher than CAR ( $M = 28.20, SD = 6.77$ ) group,  $t = -3.14, p < .01$ .

Main effect of intervention on delayed achievement in Mathematics is significant,  $F(3, 56) = 10.87, p < .01$ . Mean delayed post-intervention score of Mathematics Achievement of FAR ( $M = 45.00, SD = 2.73$ ) group is significantly higher than that of control ( $M = 32.00, SD = 3.14$ ) group,  $t = -12.10, p < .01$ . Mean delayed Mathematics Achievement of CAR ( $M = 34.33, SD = 3.96$ ) group is significantly higher than that of control ( $M = 32.00, SD = 3.14$ ) group,  $t = -1.79, p < .05$ . Mean delayed Mathematics Achievement of FCAR ( $M = 40.13, SD = 12.51$ ) group is significantly higher than that of control ( $M = 32.00, SD = 3.14$ ) group,  $t = -2.44, p < .05$ . Mean delayed Mathematics Achievement of FAR ( $M = 45.00, SD = 2.73$ ) group is significantly higher than that of CAR ( $M = 34.33, SD = 3.96$ ) group,  $t = 8.59, p < .01$ . There is no significant difference between the FAR ( $M = 45.00, SD = 2.73$ ) and FCAR ( $M = 40.13, SD = 12.51$ ) group,  $t = 1.47, p > .05$ ; and, between CAR ( $M = 34.33, SD = 3.96$ ) group and FCAR ( $M = 40.13, SD = 12.51$ ) group,  $t = -1.71, p > .05$  in delayed Mathematics Achievement.

## **Discussion**

At low family-risk level, results of one-way ANOVAs of mean immediate post-intervention scores of Mathematics Achievement revealed that control and intervention groups do differ in their effect on immediate Mathematics Achievement. FAR and FCAR have significant effect on enhancing immediate Mathematics Achievement. CAR has no significant effect on enhancing immediate Mathematics Achievement. FAR and CAR groups do not show any difference in promoting immediate Mathematics Achievement. FCAR group is significantly more effective than FAR and CAR in enhancing immediate Mathematics Achievement.

At low family-risk level, control and intervention groups differ in their effect on delayed post-intervention scores of Mathematics Achievement. FAR, CAR, and

FCAR groups have significant effect on enhancing the delayed Mathematics Achievement. FAR is better than CAR in promoting delayed Mathematics Achievement. FAR and FCAR groups do not show any difference in promoting delayed post-intervention scores of Mathematics Achievement. CAR and FCAR do not differ in promoting delayed post-intervention scores of Mathematics Achievement.

### **Gain in Protective Factors by Intervention at High Family-Risk Level**

To answer the questions ‘Can FAR, CAR and FCAR enhance protective factors among students at High family-Risk Level?’ and “Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on gain in each of the select protective factors among students at High family-Risk Level? If so, which level of intervention is more effective in enhancing each of the protective factors?”, analysis of variance of each protective factor were carried out. Results are presented under separate headings for within child, and family protective factors.

### **Gain in within-child protective factors by intervention at high family-risk level**

This section presents the results of testing the hypotheses that, ‘At high family-risk level, mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose and vi) Peer Support is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the control group’. For a summary view of the gain in within-child protective factors in four groups, means and standard deviations of them are presented in Table 62.

**Table 62**

*Means and Standard Deviations of Gain Scores of the Within-Child Protective Factors in Control, FAR, CAR, and FCAR Groups at High Family-Risk Level*

<u>Within-child Protective Factors</u>	<u>Groups</u>							
	<u>Control<sup>a</sup></u>		<u>FAR<sup>b</sup></u>		<u>CAR<sup>c</sup></u>		<u>FCAR<sup>d</sup></u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Social Competence	15.66	6.22	13.07	6.43	18.21	7.95	19.53	5.36
Problem Solving Skill	18.60	11.88	14.87	4.67	21.00	7.83	22.07	6.79
Critical Consciousness	14.53	6.22	17.20	6.97	16.32	4.97	21.07	3.86
Autonomy	12.53	4.34	12.13	3.62	12.21	5.85	17.00	3.64
Sense of Purpose	18.55	7.63	14.07	5.09	25.30	7.87	21.33	5.30
Peer Support	16.00	6.20	13.20	5.76	18.79	7.75	20.20	9.81

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=15, <sup>d</sup>n=15

Gain in Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 63.

**Table 63**

*ANOVA of Gain Scores of Within-Child Protective Factors by Interventions at High Family-Risk Level*

	Source of variance	SS	df	MS	F
Social Competence	Between groups	365.88	3	121.96	2.86**
	Within groups	2344.36	55	42.63	
	Total	2710.24	58		
Problem Solving Skill	Between groups	455.12	3	151.71	2.24
	Within groups	3726.27	55	67.75	
	Total	4181.39	58		
Critical Consciousness	Between groups	342.18	3	114.06	3.58**
	Within groups	1751.92	55	31.85	
	Total	2094.10	58		
Autonomy	Between groups	248.92	3	82.97	4.23**
	Within groups	1077.82	55	19.60	
	Total	1326.75	58		
Sense of Purpose	Between groups	984.45	3	328.15	7.59**
	Within groups	2377.21	55	43.22	
	Total	3361.66	58		
Peer Support	Between groups	490.03	3	163.34	2.87**
	Within groups	3131.16	55	56.93	
	Total	3621.19	58		

\*\*p < .01

Table 63 shows the following results regarding the mean gain scores of within-child protective factors among the control, FAR, CAR, and FCAR groups at high family-risk level.

The main effect of intervention on Social Competence is significant,  $F(3, 55) = 2.86, p < .01$ . Mean gain scores of Social Competence of FAR group ( $M = 13.07, SD = 6.43$ ) and control group ( $M = 15.67, SD = 6.22$ ) do not differ significantly,  $t = 1.13, p > .05$ . Gain in Social Competence of CAR group ( $M = 18.21, SD = 7.95$ ) and control group ( $M = 15.67, SD = 6.22$ ) do not differ significantly,  $t = -0.97, p > .05$ . Gain in Social Competence of FCAR group ( $M = 19.53, SD = 5.36$ ) is significantly higher than that of the control group ( $M = 15.67, SD = 6.22$ ),  $t = -1.82, p < .01$ . Gain in Social Competence of the FAR group ( $M = 13.07, SD = 6.43$ ) and CAR group ( $M = 18.21, SD = 7.95$ ) do not differ significantly,  $t = -1.95, p > .05$ . Gain in Social Competence of the FCAR group ( $M = 19.53, SD = 5.36$ ) is significantly higher than that of FAR group ( $M = 13.07, SD = 6.43$ ),  $t = -2.99, p < .05$ . Mean gain scores of Social Competence of FCAR group ( $M = 19.53, SD = 5.36$ ) and that of the CAR group ( $M = 18.21, SD = 7.95$ ) do not differ significantly,  $t = -0.53, p > .05$ .

At high family-risk level, main effect of intervention on gain in Problem Solving Skill is not significant,  $F(3, 55) = 2.24, p > .05$ .

The main effect of intervention on Critical Consciousness is significant,  $F(3, 55) = 3.58, p < .01$ . There is no significant difference between the mean gain scores of Critical Consciousness of FAR group ( $M = 17.20, SD = 6.97$ ) and control group ( $M = 14.53, SD = 6.22$ ),  $t = -1.11, p > .05$ ; and between those of CAR group ( $M = 16.32, SD = 4.97$ ) and control group ( $M = 14.53, SD = 6.22$ ),  $t = -0.87, p > .05$ . Gain in Critical Consciousness of FCAR group ( $M = 21.07, SD = 3.86$ ) is significantly higher than that of the control group ( $M = 14.53, SD = 6.22$ ),  $t = -3.46, p < .01$ . Gain in Critical Consciousness of the FAR group ( $M = 17.20, SD = 6.97$ ) and CAR group ( $M = 16.32, SD = 4.97$ ) do not differ significantly,  $t = -0.40, p > .05$ ; and that of FCAR group ( $M = 21.07, SD = 3.86$ ) and FAR group ( $M = 17.20, SD = 6.97$ ) do not

differ significantly,  $t = -1.88$ ,  $p > .05$ . Mean gain scores of Critical Consciousness of FCAR group ( $M = 21.07$ ,  $SD = 3.86$ ) is significantly higher than that of the CAR group ( $M = 16.32$ ,  $SD = 4.97$ ),  $t = -2.92$ ,  $p < .05$ .

The main effect of intervention on Autonomy is significant,  $F(3, 55) = 4.23$ ,  $p < .01$ . There is no significant difference in the mean gain scores of Autonomy of FAR group ( $M = 12.13$ ,  $SD = 3.62$ ) and control group ( $M = 12.53$ ,  $SD = 4.34$ ),  $t = 0.27$ ,  $p > .05$ ; and between that of CAR group ( $M = 12.21$ ,  $SD = 5.85$ ) and the control group ( $M = 12.53$ ,  $SD = 4.34$ ),  $t = 0.17$ ,  $p > .05$ . Autonomy of FCAR group ( $M = 17.00$ ,  $SD = 3.64$ ) is significantly higher than that of the control group ( $M = 12.53$ ,  $SD = 4.34$ ),  $t = -3.06$ ,  $p < .05$ . Autonomy of the FAR group ( $M = 12.13$ ,  $SD = 3.62$ ) and CAR group ( $M = 12.21$ ,  $SD = 5.85$ ) do not differ significantly in the mean gain scores,  $t = -0.05$ ,  $p > .05$ . Mean gain score of Autonomy of FCAR group ( $M = 17.00$ ,  $SD = 3.64$ ) is significantly higher than that of FAR group ( $M = 12.13$ ,  $SD = 3.62$ ),  $t = -3.67$ ,  $p < .01$ . Mean gain score of Autonomy of FCAR ( $M = 17.00$ ,  $SD = 3.64$ ) is significantly higher than that of the CAR group ( $M = 12.21$ ,  $SD = 5.85$ ),  $t = -2.69$ ,  $p < .01$ .

The main effect of intervention on Sense of Purpose is significant,  $F(3, 55) = 7.59$ ,  $p < .01$ . The mean gain score of Sense of Purpose of FAR ( $M = 14.07$ ,  $SD = 5.09$ ) group is not significantly higher than that of the control ( $M = 18.55$ ,  $SD = 7.63$ ) group,  $t = 1.89$ ,  $p > .05$ . The mean gain score of Sense of Purpose of CAR ( $M = 25.30$ ,  $SD = 7.87$ ) group is significantly higher than that of the control ( $M = 18.55$ ,  $SD = 7.63$ ) group,  $t = -2.38$ ,  $p < .05$ . There is no significant difference between the mean gain scores of Sense of Purpose of FCAR ( $M = 21.33$ ,  $SD = 5.30$ ) group and that of the control ( $M = 18.55$ ,  $SD = 7.63$ ) group,  $t = -1.16$ ,  $p > .05$ . The mean gain score of Sense of Purpose of CAR ( $M = 25.30$ ,  $SD = 7.87$ ) group is significantly higher than that of FAR ( $M = 14.07$ ,  $SD = 5.09$ ) group,  $t = -4.64$ ,  $p < .05$ . Mean gain score of Sense of Purpose of FCAR ( $M = 21.33$ ,  $SD = 5.30$ ) group is significantly higher than that of FAR ( $M = 14.07$ ,  $SD = 5.09$ ) group,  $t = -3.83$ ,  $p < .05$ . There is no significant difference between mean gain scores of Sense of Purpose of CAR

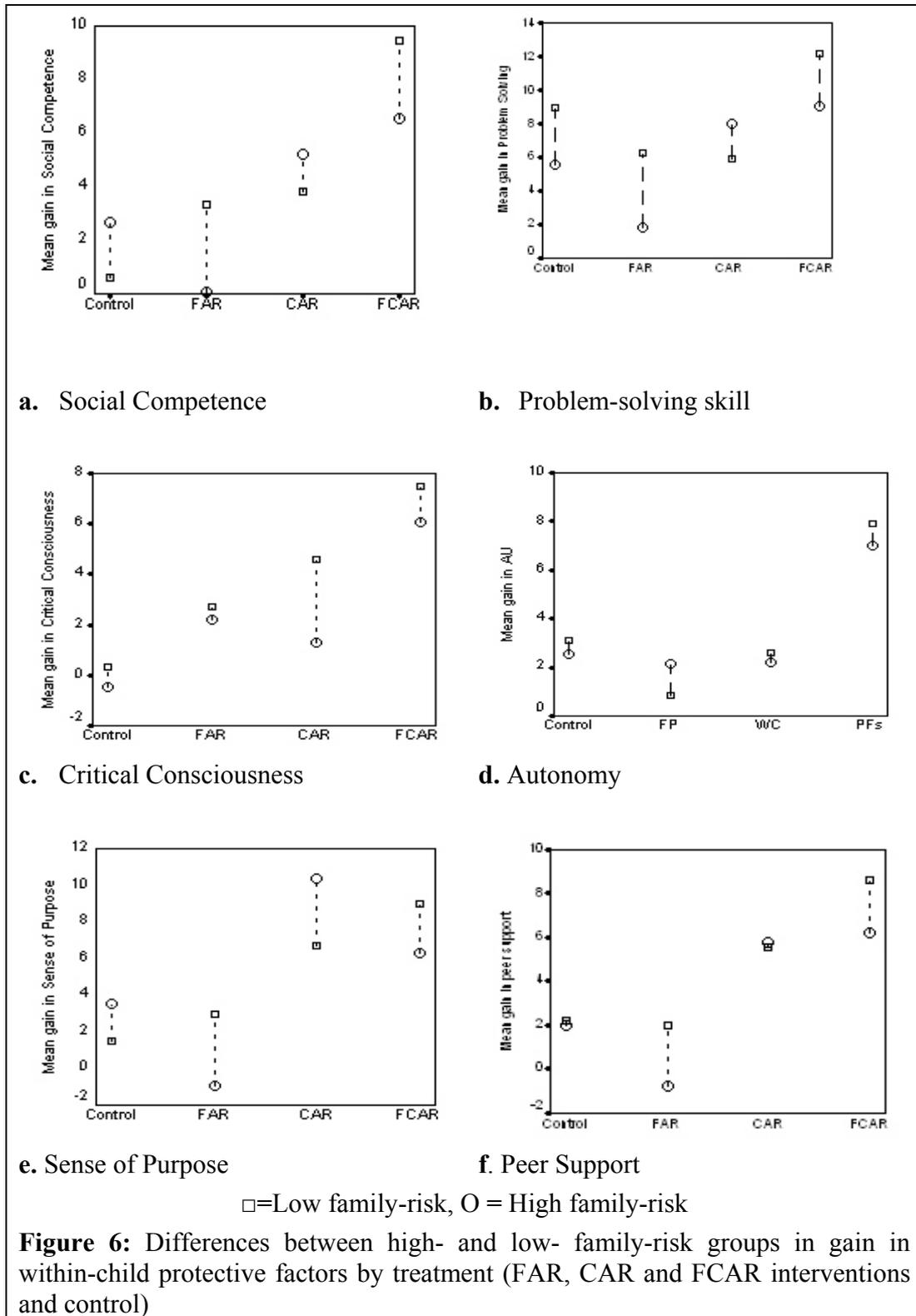
( $M= 25.30$ ,  $SD= 7.87$ ) group and FCAR ( $M= 21.33$ ,  $SD= 5.30$ ) group,  $t= 1.62$ ,  $p > .05$ .

The main effect of intervention on Peer Support is significant,  $F(3, 55) = 2.87$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Peer Support of FAR ( $M=13.20$ ,  $SD= 5.76$ ) group and control ( $M= 16.00$ ,  $SD= 6.20$ ) group,  $t= 1.28$ ,  $p > .05$ ; and those between CAR ( $M= 18.79$ ,  $SD= 7.75$ ) group and control ( $M= 16.00$ ,  $SD= 6.20$ ) group,  $t= -1.09$ ,  $p > .05$ ; and also those between FCAR ( $M= 20.20$ ,  $SD= 9.81$ ) and control ( $M= 16.00$ ,  $SD= 6.20$ ) group,  $t= -1.40$ ,  $p > .01$ . Mean gain score of Peer Support of CAR ( $M= 18.79$ ,  $SD= 7.75$ ) group is significantly higher than that of FAR ( $M= 13.20$ ,  $SD= 5.76$ ),  $t= -2.24$ ,  $p < .05$ . Mean gain score of Peer Support of FCAR ( $M= 20.20$ ,  $SD= 9.81$ ) group is significantly higher than that of FAR ( $M= 13.20$ ,  $SD= 5.76$ ) group,  $t= -2.38$ ,  $p < .05$ . There is no significant difference between gain in Peer Support of CAR ( $M= 18.79$ ,  $SD= 7.75$ ) group and FCAR ( $M= 20.20$ ,  $SD= 9.81$ ) group,  $t= -0.44$ ,  $p > .05$ .

### **Discussion**

At high family-risk level, five protective factors viz., Social Competence, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support differ significantly ( $p < .01$ ) among FAR, CAR, FCAR and control groups i.e., the intervention made significant difference in these protective factors of intervention groups. At high family-risk level, FAR has no significant effect on fostering the within-child protective factors. At high family-risk level, CAR is effective in fostering within-child protective factor, Sense of Purpose only. At high family-risk level, FCAR has significant effect on fostering Social Competence, Critical Consciousness, and Autonomy. At high family-risk level, CAR is more effective than FAR in fostering Sense of Purpose, and Peer Support. At high family-risk level, FCAR is more effective than FAR in fostering all the four within-child protective factors except Problem Solving Skill and Critical Consciousness. At high family-risk level, FCAR is more effective than CAR in fostering the protective factors Critical Consciousness and Autonomy. A summary view of the comparative post-

experimental gain in within-child protective factors by the level of family-risk is presented in figure 6.



**Gain in family protective factors by intervention in high family-risk level**

This section presents the results of testing the hypotheses that, ‘at high family-risk level, mean gain score of each of the protective factor viz., vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in 1) FAR, 2) CAR and 3) FCAR groups than in the control group’. For a summary view of the gain in family protective factors in four groups, mean and standard deviation of them are presented in table 64.

**Table 64**

*Means and Standard Deviations of Gain Scores of the Family Protective Factors in Control, FAR, CAR, and FCAR Groups at High Family-Risk Level*

Family Protective Factors	Group							
	Control <sup>a</sup>		FAR <sup>b</sup>		CAR <sup>c</sup>		FCAR <sup>d</sup>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Family Resources	18.07	6.96	21.20	5.35	24.00	7.26	25.27	6.77
Family Psychological Nurturance	16.67	10.84	26.60	7.53	29.93	16.15	29.67	5.96
Family Environment	13.33	5.30	14.93	5.60	26.95	11.53	16.67	4.58
Authoritative Parenting	10.27	2.63	8.67	3.70	7.69	4.53	28.60	8.71

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=13, <sup>d</sup>n=15

In high family risk level, gain in Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting were compared among the groups, first using one-way ANOVA, and subsequently via, post hoc comparison with test of significance of difference between means. The results are presented in Table 65.

**Table 65**

*ANOVA of Gain Scores of Family Protective Factors by Interventions at High Family-Risk Level*

Family Protective Factors	Source of variation	Sum of Squares	df	Mean Square	F
Family Resources	Between Groups	453.46	3	151.15	
	Within Groups	2352.27	54	43.56	3.47**
	Total	2805.72	57		
Family Psychological Nurturance	Between Groups	1748.07	3	582.69	
	Within Groups	6067.04	54	112.35	5.19**
	Total	7815.10	57		
Family Environment	Between Groups	1541.18	3	513.73	
	Within Groups	2719.60	54	50.36	10.20**
	Total	4260.78	57		
Authoritative Parenting	Between Groups	4350.35	3	1450.12	
	Within Groups	1596.64	54	29.57	49.05**
	Total	5946.98	57		

\*\*p < .01

Table 65 shows the following results regarding the mean gain scores of family protective factors among the control, FAR, CAR, and FCAR groups at high family-risk level.

The main effect of intervention on Family Resources is significant,  $F(3, 54) = 3.47$ ,  $p < .01$ . There is no significant difference in the mean gain score of Family Resources of FAR ( $M = 21.20$ ,  $SD = 5.35$ ) group and control ( $M = 18.07$ ,  $SD = 6.96$ ) group,  $t = -1.38$ ,  $p > .05$ . Mean gain score of CAR ( $M = 24.00$ ,  $SD = 7.26$ ) is significantly higher than that of control ( $M = 18.07$ ,  $SD = 6.96$ ) group,  $t = -2.20$ ,  $p < .05$ . Mean gain score of FCAR ( $M = 25.27$ ,  $SD = 6.77$ ) group is significantly higher than that of control ( $M = 18.07$ ,  $SD = 6.96$ ) group,  $t = -2.87$ ,  $p < .05$ . There is no

significant difference between the mean gain scores of Family Resources of FAR (M= 21.20, SD= 5.35) and CAR (M= 24.00, SD= 7.26) groups,  $t = -1.15$ ,  $p > .05$ ; between those of FCAR (M= 25.27, SD= 6.77) and FAR (M= 21.20, SD= 5.35) groups,  $t = -1.83$ ,  $p > .05$ ; and between those of CAR (M= 24.00, SD= 7.26) group and FCAR (M= 25.27, SD= 6.77) group,  $t = -0.48$ ,  $p > .05$ .

The main effect of intervention on Family Psychological Nurturance is significant,  $F(3, 54) = 5.19$ ,  $p < .01$ . Mean gain score of Family Psychological Nurturance of FAR (M= 26.60, SD= 7.53) group is significantly higher than that of control (M= 16.67, SD= 10.84) group,  $t = -2.91$ ,  $p < .05$ . Mean gain score of CAR (M= 29.93, SD= 16.15) group is significantly higher than that of control (M= 16.67, SD= 10.84) group,  $t = -2.51$ ,  $p < .05$ . Mean gain score of FCAR (M= 29.67, SD= 5.96) group is significantly higher than that of control (M= 16.67, SD= 10.84) group,  $t = -4.07$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Family Psychological Nurturance of FAR (M= 26.60, SD= 7.53) and CAR (M= 29.93, SD= 16.15) groups,  $t = -0.68$ ,  $p > .05$ ; between those of FCAR (M= 29.67, SD= 5.96) and FAR (M= 26.60, SD= 7.53) groups,  $t = -1.24$ ,  $p > .05$ ; and between those of CAR (M= 29.93, SD= 16.15) group and FCAR (M= 29.67, SD= 5.96) group,  $t = 0.05$ ,  $p > .05$ .

The main effect of intervention on Family Environment is significant,  $F(3, 54) = 10.20$ ,  $p < .01$ . There is no significant difference between the mean gain score of Family Environment of FAR (M= 14.93, SD= 5.60) group and that of control (M= 13.33, SD= 5.30) group,  $t = -0.80$ ,  $p > .05$ . Mean gain score of Family Environment of CAR (M= 26.95, SD= 11.53) group is significantly higher than that of control (M= 13.33, SD= 5.30) group,  $t = -3.92$ ,  $p < .01$ . Mean gain score of FCAR (M= 16.67, SD= 4.58) is significantly higher than that of control (M= 13.33, SD= 5.30) group,  $t = -1.85$ ,  $p < .05$ . The mean gain score of Family Environment of CAR (M= 26.95, SD= 11.53) group is significantly higher than that of FAR (M= 14.93, SD= 5.60) group,  $t = -3.42$ ,  $p < .01$ . There is no significant difference between mean gain scores of Family Environment of FAR (M= 14.93, SD= 5.60) and FCAR

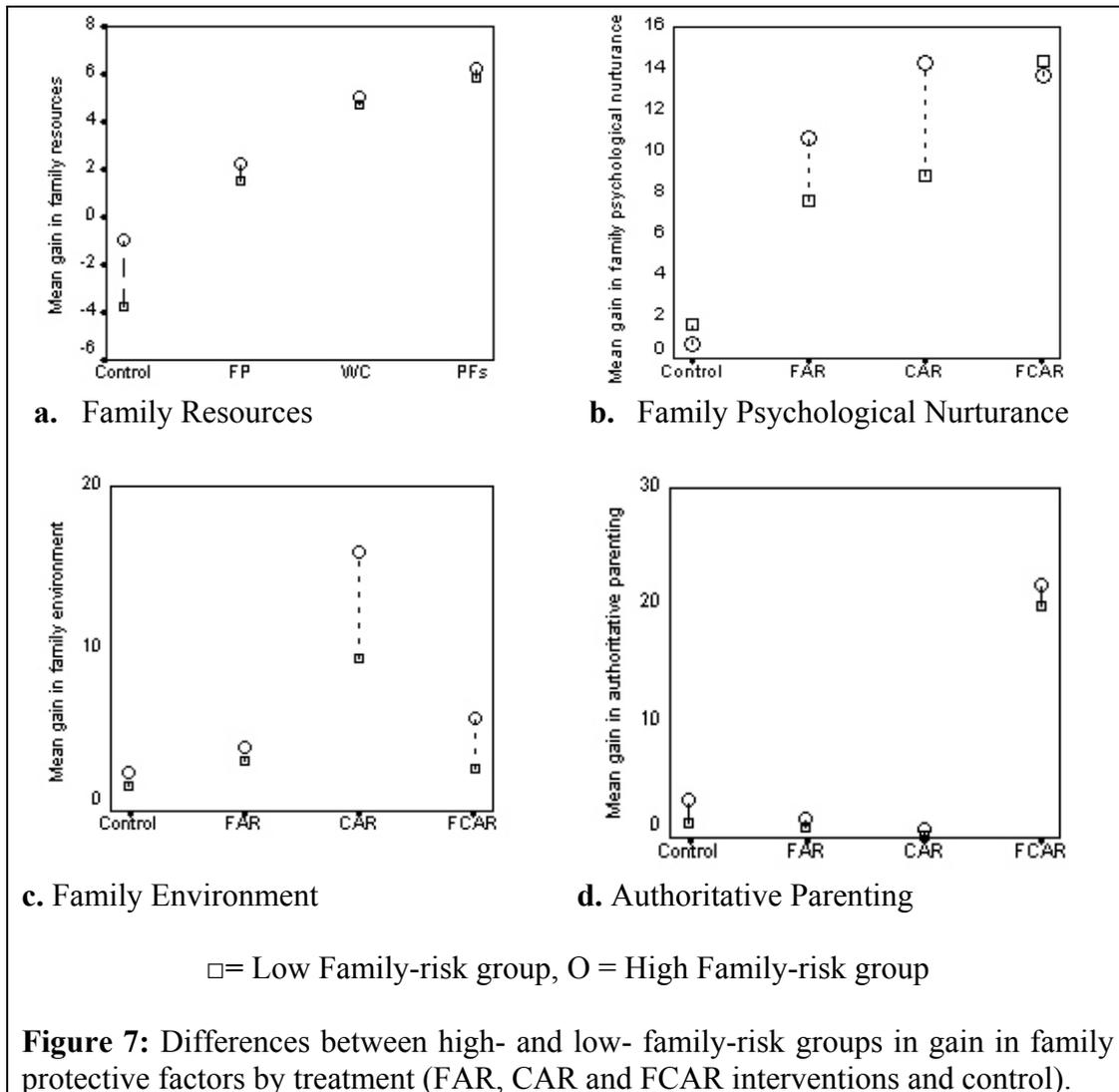
(M= 16.67, SD= 4.58) groups,  $t = 0.93$ ,  $p > .05$ . The mean gain score of Family Environment of CAR (M= 26.95, SD= 11.53) group is significantly higher than that of FCAR (M= 16.67, SD= 4.58) group,  $t = 3.02$ ,  $p < .01$ .

The main effect of intervention on Authoritative Parenting is significant,  $F(3, 54) = 49.05$ ,  $p < .01$ . There is no significant difference between the mean gain score of Authoritative Parenting of FAR (M= 8.67, SD= 3.70) group and that of control (M= 10.27, SD= 2.63) group,  $t = 1.37$ ,  $p > .05$ . Mean gain score of Authoritative Parenting of CAR (M= 7.69, SD= 4.53) group is not significantly higher than that of control (M= 10.27, SD= 2.63) group,  $t = 1.81$ ,  $p > .05$ . Mean gain score of FCAR (M= 28.60, SD= 8.71) group is significantly higher than that of control (M= 10.27, SD= 2.63) group,  $t = -7.80$ ,  $p < .01$ . There is no significant difference between the mean gain scores of Authoritative Parenting of FAR (M= 8.67, SD= 3.70) and CAR (M= 7.69, SD= 4.53) groups,  $t = 0.62$ ,  $p > .05$ . Mean gain score of Authoritative Parenting of FCAR (M= 28.60, SD= 8.71) group is significantly higher than that of FAR (M= 8.67, SD= 3.70) group,  $t = -8.16$ ,  $p < .01$ . Mean gain score of Authoritative Parenting of FCAR (M= 28.60, SD= 8.71) group is significantly higher than that of CAR (M= 7.69, SD= 4.53) group,  $t = -8.12$ ,  $p < .01$ .

## Discussion

At high family-risk level, all the four family protective factors viz., Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting differ significantly ( $p < .01$ ) among FAR, CAR, FCAR and control groups i.e., the intervention has significant effect on fostering family protective factors. At high family-risk level, FAR has significant effect on fostering Family Psychological Nurturance. At high family-risk level, CAR is effective in fostering Family Resources, Family Psychological Nurturance, and Family Environment. FCAR has significant effect on fostering all the four family protective factors. At high family-risk level, CAR is more effective than FAR in fostering the

protective factor, Family Environment. At high family-risk level, FCAR is more effective than FAR in fostering the protective factor, Authoritative Parenting. A summary view of the comparative post experimental gain in family protective factors by the level of family-risk is presented in figure 7.



### Gain in achievement by intervention at high family-risk level

To answer the questions, ‘can FAR, CAR and FCAR enhance student achievement, at high family-risk level?’ ‘Do the level of interventions (FAR, CAR, and FCAR) differ in their effect on enhancing student achievement? If so, which level of intervention is more effective in enhancing student achievement at high

family-risk level?’ analysis of variance of immediate and delayed post test achievement scores of Mathematics were carried out. For a summary view of the scores of the immediate and delayed post-intervention achievement in the control, FAR, CAR, and FCAR groups, means and standard deviations of them are presented in Table 66.

**Table 66**

*Means and Standard Deviations of Scores of Post-Intervention Achievement in Mathematics among Control, FAR, CAR, and FCAR Groups at High Family-Risk Level*

Academic Achievement	Groups							
	Control <sup>a</sup>		FAR <sup>b</sup>		CAR <sup>c</sup>		FCAR <sup>d</sup>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Immediate Achievement in Mathematics	24.20	4.39	24.47	4.24	27.93	7.67	28.87	8.35
Delayed Achievement in Mathematics	31.40	2.29	44.40	2.85	34.29	9.04	34.33	3.62

<sup>a</sup>n=15, <sup>b</sup>n=15, <sup>c</sup>n=14, <sup>d</sup>n=15

Results of one-way ANOVA of immediate and delayed post-intervention achievement in Mathematics of control, FAR, CAR, and FCAR groups are given in Table 67.

**Table 67**

*ANOVA of Immediate- and Delayed Post-Intervention Achievement in Mathematics at High Family-Risk Level.*

Academic achievement	Source of Variance	Sum of Squares	df	Mean Square	F
Immediate Achievement	Between Groups	255.13	3	85.04	2.05
	Within Groups	2320.80	56	41.44	
	Total	2575.93	59		
Delayed Achievement	Between Groups	1457.53	3	485.84	18.64**
	Within Groups	1433.39	55	26.06	
	Total	2890.92	58		

\*\*p < .01

Table 67 shows the results regarding the effect of intervention on Mathematics Achievement at high family-risk level.

Main effect of intervention on immediate achievement in Mathematics is not significant,  $F(3, 56) = 2.05, p > .05$ .

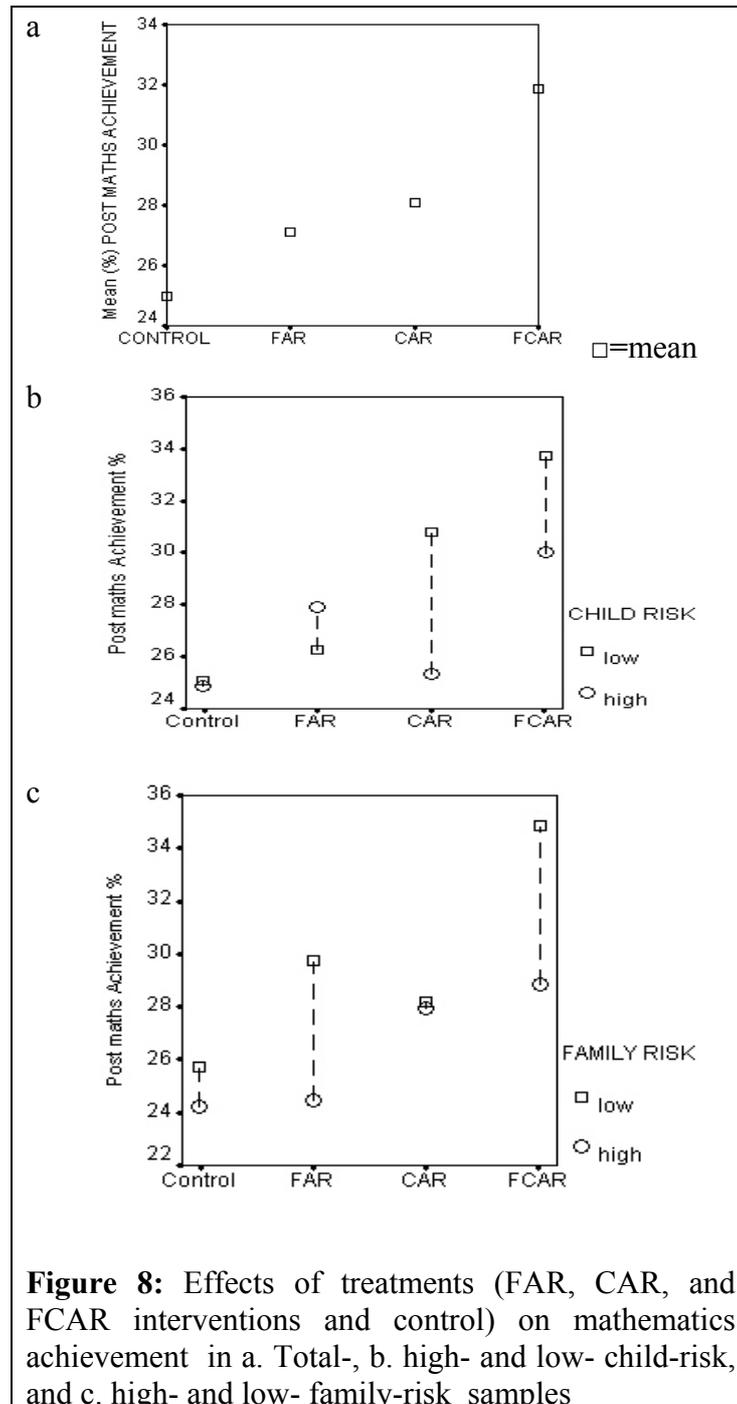
Main effect of intervention on delayed achievement in Mathematics is significant,  $F(3, 56) = 18.64, p < .01$ . Mean delayed Mathematics Achievement of FAR ( $M = 44.40, SD = 2.85$ ) group is significantly higher than that of control ( $M = 31.40, SD = 2.29$ ) group,  $t = -13.77, p < .01$ . There is no significant difference in mean delayed Mathematics Achievement between CAR ( $M = 34.29, SD = 9.04$ ) group and control ( $M = 31.40, SD = 2.29$ ) group,  $t = -1.16, p > .05$ . Mean delayed Mathematics Achievement of FCAR ( $M = 34.33, SD = 3.62$ ) is significantly higher than that of control ( $M = 31.40, SD = 2.29$ ) group,  $t = -2.65, p < .05$ . Mean delayed Mathematics Achievement of FAR ( $M = 44.40, SD = 2.85$ ) group is significantly higher than that of CAR ( $M = 34.29, SD = 9.04$ ) group,  $t = 4.00, p < .01$ . Mean delayed Mathematics Achievement of FAR ( $M = 44.40, SD = 2.85$ ) is significantly higher than that of FCAR ( $M = 34.33, SD = 3.62$ ) group,  $t = 8.47, p < .01$ . There is no significant difference between delayed Mathematics Achievement of CAR ( $M = 34.29, SD = 9.04$ ) group and FCAR ( $M = 34.33, SD = 3.62$ ) group,  $t = -0.02, p > .05$ .

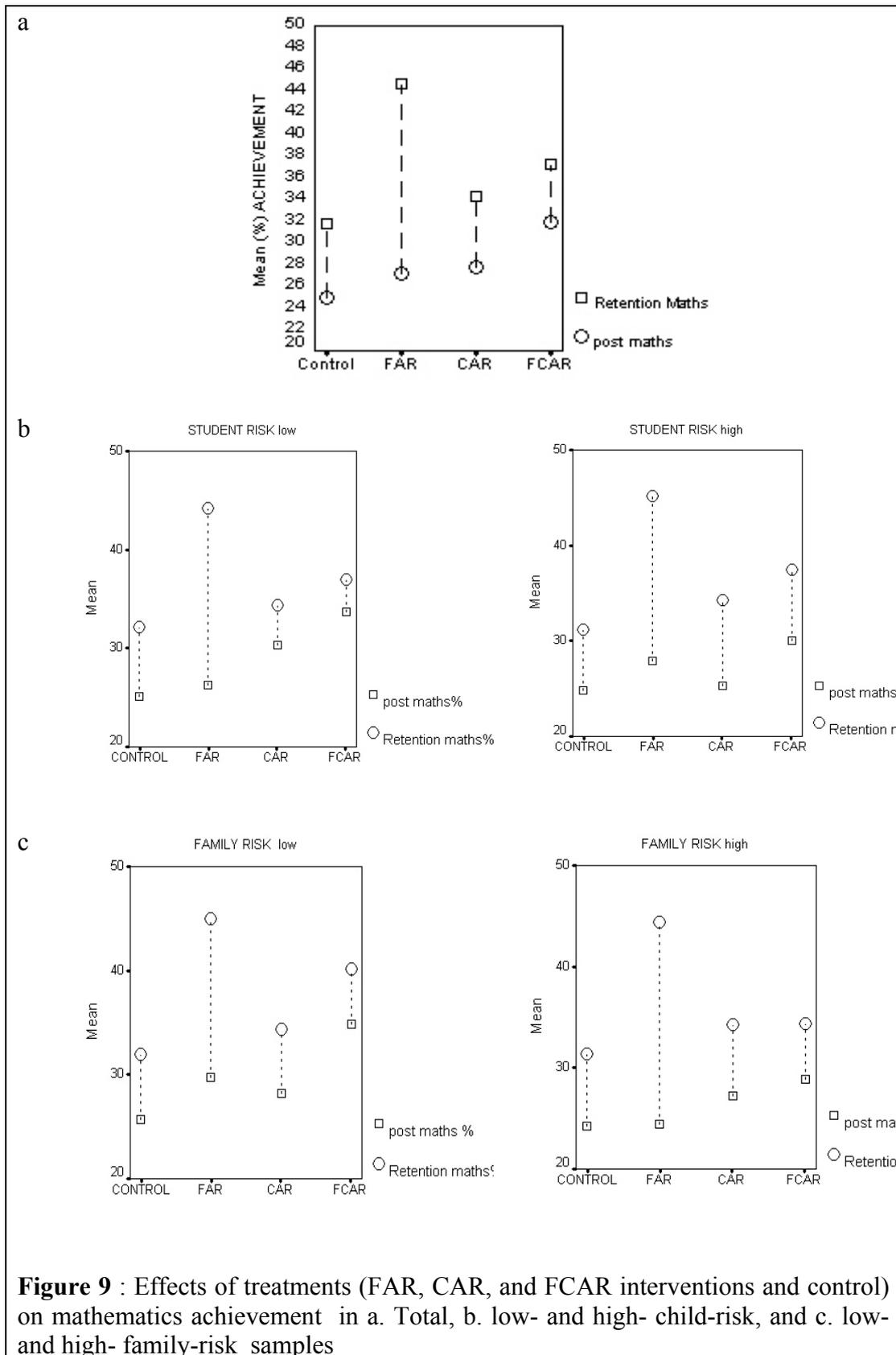
## Discussion

At high family-risk level, control and intervention groups do not differ in their effect on immediate post-intervention scores of Mathematics Achievement.

At high family-risk level, control and intervention groups differ in their effect on delayed post-intervention scores of Mathematics Achievement. FAR, and FCAR have significant effect on enhancing delayed Mathematics Achievement. CAR group has no significant effect on enhancing delayed Mathematics Achievement. FAR is more effective than CAR and FCAR in promoting delayed

Mathematics Achievement. CAR and FCAR do not differ in delayed Mathematics Achievement. A summary view of the comparative post- experimental achievement in mathematics in total sample and by the levels of child-risk and family-risk are presented in figure 8 and 9.





**Effect of Interventions on Achievement after Adjusting the Pre-Intervention  
Differences among the Experimental Groups**

ANCOVA was employed to find out the effect of intervention on fostering academic resilience in terms of achievement after adjusting for the pre-intervention differences if any in child-risk, family-risk, and mathematics pre-achievement. The index of achievement is immediate post-treatment score of achievement in Mathematics. Results are presented in Table 68.

**Table 68**

*ANCOVA of Immediate Post-Intervention Achievement in Mathematics with Mathematics Pre-achievement, Child-Risk, and Family-Risk as Covariates*

Source	Type III Sum of Squares	df	Mean Square	F	Partial Eta Squared
Corrected Model	1201.67 <sup>a</sup>	6	200.28	5.09	.213
Intercept	94080.00	1	94080.00	2389.90	.955
Level of experiment	565.36	3	188.45	4.79	.113
Mathematics pre- achievement	451.39	1	451.39	11.47	.092
Child-risk	33.62	1	33.62	.85	.008
Family-risk	151.31	1	151.31	3.84	.033
Error	4448.33	113	39.37		
Total	99730.00	120			
Corrected Total	5650.00	119			

a- R squared = .213 (Adjusted R squared) = .171

b- Computed using alpha = .05

From the table 68 it is evident that there is significant effect of intervention on achievement in Mathematics when the pre-experimental level of previous Mathematics achievement, child-risk, and family-risk were covariates,  $F(3, 113) = 5.09$ ,  $p < .05$ . The test of significance of difference between the adjusted means of immediate achievement test scores of Mathematics was conducted as a follow up to reveal which groups have significantly higher /lower scores on Mathematics achievement.

Means and adjusted means of post-intervention achievement scores of Mathematics among Control, FAR, CAR, and FCAR groups are given in Table 69.

**Table 69**

*Means and Adjusted Means of Post-Intervention Achievement Scores of Mathematics among Control, FAR, CAR, and FCAR Groups*

Control <sup>a</sup>		FAR <sup>b</sup>		CAR <sup>c</sup>		FCAR <sup>d</sup>	
Mean	Adjusted Mean	Mean	Adjusted Mean	Mean	Adjusted Mean	Mean	Adjusted Mean
24.97	25.48	27.10	26.97	28.07	28.09	31.87	31.47

<sup>a</sup>n=30, <sup>b</sup>n=30, <sup>c</sup>n=30, <sup>d</sup>n=30

Critical ratios obtained for the difference between adjusted means of post intervention achievement scores of mathematics of control group with experimental groups are given in Table 70.

**Table 70**

*Test of Significance of Difference between Adjusted Means of Post-Intervention Achievement in Mathematics among Control, FAR, CAR, and FCAR Groups*

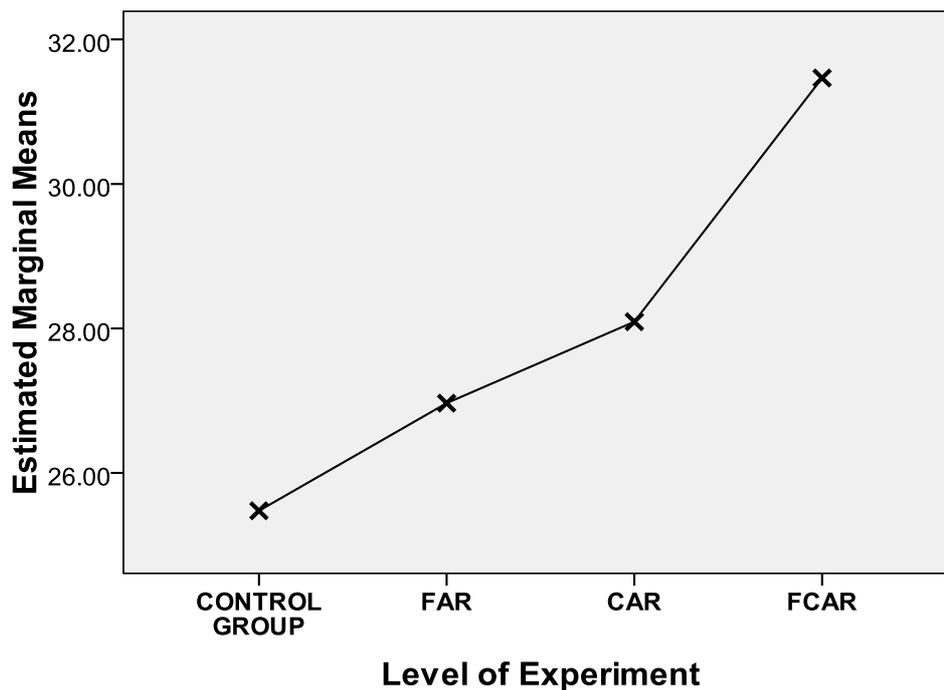
<u>Groups Compared</u>		Mean* Difference	Standard Error	t
Group 1	Group 2			
Control Group	FAR	-1.49	1.71	-0.87
	CAR	-2.62	1.70	-1.54
	FCAR	-5.99	1.66	-3.62
FAR	CAR	-1.13	1.65	-0.68
	FCAR	-4.50	1.66	-2.71
CAR	FCAR	-3.37	1.65	-2.05

\*Based on estimated marginal means

There is no significant difference between the adjusted mean of immediate achievement score of Mathematics of FAR (Adjusted Mean = 26.97) group and that of control (Adjusted Mean = 25.48) group,  $t = -0.87$ ,  $p > .05$ ; and also between the adjusted mean of immediate post-test score of Mathematics of CAR (Adjusted Mean

= 28.09) and that of control (Adjusted Mean =25.48) groups,  $t = -1.54$ ,  $p > .05$ . There is significantly high score in FCAR (Adjusted Mean =31.47) group than that of control (Adjusted Mean =25.48) group,  $t = -3.62$ ,  $p < .05$ . There is no significant difference between the adjusted mean of immediate achievement score of Mathematics of FAR (Adjusted Mean = 26.97) and that of CAR (Adjusted Mean = 28.09) groups,  $t = -0.68$ ,  $p > .05$ . There is significantly higher score in FCAR ( $M = 31.87$ ,  $SD = 7.31$ ) group than that of the FAR (Adjusted Mean = 26.97),  $t = -2.71$ ,  $p < .05$ ; and also significantly higher score in FCAR (Adjusted Mean =31.47) group than that of the CAR (Adjusted Mean = 28.09) group,  $t = -2.05$ ,  $p < .05$ .

The effect of interventions on academic resilience indicated by adjusted means of achievement in Mathematics is depicted in figure 10.



Covariates appearing in the model are evaluated at the following values: Maths pre-achievement = 4.4250, child-risk total = 41.2417, family-risk total = 31.0433

**Figure 10** Effects of interventions on academic resilience indicated by adjusted means of achievement in Mathematics

## **Discussion**

Effect of FAR and CAR interventions on academic resilience after adjusting for the pre-intervention differences in child-risk, family-risk, and mathematics pre-achievement are not significant. But FCAR intervention could foster the academic resilience even after adjusting for the pre-intervention differences in child-risk, family-risk, total pre-achievement, and mathematics pre-achievement. FCAR is better than FAR and CAR in promoting Mathematics achievement after adjusting for the pre-initial differences.

## **Delayed Post-Test Scores of Select Protective Factors**

After completing the experimental intervention, the same scales of both within-child and family protective factors were administered after three months from the completion of intervention to check the retention of gain in protective factors. The results are presented in the Table 71.

**Table 71**

*ANOVA of Delayed Post-test Scores of Within-child and Family Protective Factors by Treatments*

Protective Factors	Source of Variation	Sum of Squares	df	Mean Square	F
Social Competence	Between Groups	509.91	3	169.97	6.35*
	Within Groups	2917.95	109	26.77	
	Total	3427.86	112		
Problem Solving Skill	Between Groups	903.99	3	301.33	9.21*
	Within Groups	3567.08	109	32.73	
	Total	4471.06	112		
Critical Consciousness	Between Groups	185.03	3	61.08	2.56
	Within Groups	2628.07	109	24.11	
	Total	2813.10	112		
Autonomy	Between Groups	684.55	3	228.18	16.10*
	Within Groups	1531.12	108	14.18	
	Total	2215.68	111		
Sense of Purpose	Between Groups	578.61	3	192.87	5.76*
	Within Groups	3582.98	107	33.49	
	Total	4161.59	110		
Peer Support	Between Groups	631.09	3	210.36	5.06*
	Within Groups	4529.47	109	41.55	
	Total	5160.57	112		
Family Resources	Between Groups	1044.88	3	348.29	9.48*
	Within Groups	4006.57	109	36.76	
	Total	5051.45	112		
Family Psychological Nurturance	Between Groups	858.32	3	286.11	4.42*
	Within Groups	7062.00	109	64.79	
	Total	7920.00	112		
Family Environment	Between Groups	858.66	3	286.22	9.72*
	Within Groups	3209.73	109	29.45	
	Total	4068.39	112		
Authoritative Parenting	Between Groups	176.31	3	58.77	5.07*
	Within Groups	1252.80	108	11.60	
	Total	1429.11	111		

\*p < .05

Table 71 shows that mean delayed post-test scores of within-child and family protective factors by treatment in intervention and control groups differ significantly among the intervention and control groups on social competence,  $F(3, 109) = 6.35$ ,  $p < .05$ ; Problem Solving Skill,  $F(3, 109) = 9.21$ ,  $p < .05$ ; Autonomy,  $F(3, 108) = 16.10$ ,  $p < .05$ ; Sense of Purpose,  $F(3, 107) = 5.76$ ,  $p < .05$ ; Peer Support,  $F(3, 109) = 5.06$ ,  $p < .05$ ; Family Resources,  $F(3, 109) = 9.48$ ,  $p < .05$ ; Family Psychological Nurturance,  $F(3, 109) = 4.42$ ,  $p < .05$ ; Family Environment,  $F(3, 108) = 9.72$ ,  $p < .05$ ; and Authoritative Parenting,  $F(3, 109) = 5.07$ ,  $p < .05$ ).

Hence, one tailed test of significance of difference between means of delayed post-test scores of within-child and family protective factors by intervention in FCAR and control groups was conducted as a follow up to reveal which group has significantly higher scores in both within-child and family protective factors. t-values obtained for the comparison of FCAR and Control groups is presented in Table 72.

**Table 72**

*Means and Standard Deviations of Delayed Post-test Scores of the Within-Child and Family Protective Factors in Control and FCAR Groups*

<u>Protective Factors</u>	<u>Groups</u>				Critical Ratio t*
	<u>Control<sup>a</sup></u>		<u>FCAR<sup>b</sup></u>		
	Mean	SD	Mean	SD	
Social Competence	72.33	5.00	77.23	4.25	-4.09*
Problem Solving Skill	68.00	5.43	73.30	5.51	-3.75*
Autonomy	37.34	3.92	43.87	4.38	-6.02*
Sense of Purpose	86.28	5.30	90.86	5.04	-3.38*
Peer Support	82.60	6.90	87.73	6.10	-3.05*
Family Resources	70.30	7.47	75.53	4.01	-3.38*
Family Psychological Nurturance	102.37	8.92	107.60	6.67	-2.57*
Family Environment	63.67	7.10	71.07	4.08	-4.95*
Authoritative Parenting	39.77	3.64	41.62	3.20	-2.08*

<sup>a</sup>n=30, <sup>b</sup>n=30

\*p < .05

Comparison of means of delayed post-test scores of FCAR and control groups revealed that FCAR group have significantly higher means than the control group in within-child protective factors viz., social competence, problem solving skill, autonomy, sense of purpose, peer support, and in family protective factors viz., family resources, family psychological nurturance, family environment, and authoritative parenting. It was found that FCAR is the powerful intervention because it is a combination of both FAR and CAR.

**Conclusion**

From the analysis of the data obtained from pre-intervention phase it can be concluded that experimental and control group students were equivalent in relation to the total pre-achievement, achievement in mathematics, family-risk, and child-risk. Within-child protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support; and family protective factors viz., Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting scores could not be equated among the intervention and control groups. FAR couldn't foster any of the within-child protective factors, and two of the family protective factors viz., Family Environment and Authoritative Parenting. CAR and FCAR were more effective in fostering both within-child and family protective factors. FCAR was more effective in fostering both within-child and family protective factors, except one family protective factor viz., family environment. CAR is more effective in fostering family environment, i.e., students having adequate within-child protective factors can modify their family environment in order to manifest success in presence of adversities.

Among the low child-risk group, the intervention and control groups do not differ in within-child protective factors viz., Social Competence, Critical Consciousness, Autonomy, and family protective factors viz., Family Resources i.e., the intervention need some more improvement to include the low risk students to further enhance their academic resilience. CAR is more effective in fostering Sense of Purpose, Peer Support, Family Psychological Nurturance, and Family Environment when compared with FAR. FCAR is more effective in fostering Sense of Purpose, Peer Support, and Authoritative Parenting when compared with FAR. FCAR is more effective in fostering Authoritative Parenting when compared with CAR, and CAR is more effective in fostering Family Environment when compared with FCAR. Intervention and control groups differ in promoting Mathematics achievement.

Among high child-risk group, intervention was effective in fostering both within-child and family protective factors, and delayed achievement. Here, FCAR was most effective in fostering all the six within-child protective factors and four family protective factors. Here, CAR is better than FAR in fostering family environment.

In case of low family-risk group, intervention was effective in fostering all the within-child protective factors except problem solving skill, and all the four family protective factors, and Mathematics achievement. Here also CAR is better than FAR in fostering family environment. In the case of other within-child and family protective factors, FCAR is more effective in fostering academic resilience than CAR and FAR.

In high family-risk group, intervention was effective in fostering all the within-child protective factors except problem solving skill and all the four family protective factors. In high family risk group, FCAR is more successful in fostering majority of the select protective factors including social competence, critical consciousness, autonomy, family resources, family psychological nurturance, family environment, and authoritative parenting.

From these findings it can be concluded that collaborative intervention is effective in fostering academic resilience and partial intervention is effective in enhancing family environment. The family protective factor viz., family environment is fostered by CAR than FAR and FCAR. This means that within-child protective factors are powerful in fostering academic resilience, by effectively manipulating the within-child and family resources.

### **Tenability of Hypotheses**

Tenability of the hypotheses formulated for the study were verified in view of the findings and commented below.

1. Hypotheses 1(i) to 1(xii) states that “mean scores of protective factors viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from within-child source”.

Analysis of data revealed that difference in the mean scores of protective factors, viz., vi) Peer Support, vii) Family Resources, ix) Family Environment, xi) Curriculum Adaptation to Student Diversity by the level of child risk is significant ( $p < .05$ ) among secondary school students. Difference in the mean scores of protective factors, viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, viii) Family Psychological Nurturance, x) Authoritative Parenting, and xii) Caring Teachers are not significant by child-risk.

Hence, the hypotheses that “mean scores of protective factors vi) Peer Support, vii) Family Resources, ix) Family Environment, xi) Curriculum Adaptation to Student Diversity in secondary school students differ significantly based on their level (low, average, and high) of risk from within-child source” is accepted. The hypotheses that mean scores of protective factors, viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, viii) Family Psychological Nurturance, x) Authoritative Parenting, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from within-child source” is not accepted.

2. Hypotheses 2(i) to 2(xii) states that “mean scores of protective factors viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from family source”.

Analysis of data revealed that difference in the mean scores of each protective factor, viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers by the level of family risk is significant ( $p < .05$ ) among secondary school students. Difference in the mean scores of protective factor x) Authoritative Parenting is not significant by family-risk.

Hence, the hypotheses that “mean scores of protective factors i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from family source” is accepted. The hypothesis that mean score of protective factor x) Authoritative Parenting in secondary school students differ significantly based on their level (low, average, and high) of risk from family source” is not accepted.

3. Hypotheses 3(i) to 3(xii) states that “mean scores of protective factors viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family

Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from school source”.

Analysis of data revealed that difference in the mean scores of each protective factor, viz., (i) Social Competence, (ii) Problem Solving Skill, (iii) Critical Consciousness, (iv) Autonomy, (v) Sense of Purpose, (vi) Peer Support, (vii) Family Resources, (viii) Family Psychological Nurturance, (ix) Family Environment, (x) Authoritative Parenting, (xi) Curriculum Adaptation to Student Diversity, and (xii) Caring Teachers by the level of school-risk is significant ( $p < .05$ ) among secondary school students.

Hence, the hypotheses that “mean scores of protective factors i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from school source” is accepted.

4. Hypotheses 4a(i) to 4c(iv) “mean achievement scores of each secondary school subjects viz., i) Mathematics, ii) Basic Science, iii) Social Science, and iv) Information Technology significantly differ by the levels (low, average, and high) of risk sourced from (a) within-child, (b) family, and (c) school”.

Analysis of data revealed that difference in the mean achievement in subjects viz., i) Mathematics and iii) Social Science, by the level of child-risk is significant ( $p < .05$ ) among secondary school students; but it is not significant in ii) Basic Science, and iv) Information technology ( $p > .05$ ).

Hence, the hypotheses 4(a) that “mean scores of achievement in subjects viz., i) Mathematics and iii) Social Science, in secondary school students differ significantly based on their level (low, average, and high) of risk from child source” is accepted. The hypothesis that mean score of achievement in subjects viz., ii) Basic Science, and iv) Information Technology in secondary school students differ significantly based on their level (low, average, and high) of risk from child source” is not accepted.

Analysis of data revealed that difference in the mean achievement scores of subjects viz., i) Mathematics, and iv) Information technology by the level of family risk is significant ( $p < .05$ ) among secondary school students; but it is not significant in ii) Basic Science and iii) Social science, ( $p > .05$ ).

Hence, the hypotheses 4(b) that “mean scores of achievement in subjects viz., i) Mathematics, and iv) Information technology in secondary school students differ significantly based on their level (low, average, and high) of risk from family source” is accepted. The hypothesis that mean score of achievement in subjects viz., ii) Basic Science and iii) Social science in secondary school students differ significantly based on their level (low, average, and high) of risk from family source” is not accepted.

Analysis of data revealed that difference in the mean achievement scores of subjects viz., i) Mathematics, and ii) Basic Science by the level of school-risk is significant ( $p < .05$ ) among secondary school students; but it is not significant in iii) Social Science, and iv) Information Technology ( $p > .05$ ).

Hence, the hypotheses 4(c) that “mean scores of achievement in subjects viz., i) Mathematics, and ii) Basic Science in secondary school students differ significantly based on their level (low, average, and high) of risk from school source” is accepted. The hypothesis that mean score of

achievement in subjects viz., iii) Social Science, and iv) Information Technology in secondary school students differ significantly based on their level (low, average, and high) of risk from school source” is not accepted.

5. Hypotheses 5(i) to 5(x) states that “mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, is significantly higher in FAR group than in the control group”.

Analysis of data revealed that FAR group has significantly higher gain scores than the control group on two protective factors viz., vii) Family Resources, viii) Family Psychological Nurturance ( $p < .05$ ); but the groups do not differ significantly in i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, vi) Peer Support, ix) Family Environment and x) Authoritative Parenting ( $p > .05$ ).

Hence, the hypotheses that “mean gain score of the protective factors vii) Family Resources, and viii) Family Psychological Nurturance, in secondary school students is significantly higher in FAR group than in the control group” is accepted. The hypothesis that “mean gain score of protective factors i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, ix) Family Environment, x) Authoritative Parenting in secondary school students is significantly higher in FAR group than in the control group” is not accepted.

6. Hypothesis 6 states that “mean post-test scores of achievement in select subject(s) is significantly higher in FAR (Family focused intervention for fostering Academic Resilience) group than that in the control group”.

Analysis of data revealed that FAR group do not differ significantly from the control group in the mean of immediate post-test scores of achievement in Mathematics ( $p > .05$ ).

Hence, the hypothesis that “mean post-test scores of achievement in Mathematics is significantly higher in the FAR (Family focused intervention for fostering Academic Resilience) group than that in the control group” is not accepted.

7. Hypotheses 7(i) to 7(x) states that “mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in CAR group than in the control group”.

Analysis of data revealed that CAR group has significantly higher gain scores than the control group on seven protective factors viz., i) Social Competence, iii) Critical Consciousness, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment ( $p < .05$ ); but the groups do not differ significantly on the remaining three protective factors viz., i) Problem Solving Skill, iv) Autonomy, (iii), and x) Authoritative Parenting ( $p > .05$ ).

Hence, the hypothesis that “mean gain score of the protective factors i) Social Competence, iii) Critical Consciousness, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, in secondary school students is significantly higher in CAR group than in the control group is accepted. The hypothesis that “mean gain score of protective factors Problem Solving Skill, iv) Autonomy, and x) Authoritative Parenting in secondary school students is significantly higher in CAR group than in the control group” is not accepted.

8. Hypothesis 8 states that “mean post-test scores of achievement in select subject(s) is significantly higher in CAR (Child focused intervention for fostering Academic Resilience) group than that in the control group”.

Analysis of data revealed that CAR group is significantly higher than the control group on both the immediate and delayed post-test scores of achievement in Mathematics ( $p < .05$ ).

Hence, the hypothesis that “mean immediate and delayed post-test scores of achievement in Mathematics is significantly higher in the CAR (Child focused intervention for fostering Academic Resilience) group than that in the control group” is accepted.

9. Hypotheses 9(i) to 9(x) states that “mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, Viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in FCAR group than in the control group”.

Analysis of data revealed that FCAR group has significantly higher gain scores than the control group on nine protective factors viz., i) Social Competence, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting ( $p < .05$ ); but the groups do not differ significantly on the protective factor, Problem Solving Skill ( $p > .05$ ).

Hence, the hypothesis that “mean gain score of the protective factors viz i) Social Competence, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, in secondary school students is significantly higher in FCAR

group than in the control group” is accepted. The hypothesis that “mean gain score of protective factor ii) Problem Solving Skill in secondary school students in secondary school students is significantly higher in FCAR group than in the control group” is not accepted.

10. Hypothesis 10 states that “mean post-test scores of achievement in select subject(s) are significantly higher in FCAR (Family cum Child focused intervention for fostering Academic Resilience) group than that in the control group”.

Analysis of data revealed that FCAR group is significantly higher than the control group on both the immediate and delayed post-test scores of achievement in Mathematics ( $p < .05$ ).

Hence, the hypothesis that “mean immediate and delayed post-test scores of achievement in Mathematics is significantly higher in the FCAR (Family cum Child focused intervention for fostering Academic Resilience) group than that in the control group” is accepted.

11. Hypothesis 11 states that “immediate post-test scores of student achievement in select subject(s) are significantly higher in FAR group in comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any”.

In comparison to the control group, FAR group do not have significantly higher adjusted mean scores of immediate post-test of achievement in Mathematics.

Hence, the hypothesis “immediate post-test scores of student achievement in Mathematics is significantly higher in the FAR (Family focused intervention for fostering Academic Resilience) group than that in the control group” is not accepted.

12. Hypothesis 12 states that “immediate post –test scores of student achievement in select subject(s) are significantly higher in CAR group in

comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any”.

In comparison to the control group, CAR group do not have significantly higher adjusted mean scores of immediate post-test of achievement in Mathematics.

Hence, the hypothesis that “immediate post-test scores of student achievement in Mathematics is significantly higher in the CAR (Child focused intervention for fostering Academic Resilience) group than that in the control group” is not accepted.

13. Hypothesis 13 states that “immediate post –test scores of student achievement in select subject(s) are significantly higher in FCAR group in comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any”.

In comparison to the control group, FCAR group have significantly higher adjusted mean scores of immediate post-test of achievement in Mathematics.

Hence, the hypothesis that “immediate post-test scores of student achievement in Mathematics are significantly higher in the FCAR (Family and Child focused intervention for fostering Academic Resilience) group than that in the control group” is accepted.

This chapter is the study in nutshell. It includes various aspects of the study like variables, objectives, hypotheses and methodology in brief.

### **Restatement of the problem**

“Fostering Academic Resilience in At-Risk Secondary School Students through a Collaborative Intervention”

### **Variables in the survey phase**

Survey phase has attribute variables, viz., Child-Risk, Family-Risk, and School-Risk.

The criterion variables in the survey phase were the following protective factors and indices of academic achievement, viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, Peer Support, Family Resources, Family Psychological Nurturance, Family Environment, Authoritative Parenting, Curriculum Adaptation to Student Diversity, Caring Teachers, Achievement in Mathematics, Achievement in Basic Science, Achievement in Social Science, and Achievement in Information Technology

### **Variables in the experimental phase**

The experimental phase of the study took up independent variable, dependent variables, and moderator variables.

### **Independent variable**

Independent variable in this study is treatments for fostering academic resilience with following levels viz., FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), FCAR (Family and Child focused intervention for fostering Academic Resilience), and Control group (no treatment).

### **Dependent variables**

Indicators of academic resilience viz., academic achievement and protective factors are the dependent variables. Specifically, there were 11 variables viz., Academic Achievement in Mathematics, plus 10 protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, Peer Support, Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting.

### **Moderator variables**

The effect of the intervention on the academic resilience is studied for two levels (low and high) of child-risk and family-risk. Hence, i) Child-risk, and ii) Family-risk are moderator variables in this study.

### **Hypotheses tested**

This study tested the following hypotheses:

1. Mean scores of protective factors viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from within-child source.
2. Mean scores of protective factors viz., Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from family source.

3. Mean scores of protective factors viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, and vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, x) Authoritative Parenting, xi) Curriculum Adaptation to Student Diversity, and xii) Caring Teachers in secondary school students differ significantly based on their level (low, average, and high) of risk from school source.
4. Mean achievement scores of each secondary school subject viz., i) Mathematics, ii) Basic Science iii) Social Science, and iv) Information Technology, significantly differ by the levels (low, average, and high) of risk sourced from (a) within-child, (b) family, and (c) school.
5. Mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in FAR group than in the control group.
6. Mean post-test scores of achievement in select subject(s) is significantly higher in FAR (Family focused intervention for fostering Academic Resilience) group than that in the control group.
7. Mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose, (vi) Peer Support, vii) Family Resources, viii) Family Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in CAR group than in the control group.
8. Mean post-test scores of achievement in select subject(s) are significantly higher in CAR (Child focused intervention for fostering Academic Resilience) group than that in the control group.
9. Mean gain score of each of the protective factor viz., i) Social Competence, ii) Problem Solving Skill, iii) Critical Consciousness, iv) Autonomy, v) Sense of Purpose. vi) Peer Support, vii) Family Resources, viii) Family

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Psychological Nurturance, ix) Family Environment, and x) Authoritative Parenting is significantly higher in FCAR group than in the control group.

10. Mean post-test scores of achievement in select subject(s) are significantly higher in FCAR (Family cum Child focused intervention for fostering Academic Resilience) group than that in the control group.
11. Immediate post-test scores of student achievement in select subject(s) are significantly higher in FAR group in comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any.
12. Immediate post-test scores of student achievement in select subject(s) are significantly higher in CAR group in comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any.
13. Immediate post-test scores of student achievement in select subject(s) are significantly higher in FCAR group in comparison to that of the control group after adjusting for the pre-intervention differences in achievement and risks if any.

#### **Methodology**

This study was completed in two phases, a survey phase which in part suggested the variables, measures and interventions for the subsequent experimental phase.

#### **Design of the study**

First phase utilized a survey design and the second experimental phase utilized specifically pretest-post-test control group design (quasi-experimental design).

### **Sample Used**

Survey was conducted among secondary school students of Malappuram district. Six hundred and twenty students drawn from 15 randomly selected standard VIII classes constitute the sample. Data from 478 students that were complete in all respects were used for analysis.

For experimental treatment, one among the 10 schools sampled for the survey was randomly selected. In this school, four classes of standard VIII, from eight classes, approximately matching on child-risk, family-risk, and academic achievement (total and mathematics) were used in the experimental phase. In each class, data from 30 students, purposefully drawn to statistically match the four experimental groups on pre-experimental risks and achievement measures, only were used in analyzing the effectiveness of intervention.

### **Tools Used**

The study employed three categories of instruments for measuring (1) risk factors, (2) protective factors, and (3) academic achievement. Specifically the study developed and used the following sets of tools viz.,

- i. Scales of risk factors
- ii. Scales of within-child protective factors
- iii. Scales of family protective factors, and
- iv. Scales of school protective factors

Measures of the achievement were from teacher made tests.

Apart from the above tools, a programme for fostering academic resilience by inculcating protective factors, with three distinct levels, was prepared and implemented in the experimental phase.

### **Statistical Analyses**

The techniques of analysis of data employed in this study are the following.

1. Analysis of Variance (one-way)
2. Analysis of Covariance
3. Two tailed test of significance of difference between means
4. One tailed test of significance of difference between means

### **Major Findings**

The major findings of the study, derived as answers for the set research questions, are listed below with appropriate explanatory headlines.

***Within-child protective factors are significantly less, especially in high family-risk and high school-risk groups.***

1. Low, average, and high child-risk groups do not differ significantly ( $p > .05$ ) one another, on five of the six within-child protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, and Sense of Purpose.
  - a. Peer support, does significantly differ ( $p < .01$ ) by child-risk; with significantly higher peer support in high-risk students than that in average child-risk students.
2. Low, average, and high family-risk groups do differ significantly ( $p < .01$ ) one another, on all the six select within-child protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support. When the family-risk increases the within-child protective factors become less in at-risk students.
3. Low, average, and high school-risk groups do differ significantly ( $p < .01$ ) one another, on all the six within-child protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support. Within-child protective factors are less in average and high school-risk groups than low school-risk group.

***Family protective factors are significantly less, not only in high family-risk group, but also in high school-risk and high child-risk groups.***

4. Family Resources and Family Environment are better ( $p < .05$ ) among low child-risk group, than among average and high child-risk groups.
  - a. Family Psychological Nurturance and Authoritative Parenting do not differ significantly by the level of child-risk.
5. Family Resources, Family Psychological Nurturance and Family Environment are better ( $p < .05$ ) among low family-risk group, than among average and high family-risk groups.
  - a. Authoritative Parenting does not significantly differ by the level of family-risk.
6. Family Resources, Family Psychological Nurturance, Family Environment and Authoritative Parenting are better ( $p < .05$ ) among low school-risk group, than among average and high school-risk groups.

***Curriculum Adaptation to Student Diversity and Caring Teachers are significantly less for high family-risk and high school-risk groups.***

7. Low, average, and high child-risk groups differ significantly ( $p < .01$ ) one another, in Curriculum Adaptation to Student Diversity. There is significantly higher Curriculum Adaptation to Student Diversity in low child-risk group than that in average and high child-risk group.
  - a. The level of child-risk does not make a difference in Caring Teachers ( $p > .05$ ).
8. Low, average, and high family-risk groups differ significantly ( $p < .05$ ) one another, in Curriculum Adaptation to Student Diversity, and Caring Teachers. There is significantly higher Curriculum Adaptation to Student Diversity and Caring Teachers in low-risk group than that in average and high family-risk groups.

9. Low, average, and high school-risk groups differ significantly ( $p < .01$ ) one another, in Curriculum Adaptation to Student Diversity, and Caring Teachers. There is significantly higher Curriculum Adaptation to Student Diversity and Caring Teachers in low-risk group than that in average and high family-risk groups.

***Achievement in mathematics affected by risk from all three domains, achievement in social science affected by child and family risks only, that in science affected by family and school-risks.***

10. Achievement in Mathematics and Social Science does significantly differ ( $p < .01$ ) by child-risk. There is significantly higher academic achievement in Mathematics and Social Science in low child-risk group than in average child-risk group.
  - a. Low, average, and high child-risk groups do not differ significantly ( $p > .05$ ) one another, in achievement in Basic Science, and Information Technology.
11. Achievement in Mathematics and Information Technology do significantly differ ( $p < .01$ ) by family-risk. There is significantly higher academic achievement in Mathematics in low family-risk group than that in high family-risk group. There is significantly higher academic achievement in Information Technology in average family-risk group than that in high family-risk group.
  - a. Low, average, and high family-risk groups do not differ significantly ( $p > .05$ ) one another, in Basic Science, and Social Science.
12. Achievement in Mathematics and Basic Science do significantly differ ( $p < .01$ ) by school-risk. There is significantly higher academic achievement in Social Science in low school-risk group than that in high school-risk group.

In case of Mathematics, high-risk group demonstrates higher achievement than low-and average-risk groups.

- a. Low, average, and high school-risk groups do not differ significantly ( $p > .05$ ) one another, in Social Science and Information Technology achievement.

***Child-focused intervention and family cum child focused intervention effectively fosters within-child protective factors in secondary school students, with latter being more effective, especially with high child-risk students.***

1. Effect of Family focused intervention (FAR) on fostering none of the six within-child protective factors is significant, in the total group of secondary school students and in the risk-based sub-groups namely low child-risk, high child-risk, low family-risk and high family-risk. FAR is effective in fostering Critical Consciousness among high child-risk students.
2. Child-focused intervention (CAR) is effective in fostering 4/6 within-child protective factors viz., Social Competence, Critical Consciousness, Sense of Purpose, and Peer Support in total group of secondary school students.
  - a. Child-focused intervention (CAR) has no significant effect on fostering 2/6 within-child protective factors viz., Problem Solving Skill and Autonomy.
  - b. CAR is most effective among low family-risk students in whom it fosters 4/6 within-child protective factors viz., Social Competence, Critical Consciousness, Sense of Purpose, and Peer Support.
  - c. CAR is effective in fostering protective factor viz., Sense of Purpose only in students with high child-risk, and high-family risk.
  - d. Among low-child risk students CAR is effective in fostering protective factors, Sense of Purpose and Peer Support only. Here, CAR and FCAR interventions do not differ significantly.

3. Family cum child focused intervention (FCAR) has significant effect on fostering 5/6 within-child protective factors viz., Social Competence, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support, and has no effect on fostering Problem Solving Skill.
  - a. FCAR is more effective than CAR as well in fostering Critical Consciousness and Autonomy.
  - b. FCAR is most effective in high child-risk students where it can foster within-child protective factors viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support. Here, FCAR is more effective in fostering the protective factors except Sense of Purpose and Peer Support than CAR.
  - c. In high family-risk students as well, FCAR has significant effect on fostering Social Competence, Critical Consciousness, and Autonomy. FCAR is more effective than CAR in fostering the protective factors, Critical Consciousness and Autonomy.
  - d. In low family-risk students also, FCAR has significant effect on fostering Social Competence, Critical Consciousness, Autonomy, Sense of Purpose, and Peer Support. Here, FCAR is more effective than CAR, in fostering the protective factor, Autonomy.
  - e. FCAR is least effective in low child-risk students where it has no significant effect on fostering any of the protective factors. Here, CAR and FCAR interventions do not differ significantly in fostering the within-child protective factors.

*All three levels of intervention fosters family protective factors, with FAR most effective with high child-risk students and less effective in high family-risk students, CAR being especially good for fostering family environment irrespective of level and source of risk, and FCAR being most effective of the three, and in especially fostering authoritative parenting.*

- 4 In the total sample, FAR significantly fosters Family Resources and Family Psychological Nurturance, and has no effect on fostering Family Environment and Authoritative Parenting.
  - a. FAR significantly fosters two family protective factors in high child-risk students viz., Family Resources, and Family Psychological Nurturance.
  - b. FAR significantly fosters Family Resources and Family Psychological Nurturance in low family-risk students.
  - c. FAR is less effective with low child-risk students; FAR has significant effect on fostering Family Psychological Nurturance, and has no effect on fostering Family Resources, Family Environment and Authoritative Parenting.
  - d. FAR is less effective with high family-risk students, where FAR has significant effect on fostering Family Psychological Nurturance only.
  
5. CAR is effective in fostering 3/4 family-protective factors viz., Family Resources, Family Psychological Nurturance, and Family Environment in total sample, in high child-risk students, high family-risk students and in low family-risk students.
  - e. In low child-risk students CAR is effective in fostering two family protective factors viz., Family Psychological Nurturance and Family Environment.

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- f. CAR is more effective than FAR in fostering the protective factor, Family Environment in high as well as low groups on child-risk and family-risk.
  - g. CAR is more effective than FCAR in fostering the protective factor, Family Environment, in total sample and in high as well as low groups on child-risk and family-risk.
- 6 FCAR has significant effect on fostering all the family protective factors viz., Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting, in total sample, high child-risk students, low family-risk students, and high family-risk students (i.e., except in low child-risk students).
- h. In low child-risk level, FCAR has significant effect on fostering 2/4 of family protective factors viz., Family Psychological Nurturance, and Authoritative Parenting.
  - i. In low child-risk level, FAR and CAR could not make any change in Authoritative parenting; FCAR is effective in fostering Authoritative parenting.
  - j. FCAR is more effective than FAR in fostering the protective factors viz., Family Resources, Family Psychological Nurturance, and Authoritative Parenting, in total sample, in high child-risk group and low family-risk groups.
  - k. In high family-risk group, however, FCAR is more effective than FAR in fostering the protective factor, Authoritative Parenting only.
  - l. FCAR is more effective than CAR in fostering the protective factor, Authoritative Parenting in high as well as low groups of child-risk and family-risk.

***CAR and FCAR significantly fosters academic resilience (Mathematics Achievement) in the total sample, which is retained after one year; with FCAR being more effective than CAR, this advantage not being retained after one year.***

- 7 FAR has no effect on enhancing the Mathematics Achievement, in total group and in low child-risk, high child-risk, and high family-risk groups.
- 8 In high child-risk and high family-risk students, none of the interventions (FAR, CAR, and FCAR) had significant effect on immediate Mathematics achievement. However, in high risk students (sourced from child and family), FAR and FCAR treatment groups had significantly higher Mathematics achievement one year after treatment. These effects observed in FAR and FCAR groups in high risk students are not attributable to treatments only, because of lack of control over post-interventional factors that could have affected the delayed Mathematics achievement.
- 9 In total sample, CAR has significant effect on enhancing the Mathematics Achievement, and this was retained after one year, but this is largely from the effect in low child-risk group.
  - a. CAR has retainable significant effect on enhancing the Mathematics Achievement, in low-child risk students.
- 10 In total sample, FCAR has significant effect on enhancing the Mathematics Achievement, and this effect is retained after one year.
  - a. In low child-risk students, FCAR has significant effect on enhancing the Mathematics Achievement, but is not retainable after one year.
  - b. In low child-risk and low family-risk students, FCAR have significantly higher Mathematics Achievement than FAR but it is not retained after one year.

- c. In low family-risk group, FAR and FCAR have significant and retainable effect on Mathematics Achievement. Here, FCAR had a significant, but not retainable, advantage over FAR.
- d. FCAR is more effective than CAR in improving Mathematics Achievement in total sample and in low family-risk students, but these could not be retained after one year.

***Enhanced academic resilience (mathematics achievement) of students who received FCAR intervention is independent of their risk and pre-achievement.***

11 FCAR intervention could foster the academic resilience even after adjusting for the pre-intervention differences in child-risk, family-risk, and mathematics pre-achievement.

- a. Effects of FAR and CAR interventions on academic resilience after adjusting for the pre-intervention differences in child-risk, family-risk, and mathematics pre-achievement are not significant.

***Gain in protective factors achieved through family cum child focused intervention is retainable, except for critical consciousness.***

12 FCAR group have significantly higher means of delayed post-test scores than the control group in within-child protective factors viz., Social Competence, Problem Solving Skill, Autonomy, Sense of Purpose, Peer Support, and family protective factors viz., Family Resources, Family Psychological Nurturance, Family Environment, and Authoritative Parenting.

- a. FCAR intervention, which is a combination of FAR and CAR could not retain the Critical Consciousness in at-risk students.

A summary of effects of interventions on gain in within-child protective factors, gain in family protective factors and academic achievement in Mathematics (immediate and delayed) in total sample, and in risk based sub samples is depicted in figure 11.

	Low child-risk level			High child-risk level			Low family-risk level			High family-risk level			Total Sample		
	FAR	CAR	FCAR	FAR	CAR	FCAR	FAR	CAR	FCAR	FAR	CAR	FCAR	FAR	CAR	FCAR
Social Competence						↑		↑	↑			↑		↑	↑
Problem Solving Skill						↑									
Critical Consciousness				↑		↑		↑	↑			↑		↑	↑
Autonomy						↑			↑			↑			↑
Sense of Purpose		↑			↑	↑		↑	↑		↑			↑	↑
Peer Support		↑				↑		↑	↑					↑	↑
Family Resources				↑	↑	↑	↑	↑	↑		↑	↑	↑	↑	↑
Family Psychological Nurturance	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Family Environment		↑			↑	↑		↑			↑	↑		↑	↑
Authoritative Parenting			↑			↑			↑			↑			↑
Immediate Mathematics Achievement		↑	↑				↑		↑					↑	↑
Delayed Mathematics Achievement	↑	↑		↑		↑	↑	↑	↑	↑		↑	↑	↑	↑

Figure 11: Summary of effectiveness of FAR (Family focused intervention for fostering Academic Resilience), CAR (Child focused intervention for fostering Academic Resilience), and FCAR (Family cum Child focused intervention for fostering Academic Resilience) in fostering academic resilience in terms of enhanced within-child and family protective factors and achievement in mathematics among high and low risk groups of secondary school students (Note: ↑ indicates significant gain or increase in the variable; and shaded cells indicate no significant change)

**Conclusion**

It was found that among the within-child protective factors (viz., social competence, problem solving skill, critical consciousness, autonomy, sense of purpose, and peer support); only peer support varies by child-risk. However, autonomy and peer support are significantly high in high child-risk group. High family-risk and high school-risk groups have significantly less within-child protective factors. Sense of purpose, peer support and problem solving skill are less among average family-risk also.

Among the family protective factors (viz., family resources, family psychological nurturance, family environment, and authoritative parenting), family resource significantly decreases as the level of risk from within-child, family and school increases from low through average to high. Likewise, family environment is significantly high among low child-risk, low family-risk, and low school-risk groups. Family environment decreases as the family-risk level get higher. Level of child-risk does not affect family psychological nurturance and authoritative parenting. Family psychological nurturance is significantly high among low school-risk and low family-risk groups, than average and high risk groups. Authoritative parenting is significantly high among low family-risk, but it does not vary by child-risk or school-risk level.

Among the school related protective factors, curriculum adaptation to student diversity is seen high among low risk groups of child-risk, family-risk and school-risk. Caring teachers does not vary by child-risk level, but it is significantly more among low family-risk and low school-risk than the average and high categories.

Achievement in mathematics is significantly less among students high on child-risk, and family-risk. Achievement in basic science is significantly less among high school-risk group, and it does not vary by child-risk or family-risk. Achievement in social science varies by child-risk only, that in information technology vary by family-risk only.

Since mathematics achievement was found highly susceptible to be influenced by all three risk-domains in children's environment, increased achievement in mathematics was considered as the indicator of heightened resilience after the resilience fostering intervention.

Among the within-child protective factors, social competence could be fostered, especially through child-focused intervention and family cum child focused intervention (but not family-focused intervention) in all groups; however in general, and among high child-risk and low family-risk groups, family cum child focused intervention is more powerful; but in high family-risk, child-focused intervention is more powerful. Problem solving could be fostered only with family cum child focused intervention, that too in high child-risk and low family-risk. Again, in high family-risk, child-focused intervention is more effective than family cum child focused intervention. Effect of treatment on critical consciousness increases as the rigour of treatment increases from family-focused through child-focused to family cum child focused, especially in low child-risk and low family-risk groups, but in high child-risk and high family-risk, child-focused intervention only has no effect at all. Autonomy can be fostered with family cum child focused intervention only, though in high child-risk and low family-risk, child focused intervention could also foster it to some extent. Sense of purpose is less susceptible to intervention, in comparison to other within-child protective factors, and child focused intervention is better in this regard, especially in high child-risk, low family-risk and high family-risk. Intervention could not further add to sense of purpose in low child-risk. For improving sense of purpose in high family-risk, child focused intervention is counterproductive. Peer support could be enhanced to a moderate extent only in all groups, equally through child focused intervention and family cum child focused intervention, except in high family-risk, where only child focused intervention is more effective than family cum child focused intervention.

Like autonomy in students, authoritative parenting can be fostered in all groups only through family cum child-focused intervention and not by family

focused intervention or child focused intervention alone. Family resources are also reacting to the intervention only to a moderate extent. Generally child focused intervention and family cum child focused intervention have effect. But in high child-risk and low family-risk, family focused intervention also is effective. Family psychological nurturance was the most susceptible to intervention, with all treatments effective, especially in low risk groups. In high family-risk, family cum child focused intervention is counterproductive. Family environment could be significantly bettered through child focused intervention only; and, in high risk groups combining parents in this effort, through family cum child focused intervention proved counterproductive.

Academic resilience in terms of enhanced achievement could be inculcated through the intervention, only to a moderate extent, especially through family cum child focused intervention. Generally, collaborative intervention with family cum child focus is more effective in causing academic resilience, than partial interventions in terms of enhanced Mathematics achievement, especially in low-risk groups. In low child-risk group, child focused intervention (CAR) is also effective; in low family-risk group, family focused intervention (FAR) too is effective. In high risk groups, none of the treatments can immediately foster academic resilience in terms of Mathematics achievement. But long-term effects of such treatments on academic outcomes of high risk students have to be further verified.

What one learns from children who survive and thrive or what one calls resilient is that both individual and environmental factors can protect them from the adversities (Ungar, 2007). These factors vary from one culture to another. Resilience is not an individual quality. It is a condition of the community, the school, the family as much as the quality of the child. Educators need to show humility, to ask students about differences and to demonstrate flexibility in the educational environment in order to make school more comfortable for children of different cultures and help them to walk along the path of resilience. Present study attempted to foster academic resilience in at-risk secondary school students, and ended with some valuable

findings. Both the survey and experimental phases throw light into the significance of protective factors in the healthy development of all children, especially those at-risk. Teachers, parents, and community can provide a good platform for at-risk students to utilize their within protective factors effectively and to demonstrate academic resilience.

### **Educational Implications of the Study**

This study has demonstrated that secondary school students face considerable risk from personal, familial, school and community domains. These challenges from environment affect their academic performance. By developing a programme and testing it, this study has further demonstrated the usefulness of some strategies to help students perform well despite difficulties. The suggestions made here are broad recommendations based on findings from the two phases of study, the experiences derived by the researcher during the intervention programme and based on reviewed literature.

1. It is clear that children face risks from different domains. Hence, educational workers have to device and invent practices and strategies to help students meet the challenges from around successfully.
  - i. In order to empower students to find ways to meet challenges, teachers and other educational practitioners may get equipped with language of resilience. Literature on risk and resilience, school engagement and positive psychology offers school psychologists a new perspective to consider students' progress through school (Morrison et al., 2006) and provides a rationale for incorporating resilience building efforts in schools and explores ways in which the school environment could be structured to strengthen resilience in children and youth (Brooks, 2006).
2. Personal and societal abilities like Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sense of Purpose, and Peer

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Support can be inculcated in at-risk students with short-term interventions specifically in classrooms designed and executed in classrooms by teachers. As risk conditions from different domains overlap such interventions are effective with all students, though high risk groups benefit more, academically as well as other individual and societal competencies.

3. This study has demonstrated advantages of asset focused strategies in building up resilience in students. Schools may take up these ideas and incorporate following characteristics of resilience fostering schools into their institution.
  - i. Clearly defined goals formulated by the school.
  - ii. Active parental participation in the school and parent consultation sessions.
  - iii. Maintaining connections with community organizations and outside agencies to enrich the learning of students.
4. Curriculum transaction is the way for schools to meet challenges faced by diverse learners from multiple domains. The following may be considered in this regard.
  - i. Diversify curriculum transaction strategies to ensure participation of students at-risk from within, home, and community.
  - ii. Curriculum should be rich, rigorous and learner centered. Such curricula provide exposure to children to various subjects like art, drama, community service, and sports activities, where opportunities to use their prior knowledge are evident. Exposure to these experiences is very beneficial for at-risk children who are lacking higher level thinking skills to master all aspects of curriculum.

- iii. Curriculum has to establish connection between school, family and community.
  - iv. Curriculum has to provide life-related experiences that help solve complex problems.
  - v. Curriculum based on authentic, life-related learning experiences helps to develop confidence and self-esteem in at-risk children.
  - vi. Present the contents in consideration with culture and behaviours of student population.
  - vii. Encourage and facilitate participation of all students in co-scholastic activities as well.
5. Teachers may combine the powerful research based instructional practices for fostering resilience through instructional strategies, and consider the following.
- i. Combine the powerful research based instructional practices with caring and high expectations to facilitate learning of at-risk children and developing educational resilience.
  - ii. Teachers have to perform the role of facilitators, beyond the role of the transmitters of knowledge.
  - iii. Classroom strategies should be selected such that they are developing increased responsibility in students for their own learning with different practices like inquiry, experimentation, discussion, reflection, application and evaluation and thereby increase the sense of personal agency of students.
  - iv. Enable students with meta-cognitive skills to plan, organize and monitor their learning to be more successful in life.
  - v. Developing help-seeking behaviour in students to make them more independent.

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- vi. Individualize instructional practices to accommodate different learning styles, interests, life experiences and personal strengths of students that make learning meaningful for every child to experience success.
  - vii. Encourage to carry out the responsibilities assigned by teachers and family members, especially encouraging independence in doing seminars, and assignments related with studies.
6. Flexible classroom organization can also contribute to help students learn how to tackle difficulties around.
- i. Classroom should be democratically organized. Well-organized classrooms have particular rules and regulations formulated by the teachers and students together. Such classrooms offer opportunities for all students to contribute something to the success of all.
  - ii. Flexible physical arrangement of classroom is resilience promoting. Desks, tables and benches can easily be re-arranged for easy communication between teachers and students. Teacher can easily monitor the work of students. In such flexible classrooms students have the opportunity for self-learning and group learning.
  - iii. Well managed classroom with correct rules and procedures determined by both teachers and students together will help the students in self-governance. This will help develop social skills, autonomy and responsibility, all of which promote learning, success and educational resilience.
7. Teachers using maximum resources to teach their children will result in enhanced development and promotion of resilience. For this to happen teachers be equipped in the following.
- i. First, teachers have to understand about the cultural backgrounds of the students to organize their classrooms and instructional

programmes effectively. Ways suggested to collect information about the cultural backgrounds of the at-risk children are:

- a) Observation of students' behaviour,
  - b) Asking question to students and their families about their cultural practices,
  - c) Conducting research in school settings on various groups.
- ii. Enquire about difficulties, personal and academic problems, assign responsibilities, sharing expectation that all of us will perform well, and understand and respect cultural styles.
  - iii. Teachers can foster resilience through setting realistic expectations in students, helping them to master new experiences and developing students into active learners. When students become aware of their own role in their learning success, they will work hard to overcome difficulties.
  - iv. Teachers can play a key role in providing empathetic support to pupils and helping them to set achievable goals. These are two behaviours involved in successful mentoring.
  - v. Teachers can bring about a significant and long-lasting positive impact on children through their caring and loving attitude and high expectations.
8. The study has demonstrated that the most successful way to help students face difficulties successfully is to make the efforts of the children, teachers, and school in tandem with parents and family. So schools and teachers may take initiative to help parents equip themselves in the following.
- i. Caring by the parents, structured family environments, holding high expectations for children's behaviour and encouraging children's participation in the family life are the protective factors for resilience.
  - ii. Parents may be helped on how to rear children with freedom, not imposing things on them. Parents may be encouraged to satisfy reasonable needs of their wards, and avoiding unwanted control.

Parents need to consider children's opinion, and let opportunity to open up problems, by talking together during free time.

- iii. Give assurance to discharge responsibilities effectively, make the children do domestic help to parents after studies and convince the importance of dignity of labour.
9. Schools can be most successful in their efforts to build up resilient citizens, only when they can make the community collaborate in these efforts.
- i. Communities having well-developed and integrated networks of social organizations such as religious institutions, health care organizations, child-care services, job training centers, and recreational facilities can promote resilience. Ensuring and facilitating the availability, development and proper discharge of the services by these community organizations function as the protective factors to overcome risks.
  - ii. Community can foster educational resilience through frequent and explicit reinforcement of positive social values.
  - iii. Collaboration of family, school and community will be more effective in developing resilience.
10. Further researches need to be taken up to increase the understanding of risk sources and mobilizing protective factors accordingly in their contexts.

### **Suggestions for Further Research**

1. Though explorative phase of this study found that school-protective factors are also influential on academic resilience in terms of student outcomes in learning different subjects, the intervention phase focused on within-child and family protective factors only, for practical reasons. Hence, future researches may attempt fostering academic resilience in at-risk secondary school students through intervention focused on school protective factors.

2. Protective factors may vary with age and development of the child and the stage of schooling. Hence further exploration of protective factors for vulnerable student population at other stages of schooling namely primary, senior secondary and even higher education will be helpful to enhance quality of education at all stages.
3. Being an early one in the local context, this study adopted explorative cross-sectional and intervention approaches to improve the understanding of factors that can contribute to resilient academic outcomes in Kerala context. Other designs, especially longitudinal and case studies, among specific at-risk population in the local context may add to the understandings derived from this study.
4. Building upon the understanding derived from this study, further researches may design and test better focussed interventions to foster social competence, sense of purpose and goal orientation, problem-solving skills, and preferable parenting styles, as per specific requirements of the risk group under spotlight.
5. Peer support and autonomy though cited by many researches as protective factors, the exploration in this study derived findings supported by a very few other researches (Deborah, Mary, & Adaline 2002) that at least at high child-risk level, having high level of peer support and autonomy are negatively impacting school outcomes. This aspect of the findings requires further exploration.
6. Critical study of the negative and positive influence of peer group and autonomy as protective factor among different age groups and socio-economic conditions may be taken up.
7. This study being conducted by one who officially was not equipped to intervene with school practices and policies was primarily focused on

classroom based interventions, and hence family focused intervention was limited in scope. Teachers and school administrators better equipped to do long term intervention with family and parental practices may expand upon the family focused intervention in this study.

8. The broad range intervention conducted in the whole classrooms of a school catering to students from socio-economically and educationally poorer strata of population, by design, was not fine-tuned to the special requirements of specific risk populations. Future studies may pinpoint their attention to specific target groups for elevated effect sizes.
9. Though this study initially planned to take up influence of protective factors in all high school subjects including languages, for making the study handy enough, later on the exploration considered achievement in mathematics, Basic science, social science, and Information technology only. Early explorations have provided enough hint that at least achievement in English and Hindi also are debilitated by risk sourced from different domains. Hence, influence of the within-child, family, and school protective factors in the language achievement at school has to be further explored.
10. The resilience factors are usually studied in connection with the individual, family, community, and school risk domains of students and other groups in general population. By now well-trenched inclusive educational principles call for protective factors peculiar to specially-abled children too are explored with required seriousness.

- Aber, L., Slade, A., Berger, B., Bresgi, I., & Kaplan, M. (1985). *The parent development interview*. Unpublished Protocol, The City University of New York.
- Abraham, M. (1974). *Some factors relating to underachievement in English of secondary school pupils*. Doctoral Dissertation, Department of Education, University of Kerala.
- Achenbach, T.M., McConaughy, S., & Howell, C.T. (1987). Child / adolescent behavioural and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*, 87, 213–232.
- Alaska Division of Behavioral Health (2011). *Risk and Protective Factors for Adolescent Substance Use (and other Problem Behavior): A Review and Summary of the Research* conducted by Prevention Research Committee for Behavioral Health (2006), Behavioral Health Epidemiological Outcomes Workgroup (2007), SPF/SIG Epidemiological Influences Workgroup (2010).
- Alva, S. A. (1991). Academic invulnerability among Mexican-American students: The importance of protective resources and appraisals. *Hispanic Journal of Behavioral Sciences*, 13, 18-34.
- American Heritage Dictionary of the English Language*, 4<sup>th</sup> Ed. (2005). Houghton Mifflin Harcourt Publishing Company.
- Anderson, E. S., & Keith, T. Z. (1997). A longitudinal test of a model of academic success for at-risk high school students. *Journal of educational research*, 90 (5), 259-268.
- Angela, F.Y. (2009). Promoting resilience in Hong Kong school children: A critical reflection. *Advances in School Mental Health Promotion*, 2 (4), 19-27.
- Anthony, E. J. (1974). Introduction: The syndrome of the psychologically invulnerable child. In E. J. Anthony & C. Koupernik (Eds.), *The child and his family, Vol. 3: Children at psychiatric risk*. New York: Wiley, 529 - 544.
- Anthony, E. J. (1987). Risk, vulnerability and resilience: An overview. In E. Anthony & B. Cohler (Eds.), *The invulnerable child*. New York: The Guildford Press.
- Apfel, N., & Seitz, V. (1997). The first born sons of African-American teenage mothers: Perspectives on risk and resilience. In S.S. Luthar, J.A. Burack, D. Cicchetti, & J.R. Weisz, (Eds.), *Developmental psychopathology: Perspectives on adjustment, risk, and disorder*, 486–506. New York: Cambridge University Press.
- Arellano, A. R., & Padilla, A. (1996). Academic invulnerability among a select group of Latino university students. *Hispanic Journal of Behavioral Sciences*, 18, 485-507.

- Aufseeser, D., Jekielek, S., & Brown, B. (2006). *The family environment and adolescent well-being: Exposure to positive and negative family influences*. Washington, DC.
- Baldwin, A. L., Baldwin, C. P., Kasser, T., Zax, M., Sameroff, A., & Seifer, R. (1993). Contextual risk and resiliency during late adolescence. *Development and Psychopathology, 5*, 741 - 761.
- Baldwin, A.L., Baldwin, C.P., & Cole, R. (1990). Stress-resistant families and stress-resistant children. In J. Rolf, A. Masten, D. Cicchetti, K. Neuchterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*, 257–280, Cambridge University Press, New York.
- Ball, J. (2003). A generative curriculum model of child and youth care training through First Nations-University partnerships. *Native Social Work Journal, 4*(1), 84-103.
- Bandura, A. (1997). *Self - Efficacy: The exercise of control*. New York: Freeman and Company.
- Bartelt, D. (1994). On resilience: Questions of validity. In M. Wang & E. Gordon (Eds.), *Educational resilience in inner-city America*. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers, 97-108.
- Batabyal, A.A. (1998). The concept of resilience: Retrospect and prospect. *Environment and Development Economics, 3*, 235-239.
- Baumrind, D. (1991). Parenting styles and adolescent development. In J. Brooks-Gunn, R. Lerner & A. C. Peterson (Eds.), *The encyclopedia of adolescence*. New York: Garland, 746–758.
- Beardslee, W. R. (1983). Commitment and endurance: A study of civil rights workers who stayed. *American Journal of Orthopsychiatry, 53*, 34-42.
- Beardslee, W. R., & Podorefsky, O. (1988). Resilient adolescents whose parents have serious psychiatric disorders: Importance of self-understanding and relationships. *American Journal of Psychiatry, 145*(1), 63-69.
- Beardslee, W. R., Versage, E. M. & Gladstone, T. R. G. (1998). Children of affectively ill parents: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*, 1134-1140.
- Beardslee, W.R. (1989). The role of self-understanding in resilient individuals: The development of a perspective. *American Journal of Orthopsychiatry, 9*(2), 266-278.
- Beckham, E. & Leber, W. (Eds.). (1995). *Handbook of Depression*. New York: Guilford Press.

- Bell, C. E., & Suggs, H. (1998). Using sports to strengthen resiliency in children: Training heart. *Child and Adolescent Psychiatric Clinics of North America*, 7(4), 859-865.
- Benard, B. (1990). *The case for peers. The Corner on Research*. Portland, OR: Far West Laboratory for Educational Research and Development.
- Benard, B. (1991). *Fostering resilience in kids: Protective factors in family, school, and community*. San Francisco: Western Center for Drug-free Schools and Communities.
- Benard, B. (1993). Fostering Resiliency in kids. *Educational Leadership*, 51, 44-48.
- Benard, B. (1993). *Discussion during conference on Pulling Resiliency into Substance Abuse Prevention for Adolescents*. Unpublished Presentation, New York.
- Benard, B. (1995). Fostering resilience in children. *ERIC Digest*, EDO-PS-95-9, Urbana-Champaign, IL: University of Illinois.
- Benard, B. (1997). *Turning it around for all youth: From risk to resilience* (ERIC/CUE Digest No. 126). New York: ERIC Clearinghouse on Urban Education.
- Benard, B. (2002). Turnaround people and places: Moving from risk to resilience. In D. Saleebey (Ed.), *The strengths perspective in social work practice*. Boston MA: Allyn and Bacon.
- Benard, B. (2004). *Resiliency: What we have learned*. San Francisco: WestEd.
- Bennett, L.A., Wolin, S.J. & Reiss, D. (1988). Deliberate family process: A protective strategy for children of alcoholics. *British Journal of Psychiatry*, 83,
- Benson, L., Galbraith, J. & Espelad, P. (1988). *What kids need to succeed: Proven practical ways to raise good kids*. MN: Free Spirit Publishing, Inc.
- Berliner, B.A. & Bernard, B. (1995). *More than a message of hope: A district level policymaker's guide to understanding resiliency*. Western Regional Center for Drug-Free Schools and communities, Far west Laboratory. (ERIC Document Reproduction Service No. ED387946).
- Best, J. W., & Kahn, J. V. (2006). *Research in education* (7<sup>th</sup> ed). Prentice Hall of India Private Limited. New Delhi.
- Block, J.H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behaviour. In W.A. Collins (Ed.), *Development of cognition, affect, and social relations: Minnesota symposium on child psychology*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc, 89-10.

- Boothby, N., Crawford, J., & Halperin, J. (2006). Mozambican child soldier life outcome study: Lessons learned in rehabilitation and reintegration efforts. *Global Public Health, 1*, 87–107.
- Borman, G.D., & Rachuba, L.T.(2001). *Academic success among poor and minority students: An analysis of competing model of school effects*. (Report No:52). CRESPAR, Baltimore, M D.
- Boud, D. (1988). Moving towards autonomy. In D. Boud (Ed.), *Developing student autonomy in learning*. (2<sup>nd</sup> ed). London: Kogan Page.
- Boykin, A.W. (1986). The triple quandary and the schooling of Afro-American Children. In U. Neisser (Ed.), *The School achievement of minority Children: New Perspectives*. Hills dale, NJ: Erlbaum, 57-92.
- Bradley, R.H., & Corwyn, R.F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*, 371-399.
- Bradley, R.H., Whiteside-Mansell, L., Mundfrom, D.J., Casey, P.H., Kelleher, K.J., & Pope, S.K. (1994). Early indications of resilience and their relation to experiences in the home environments of low birth weight, premature children living in poverty. *Child Development, 65*,346–60.
- Brady, M. A. (1993).Health issues for aboriginal youth: Social and cultural factors associated with resilience. *Journal of Pediatrics and Child Health, 29*(Suppl. 1), S56–S59.
- Brent, D., Mortiz, G., Bridge, J., Perper, J. & Canobbio, R. (1996). The impact of adolescent suicide on siblings and parents: A longitudinal study. *Suicide and Life-Threatening Behavior, 26*, 253-259.
- Bridgeland, J.M., Dilulio, J.J., & Morison, K.B. (2006). *The silent epidemic: Perspectives of high school dropouts*. A report by Civic Enterprises in association with Peter D. Hart Research Associates for the Bill and Melinda Gates Foundation. Washington, DC: Civic Enterprises.
- Brody, G.H., Stoneman, Z., & Flor, D.(1996). Parental religiosity, family processes, and youth competence in rural, two-parent African American families. *Developmental Psychology, 32*,696–706.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U., & Morris, P. (1998). The Ecology of developmental Processes. In R.M. Lerner (Ed.), W. Damon (series Ed.), *Handbook of child psychology: Vol.I, Theoretical models of human development* (5<sup>th</sup> Ed., New York: Wiley, 993-1028.
- Bronfenbrenner, U. (1977).Toward an experimental ecology of human development. *American Psychologist, 32*, 513–531.

- Brookover, W. B., Schweitzer, J., Schneider, J., Beady, C., Flood, P. K., & Wisenbaker, J. (1978). Elementary school social climate and school achievement. *American Educational Research Journal*, 15(2), 301-303.
- Brooks, J. (2006). Strengthening resilience in children and youths: Maximizing opportunities through the schools. *Children and Schools*, 28(2), 69-76.
- Brooks-Gunn, J. (1994). Children in families and communities: Risk and intervention in the Bronfenbrenner tradition. In P. Moen, G. H. Elder, & K. Luscher (Eds.), *Examining lives in context*. Washington, DC: American Psychological Association, 467-451.
- Brown, G.W., Haris, T.O., & Bifulo, A. (1986). The long term effects of early loss of parent. In M. Rutter, C.E. Izard, & P.B. Read (Eds.), *Depression in young people*. New York: Guilford Press, 251-296.
- Brown, W. K., & Rhodes, W. A. (1991). Factors that promote invulnerability and resiliency in at-risk children. In W. K. Brown, & W. A. Rhodes (Eds.), *Why some children succeed despite the odds*. New York, Praeger, 171-177.
- Brunstein, J. C., Schultheiss, O. C., & Graessman, R. (1998). Personal goals and emotional well-being: The moderating role of motive dispositions. *Journal of Personality and Social Psychology*, 75, 494-508.
- Buckner, J. C., Mezzacappa, E., & Beardslee, W. R. (2003). Characteristics of resilient youths living in poverty: The role of self-regulatory processes. *Development and Psychopathology*, 15, 139-162.
- The Bernard van Leer Foundation. (1994). Building on people's strengths: Early childhood in Africa. The Hague.
- Burchinal, M. R., Roberts, J. E., Riggins, R., Zeisel, S., Neebe, E., & Bryant, M. (2000). Relating quality of center child care to early cognitive and language development longitudinally. *Child Development*, 71, 339 - 357.
- Cairney, T. H. & Munsie, L. (1995). Parent participation in literacy learning. *The Reading Teacher*, 48, 393-403.
- Campa, B. (2010). Critical resilience, schooling processes, and the academic success of Mexican Americans in a community college. *Hispanic Journal of Behavioural Sciences*, 32(3), 429-455.
- Campbell, J. (1970). *The hero with a thousand faces*. New York: World.
- Canavan, J., & Dolan, P. (2003). Policy roots and practice growth: Evaluating family support on the west coast of Ireland. In I.Katz & J.Pinkerton (Eds.), *Evaluating family support: Thinking internationally, thinking critically*, Chicester: Wiley CH, 13, 253-270.
- Cancer WEB. The On-line Medical Dictionary. [http://online.lovetoknow.com/wicki/online\\_Medical\\_Dictionary](http://online.lovetoknow.com/wicki/online_Medical_Dictionary).

- Capaldi, D. M., & Patterson, G. R. (1994). Interrelated influences of contextual factors on antisocial behaviour in childhood and adolescence for males. In D. C. Fowles, P. Sutker, & S. H. Goodman (Eds.), *Progress in experimental personality and psychopathology research*. New York: Springer, 165–198.
- Carbonell, D. M., Reinherz, H. Z., & Giaconia, R. M. (1998). Risk and resilience in late adolescence. *Child and Adolescent Social Work Journal*, 15(4), 251-272.
- Carmines, E. G., & Zeller, R. A. (1979). *Reliability and validity assessment*. Sage Publications, Beverly Hills, California, USA.
- Carnap, R. (1950). *Testability and Meaning*. New Haven, CT: Yale University Graduate Philosophy Club.
- Carpentieri, S.C., Mulhern, R.K., Douglas, S., Hanna, S., & Fairdough, J. (1993). Behavioral resiliency among children surviving brain tumors: The neuropsychological basis of disorders affecting children and adolescents [Special issue]. *Journal of Clinical Child Psychology*, 22, 236-246.
- Cauce, A. M. (1986). Social networks and social competence: Exploring the effects of early adolescent friendships. *American Journal of Community Psychology*, 14, 607-628.
- Center for Research on the Education of Students Placed at Risk (CRESPAR). (1998). Johns Hopkins University/Howard University.
- Chomsky, C. (1972). Write first, read later: Childhood Education in Bradley and Jones. *The Reading Teacher*, 452-462.
- Cicchetti, D. & Schneider-Rosen, K. (1986). An organizational approach to childhood depression. In M. Rutter, C. Izard, & P. Road (Eds.), *Depression in young people, Clinical and developmental perspectives*. New York, 71-134.
- Cicchetti, D. (1996). Child maltreatment: Implications for developmental theory. *Human development*, 39, 18-39.
- Cicchetti, D., & Garmezy, N. (1993). Prospects and promises in the study of resilience. *Development and Psychopathology*, 5, 497-502.
- Cicchetti, D., & Garmezy, N. (Eds.). (1993). Milestones in the development of resilience (special issue). *Development and Psychopathology*, 5 (4), 497-774.
- Cicchetti, D., & Lynch, M. (1993). Toward an ecological/ transactional model of community violence and child maltreatment: Consequences for Children's development.
- Cicchetti, D., & Rogosch, F.A. (1996). Equifinality and multifinality in developmental psychopathology. *Development and Psychopathology*, 8, 597-600.

- Cicchetti, D., & Rogosch, F.A. (1997). The role of self organization in the promotion of resilience in maltreated children. *Development and Psychopathology*, 9 (4), 799-817.
- Cicchetti, D., & Toth, S.L. (1994). Development and self-regulatory structures of the mind. *Development and Psychopathology*, 6, 533-549.
- Cicchetti, D., & Toth, S.L. (1992). The role of developmental theory in prevention and intervention. *Development and Psychopathology*, 4, 489-493.
- Cicchetti, D., Rogosch, F.A., Lynch, M., & Holt, K.D. (1993). Resilience in maltreated children: Processes leading to adaptive outcome. *Development and Psychopathology*, 5, 629-647.
- Clark, M. L. (1991). Social identity, peer relations, and academic competence of African American adolescents. *Education and Urban Society*, 24(1), 41-52.
- Coburn, J. & Nelson, S. (1989). *Teachers do make a difference: What Indian graduates say about their school experience*. Report No. RC-107-103. Washington, D.C., Office of Educational Research and Improvement. (ERIC Document Reproduction Service No. ED 306 071).
- Cohen, S., & Willis, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98, 310-357.
- Cohen, S., Kessler, R.C., & Gordon, L.U. (1995). Strategies for measuring stress in studies of psychiatric and physical disorders. In S. Cohen, R.C. Kessler, & L.U. Gordon (Eds.), *Measuring stress: A guide for health and social scientists*. Oxford: Oxford University Press.
- Cohler, B. J. (1987). Adversity, resilience, and the study of lives. In E. J. Anthony & B. J. Cohler (Eds.), *The invulnerable child*. New York: Guilford, 363-424.
- Cohler, B.J., Stott, F.M., & Musick, I.S. (1995). Adversity, vulnerability, and resilience: Cultural and developmental perspectives. In D. Cicchetti, & D.J. Cohen, (Eds.), *Developmental Psychopathology* (Vol.2). New York: John Wiley and Sons, Inc, 753-800.
- Coie, J. D., Dodge, K. A., & Kupersmidt, J. B. (1990). Peer group behavior and social status. In S. R. Asher & J. D. Coie (Eds.), *Peer rejection in childhood*. New York: Cambridge University Press, 17-59.
- Coie, J. D., Watt, N. F., West, J. D., Hawkins, J. R., Asarnow, H. J., Markman, S. L., Ramey, S. L., Shure, M. B., & Long, B. (1993). The science of prevention: A conceptual framework and some directions for a national research program. *American Psychologist*, 48, 1013-1022.
- Coleman, J.S., & Hoffer, T.B. (1987). *Public and Private Schools: The Impact of Communities*. New York: Basic Books.

- Collins, A., Brown, J., & Newman, S. (1989). Cognitive apprenticeship: Teaching the craft of reading, writing, and mathematics. In L. B. Resnick (Ed.), *Knowing, learning and instruction: Essays in honor of Robert Glaser*. Hillsdale, NJ: Lawrence Erlbaum, 453-494.
- Comer, J. (1984). Home-school relationships as they affect the academic success of children. *Education and Urban Society*, 16, 323-337.
- Comer, J. P. (1986). Parent participation in the schools. *Phi Delta Kappa*, 67, 442-446.
- Comer, J. P. (1987). New Haven's school community connection. *Educational Leadership*, 44, 13-16.
- Condly, S. (2006). Resilience in children: A review of the literature with implications for education. *Urban Education*, 41(3), 211-236.
- Conduct Problems Prevention Research Group. (1999). The Large - Scale Fast Tract Prevention trial for Conduct Problems.
- Connel, S.P., Spencer, M.B., & Aber, J.L. (1994). Educational risk and resilience in African-American youth: Context, self, action, and outcomes in school. *Child Development*, 65, 493-506.
- Consortium on the School-Based Promotion of Social Competence. (1994). The school-based promotion of social competence: Theory, research, practice and policy. In R. Haggerty et al., (Eds.), *Stress, risk and resilience in children and adolescents: Processes, mechanisms and interventions*. New York: Cambridge University Press.
- Corcoran, T. B. (1985). *Improving school climate: A brief review of school climate variables*. Philadelphia, PA: Research for Better Schools.
- Corno, L., & Snow, R. E. (1986). Adapting teaching to individual differences among learners. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed). New York: MC Millan Publishers, 605-629.
- Costello, E. J. (1989). Child psychiatric disorders and their correlates: A primary care pediatric sample. *Journal of the American Academy of Child and Adolescent Psychiatry*, 28, 851-855.
- Cowen, E. L., & Work, W.C. (1988). Resilient children, psychological wellness, and primary prevention. *American Journal of Community Psychology*, 16, 591-607.
- Cowen, E. L., Hightower, A. D., Pedro-Carroll, I. L., Work, W. C., Wyman, P. A., & Haffey, W. G. (1996). *School based prevention for children at-risk: The Primary Mental Health Project*. Washington, DC: American Psychological Association.

- Cowen, E. L., Work, W. C., & Wyman, P. A. (1997). The Rochester Resilience Project (RCRP): Facts found, lessons learned, future directions divined. In S. S. Luthar, J. A. Burack, D. Cicchetti, & J. R. Weisz (Eds.), *Developmental psychopathology: Perspectives on adjustment, risk, and disorder*. New York: Cambridge University Press, 527-547.
- Cowen, E.L., Wyman, P.A., Work, W.C., Kim, J.Y., Fagen, D.B., & Magnus, K.B. (1997). Follow-up study of young stress-affected and stress-resilient urban children. *Development and Psychopathology*, 9, 564–577.
- Cowen, E.L., Work, W.C., Wyman, P.A., Parker, G.R., Wannon, M., & Gribble, P. (1992). Test comparisons among stress-affected, stress-resilient, and nonclassified fourth-through sixth grade urban children. *Journal of Community Psychology*, 20, 200-214.
- CRESPAR. Centre for Research on Education of Students Placed At-Risk.
- Crittenden, P.M. (1985). Social networks, quality of child rearing, and child development. *Child Development*, 56, 1299-1313.
- Crosnoe, R. & Glen, H. E. Jr. (2004). Family dynamics, supportive relationships and educational resilience during adolescence. *Journal of Family Issues*. 25(5), 571-602.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York: Harper Collins.
- Cutrona, C.E. (2000). Social support principles for strengthening families: Messages from America. In J. Canavan, P. Dolan, & J. Pinkerton (Eds.), *Family support: Direction from diversity*. Jessica Kingsley Publishers, London. Ch 5, 103-122.
- Daniels, D., & Plomin, R. (1985). Differential experience of siblings in the same family. *Developmental Psychology*, 21, 747 – 760.
- Deborah ,A.O., Mary,E.S., & Adaline, Z.M. ( 2002 ). Multidimensional resilience in urban children exposed to community violence. *Child Development* , 73 ( 4 ) , 1265 – 1282.
- Delpit, L. (1995). *Other people's children: Cultural conflict in the classroom*. New York: The New Press.
- Delpit, L. (1996). The politics of teaching literate discourse. In W. Ayers & P. Ford (Eds.), *City kids, city teachers: Reports from the front row*. New York: New Press.
- Devlin, J.M., & O'Brien, L. M. (1999). Children of parents with mental illness: An overview from a nursing perspective. *Australian and Zealand Journal of Mental Health Nursing*, 8, 19-29.

- Dilulio, B. & Morison, G. M. (2006). *Voice of Students on Engagement: A report on the high school survey of student engagement*.
- Dixon-Mueller, R.B. (1978). *Rural women at work: Strategies for development in South Asia*. Baltimore, Maryland: Johns Hopkins University Press.
- Dohrenwend, B. S., & Dohrenwend, B.P. (1981). Life stress and psychopathology. In D.A. Regier, & G. Allen (Eds.), *Risk factor research in the major mental disorders*. U.S. Government Printing Office, Washington, DC, 131-141.
- Dohrenwend, B.P., & Dohrenwend, B.S. (1981). Socio-environmental factors, stress and psychopathology. *American Journal of Community Psychology*, 9(2), 128-164.
- Durlak, J.A., & Weissberg, R.P. (2007). *The impact of after-school programs that promote personal and social skills*. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.
- Dyson, T., & Moore, M. (1983). On kinship structure, female autonomy and demographic behaviour in India. *Population and Development Review*, 9(1), 35-60.
- Eccles, J. S., Lord, S., & Buchanan, C.M. (1996). School transitions in early adolescence: What are we doing to our young people? In J. L. Graber, J. Brooks-Gunn & A. C. Peterson (Eds.), *Transitions through adolescence: Interpersonal domains and context*. Hillsdale, NJ: Lawrence Erlbaum Associates, 251-284.
- Eccles, J. S., Lord, S.E., & Roeser, R.W. (1996). Round holes, square pegs, rocky roads, and sore feet: The impact of stage/environment fit on young adolescents' experiences in schools and families. In S. L. Toth & D. Cicchetti (Eds.), *Adolescence: Opportunities and challenges* (vol. 7). New York: University of Rochester Press, 49-93.
- Eccles, J.S., & Gootman, J.A. (2001). *Community programmes to promote youth development*. Washington, DC: National Academy Press.
- Edmonds, R. (1979). Effective schools for the urban poor. *Educational Leadership*, 37, 15-27.
- Edmonds, R. (1986). Characteristics of effective Schools. In U. Neisser (Ed.), *The school achievement of minority children: New Perspectives*. Hillsdale, NS: Lawrence Erlbaum, 93-104.
- Egeland, B., Carlson, L., & Sroufe, L. A. (1993). Resilience as process. Special issue: Milestones in the development of resilience. *Development and Psychopathology*, 5, 517-28.

- Egeland, B., & Farber, E. (1987). Invulnerability among abused and neglected children. In E.J. Anthony & B. Cohler (Eds.), *The invulnerable child*, 253-288.
- Eisenberg, N., Cumberland, A., Spinrad, T.L, Fabes, R.A., Shepard, S.A., & Reiser, M. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development*, 72, 1112-1134.
- Eloiza da Silva Gomes de Oliveira (2003). The tutorial practice in distance learning and the development of co - operative learning. National Panorama of Inclusive Education in Brazil.
- Epstein, J. (1984). Toward a theory of family-school connections: Teacher practices and parent involvement. In K. Hurrelmann, F. Kaufmann, & F. Losel (Eds.), *Social intervention: Potential and constraints*. New York: W. De Gruyler, 121-136.
- Epstein, J. L., Sanders, M. G., Simon, B. S., Salinas, K. C., Jansorn, N. R., & Van Voorhis, F. L. (2002). *School, community, and community partnerships: Your handbook for action* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Erikson, E. (1963). *Childhood and Society* (2nd ed.). New York, NY: Norton.
- Erikson, E. H. (1968). *Identity, youth and crisis*. New York: Norton.
- Fan, X. T., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review*, 13, 1-22.
- Fantuzzo, J., Tighe, E., & Childs, S. (2000). Family involvement questionnaire: A multivariate assessment of family participation in early childhood education. *Journal of Educational Psychology*, 92(2), 367-375.
- Felner, R. D., Aber, M. S., Primavera, L., & Cauce, A. M. (1985). Adaptation and vulnerability in high-risk adolescents: An examination of environmental mediators. *American Journal of Community Psychology*, 13(4), 365-379.
- Felner, R.D., Brand, S., Adan, A.M., Mulhall, P.F., Flowers, N., Sartain, B., & DuBois, D.L. (1993). Restructuring the ecology of the school as an approach to prevention during school transitions: Longitudinal follow-ups and extensions of the School Transitional Environment Project (STEP). In L.A. Jason, K.E. Danner, & K.S. Kurasaki, (Eds.), *Prevention and school transitions: Prevention in human services*. NY: Haworth Press.
- Felsman, J., & Vaillant, G. (1987). Resilient children as adults: A 40-year study. In E. J. Anthony & B. J. Coffey (Eds.), *The invulnerable child*. New York: Guilford Press, 289-314.

- Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health, 26*, 399–419.
- Ferguson, G.A.(1976). *Statistical analysis in psychology and education* (4<sup>th</sup> ed). New York: Mc Graw Hill.
- Fergusson, D.M., & Lynskey, M.T. (1996). Adolescent resiliency to family adversity. *Journal of Child Psychology and Psychiatry, 37*, 281–292.
- Fergusson, D.M., Horwood, L.J., & Lynskey, M.T. (1994). Adolescent resiliency to family adversity. *Journal of Child Psychology and Psychiatry, 37*, 281-292.
- Feuerstein, R. (1980). *Instrumental enrichment: An intervention program for cognitive modifiability*. Baltimore: University Park Press.
- Fleming, C. B., Haggerty, K. P., Brown, E. C., Catalano, R. F., Harachi, T. W., Mazza, J. J., & Gruman, D. H. (2005). Do social and behavioral characteristics targeted by preventive interventions predict standardized test scores and grades? *Journal of School Health, 75*, 342-349.
- Focht, L., & Beardslee, W.R. (1996). Speech after long silence: The use of narrative therapy in a preventive intervention for children of parents with affective disorder. *Family Process, 35*,407-422.
- Frankenburg, W. (1987). Fifth International Conference, Early identification of children at-risk: Resiliency factors in prediction. University of Colorado, Denver, CO.
- Fraser, B. J. (1991). Two decades of classroom environment research. In B. J. Fraser & H. J. Walberg (Eds.), *Educational environments: Evaluation, antecedents, and consequences*.Oxford: Pergamon, 3-27.
- Freiberg, H. J., Stein, T. A., & Huang, S. (1995). The effects of a classroom management intervention on student achievement in inner-city elementary schools. *Education Research and Evaluation, 1*(1), 36-66.
- Freire, P. (1970). *Pedagogy of the oppressed*. New York: Continuum.
- Fulgini, A. J. (1997). The academic achievement of adolescents from immigrant families: The roles of family background, attitudes and behavior. *Child Development, 68* (2), 351-363.
- Fullan, M. (1993). *Change forces: Probing the depths of educational reform*. New York: Falmer Press.
- Furstenberg, F., Cook, A., Eccles, J., Elder, G.H. & Sameroff, A.J. (1999). *Managing to make it: Urban families in high-risk neighbourhoods*. Chicago: University of Chicago Press.

- Gafoor, K.A. (2001). *Influence of certain personality variables on academic achievement of secondary school pupils*. Doctoral Dissertation, University of Calicut.
- Gandara, P. (1995). *Over the ivory walls: The educational mobility of low income Chicanos*. Albany, NY: State University of New York Press.
- Garbarino, J. (1995). The American war zone: What children can tell us about living with violence. *Developmental and Behavioral Pediatrics*, 16, 431–434.
- García Coll, C.T., Lamberty, G., Jenkins, R., McAdoo, H., Crnic, K., Wasik, B.H., & Vasquez, G. H. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, 67, 1891–1914.
- Gardynik, U. M., & Mc Donald, L. (2005). Implications of risk and resilience in the life of the individual who is gifted/learning disabled. *Roepert Review*, 27, 206–216.
- Garmezy, N. (1991). Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *American Behavioural Scientist*, 34, 416–430.
- Garmezy, N. & Neuchterlien, K. (1972). Invulnerable children: The facts and fiction of competence and disadvantage. *American Journal of Orthopsychiatry*, 42, 328–329.
- Garmezy, N. & Rutter, M. (1983). *Stress, coping and development in children*. New York: Mc Graw-Hill.
- Garmezy, N. (1970). Process and reactive schizophrenia: Some conceptions and issues. *Schizophrenia Bulletin*, 2, 30–74.
- Garmezy, N. (1971). Vulnerability research and the issue of primary prevention. *Journal of Orthopsychiatry*, 41, 101 - 116.
- Garmezy, N. (1974). The study of competence in children activists for severe psychopathology. In E.J. Anthony & C.Koupernik (Eds.), *The Child in his family: Vol 3. Children at psychiatric risk*. New York: Wiley, 77–79.
- Garmezy, N. (1983). Stressors of childhood. In N. Garmezy & M. Rutter (Eds.), *Stress, coping, and development in Children*. New York: Mc Graw Hill, 43–84.
- Garmezy, N. (1985). Stress resistant children: The search for protective factors. In J.E. Stevenson (Ed.), *Recent research in developmental Pathopaliology: Journal of child Psychology and Psychiatry Book supplement No.4* Oxford: Pergamon, 213–233.
- Garmezy, N. (1985). The NIMH- Israeli high-risk study: Commendation, comments, and cautions. *Schizophrenia Bulletin*, 11, 249–353.

- Garnezy, N. (1988). Stressors of childhood. In N. Garnezy & M. Rutter (Eds.), *Stress, coping, and development in children*. Baltimore, MD: Johns Hopkins University Press, 43-84.
- Garnezy, N. (1990) A closing note: Reflections on the future. In J. Rolf, A, Masten, D. Cicchetti, K, Neuchterlien, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*. New York: Cambridge University Press, 527-534.
- Garnezy, N. (1993). Children in poverty: Resilience despite risk. *Psychiatry*, 56, 127-136.
- Garnezy, N. (1993). Vulnerability and resilience. In D.C. Funder, R.D. Parker, C. Tomlinson-Keesey, & K. Widaman (Eds.), *Studying lives through time: Approaches to personality and development*. Washington, DC: American Psychological Association, 377-398.
- Garnezy, N. (1994). Reflections and commentary on risk, resilience, and development. In R. Haggerly et al., (Eds.), *Stress, risk and resilience in children and adolescents: Processes, mechanisms and interventions*. New York: Cambridge University Press.
- Garnezy, N. (1995). Development and adaptation: The contributions of the Mac Arthur foundation and William Bevan. In F. Kessel (Ed.), *Psychology, Science and human affairs: Essays in honor of William Bevan*. Boul, 109-124.
- Garnezy, N., Masten, A., Nordstrom, L. & Terroease, M. (1979). The nature of competence in normal and deviant children. In M.W. Kent & J.E. Rolf (Eds.), *The primary prevention of psychopathology*, Vol.3. Hanover. NH. University Press of New England.
- Garnezy, N., Masten, A.S., & Tellegan, A. (1984). The study of stress and competence in children: A building block of developmental psychopathology. *Child development*, 55, 97-111.
- Gay, G. (2000). *Culturally responsive teaching*. New York: Teachers College Press.
- Gayles, J. (2005). Playing the game and paying the price: Academic resilience among three high achieving African American males. *Anthropology and Education Quarterly*, 36 (3), 250-264.
- Geary, P.A. (1988). *Defying the odds?: Academic success among at-risk minority teenagers in an urban high school* (Report No. UD-026-258). Paper presented at the annual meeting of the American Educational Research Association, New Orleans, La. (ERIC Document Reproduction Service No. ED 296 055).
- George, P.O.(1989). Some social familial correlates of achievement in malayalam of school pupils. Unpublished Masteral Dissertation, University of Calicut.

- Gest, S. O., Newmann, J., Hubbard, J. J., Masten, A. S., & Tellegen, A. (1993). Parenting quality, adversity, and conduct problems in adolescence: Testing process-oriented models of resilience. Special Issue: Milestones in the development of resilience. *Development and Psychopathology*, 5(4), 663-682.
- Gest, S.D., Reed, M., & Masten, A.S. (1999). Measuring developmental changes in exposure to adversity: A life chart and rating scale approach. *Development and Psychopathology*, 11, 171-192.
- Gibson, M. (1986). The school performance of immigrant minorities: A comparative view. *Education and Urban Society*, 29, 262-275.
- Gilligan, R. (1998). The importance of schools and teachers in child welfare. *Child and Family Social Work*, 3, 13-25.
- Gillock, K. L., & Reyes, O. (1996). High school transition- related changes in urban minority students' academic performance and perceptions of self and school environment. *Journal of Community Psychology*, 24(3), 245-261.
- Gizir, C. A., & Aydin, G. (2009). Protective factors contributing to the academic resilience of students living in poverty in Turkey. *Professional School Counseling*, 13(1), 38-49.
- Glantz, M.D., & Johnson, J. (1999). *Resilience and development: Positive life adaptations*. New York: Plenum.
- Glaser, B., & Strauss, A. (1965). The discovery of substantive theory: A basic strategy underlying qualitative research. *American Behavioral Scientist*, 8(6), 5-12.
- Glasser, W. (1979). The effect of inservice training in glasser's technique of class meetings and reality therapy in teacher and student behaviour.
- Glat, R. & Ferreira, J. (2003). National Panorama of Inclusive Education in Brazil: diagnostic study and challenges. World Bank – Cnotinfor Portugal.
- Goldstein, M.J. (1990). Factors in the development of schizophrenia and other severe psychopathology in later Adolescence and adulthood. In J. Rolf, A.S. Masten, D. Cicchetti, K.H. Neuharterlien, & S.Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*. New York: Cambridge University Press, 408-423.
- Gonzales, N.A., Cauce, A.M., Friedman, R.J., & Mason, C.A. (1996). Family, peer, and neighborhood influences on academic achievement among African-American adolescents: One-year prospective effects. *American Journal of Community Psychology*, 24, 365-387.

- Gonzalez, R., & Padilla, A. M. (1997). The academic resilience of Mexican American high school students. *Hispanic Journal of Behavioral Sciences, 19*, 301-17.
- Gordan, K. (1995). Self-concept and the motivational patterns of resilient African-American high school students. *Journal of Black Psychology, 21*, 239–255.
- Gordon Rouse, K.A. (2003). *The academic environment's impact on motivation in resilient and non-resilient middle schoolers*. Paper presented at the biennial meeting of the society for research in child development, Tampa, F.L.
- Gordon, E. W., & Song, L. D. (1994). Variations in the experience of resilience. In M. C. Wang & E. W. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects*. Mahwah, NJ: Lawrence Erlbaum, 27-43.
- Gordon, E., & Yowell, C. (1994). Cultural dissonance as a risk factor in the development of students. In R. J. Rossi (Ed.), *Schools and students at-risk*. New York: Teacher College Press, 51-69.
- Gordon, E.W., Rollock, D., & Miller, F. (1990). Coping with communicentric bias in knowledge production in the social sciences. *Educational Researcher, 19* (3),
- Gordon, Rouse, K.A., Bamaca Gomez, M.Y., Newman, Phil, & Newman, B. (2001). Educationally Resilient Adolescents' Impact Knowledge of the Resilience Phenomenon. (ERIC Document Reproduction Service, No. ED 459393).
- Gore, S. & Eckenrode, J. (1994). Context and process in research on risk and resilience. In R. Haggerty (Ed.), *Stress, risk and resilience in children and adolescents: Proceses, mechanisms and interventions*. Cambridge University Press: New York.
- Gottfried, A. E. (1985). Academic intrinsic motivation in elementary and junior high school students. *Journal of Educational Psychology, 82*, 525– 538.
- Graham, S., & Hoehn, S. (1995). Children's understanding of aggression and withdrawal as social stigmas: An attributional analysis. *Child Development, 66*, 1143–1161.
- Graham, S., & Hudley, C. (1994). Attributions of aggressive and non aggressive African American male in early Adolescence. A study of construct accessibility. *Developmental Psychology, 30*, 365-373.
- Granger, R. C., & Kane, T. (2004). Improving the quality of after-school programs. *Education Week, 23*, 76-77.
- Grantham, T. C. (2004). Rocky Jones: Case study of a high-achieving Black male's motivation to participate in gifted classes. *Roeper Review, 26*, 208–215.

- Graue, M., Weinstein, T., & Walberg, H. (1983). School-based home instruction and learning: A quantitative synthesis. *Journal of Educational Research, 76*, 351-360.
- Gray, B. (1989). *Collaborating: Finding Common Ground for Multiparty Problems*. San Francisco: Jossey-Bass.
- Greenberg, M. T., Kusche, C. A., Cook, E. T., & Quamma, J. P. (1995). Promoting emotional competence in school-aged children: The effects of the PATHS curriculum. *Development and Psychopathology, 7*, 117-136.
- Gregory, S. (1995). *The deaf child and his family*. London, George Allen and Unwin, republished as *Deaf Children and their Families*. Cambridge, Cambridge University Press.
- Grotberg, E. (1994). *The international resilience project: Research and applications*. University of Alabama at Birmingham: Civitan International Research Center.
- Grotberg, E. (1996). *The International resilience project: Research and application*. In *Proceedings of the 53rd Annual Convention of ICP: Cross-cultural encounters*. Emily Miao (Ed.), Taipei, Taiwan: General Innovation Service (GIS).
- Grotberg, E. (1995). *A guide to promoting resilience in children: Strengthening the human spirit*. The Bernard van Leer Foundation, The Hague.
- Gul Muhamed, M. (1995). *Relationship of cognitive and affective achievements with reference to personality variables of 9<sup>th</sup> standard students*. Doctoral Dissertation, University of Calicut.
- Gutman, L.M., Sameroff, A.S., & Eccles, J.S. (2002). The academic achievement of African American students during early adolescence: An examination of multiple risk, promotive and protective factors. *American Journal of Community Psychology, 30*, 367-399.
- Haggerty, R. J., Sherrod, R., Garmezy, N., & Rutter, M. (1994). *Stress, risk, and resilience in children and adolescents: Processes, mechanisms, and interventions*. New York: Cambridge University Press.
- Hammen, C. (1990). The family-environmental context of depression: A perspective on children's risk. In D. Cicchetti & S. Toth (Eds.), *Rochester Symposium on Developmental Psychopathology, volume 4: Developmental Perspectives on Depression*, 1-40.
- Hammond, M., & Collins, R. (1991). *Self-directed learning: Critical practice*. New York: Nichols.
- Harackiewicz, J., Barron, K., Carter, S., Lehto, A., & Elliot, A. (1997). Predictors and consequences of achievement goals in the college classroom:

- Maintaining interest and making the grade. *Journal of Personality and Social Psychology*, 73, 1284-1295.
- Hart, E.L., Lahey, B.B., Loeber, R., & Hanson, K.S. (1994). Criterion validity of informants in the diagnosis of disruptive behavior disorders in children: A preliminary study. *Journal of Consulting and Clinical Psychology*, 62, 410-414.
- Hart, Olsen, Robinson, & Mandlco (1997). The development of social and communicative competence in childhood: Review and a model of personal, familial, and extra familial processes. *Communication Year Book*, 20, 305-373.
- Hartup, W.W. (1996). The company they keep: Friendships and their developmental significance. *Child Development*, 67(1), 1-13.
- Hawkins, J. D., Catalano, R. F., Kosterman, R., Abbott, R., & Hill, K. G. (1999). Preventing adolescent health-risk behaviors by strengthening protection during childhood. *Archives of Pediatrics and Adolescent Medicine*, 153(3), 226-234.
- Haynes, N.M., & Comer, J.P. (1996). Integrating schools, families, and communities through successful school reform: The school development program. *School Psychology Review*, 25, 501-506.
- Heath, S.B., & M.W. McLaughlin. (Eds.). (1993). *Identity and inner-city youth: Beyond ethnicity and gender*. New York: Teachers College Press.
- Heavy Runner, I., & Marshall, K. (2003). Miracle survivors: Promoting resilience in Indian students. *Tribal College Journal*, 14(4), 14-19.
- Henderson, A.T., & Milstein, M. M. (1996). *Resiliency in schools: Making it happen for students and educators*. Thousand Oaks, CA: Corwin Press.
- Henderson, A. T. (1987). *The evidence continues to grow: Parent involvement improves student achievement*. Columbia, MD: National Committee for Citizens in Education.
- Henderson, A.T., & Berla, N. (1994). *A new generation of evidence: The family is critical to student achievement*. Washington DC: National Committee for citizens in Education.
- Higgins, G. O. (1994). *Resilient adults: Overcoming a cruel past*. San Francisco: Jossey-Bass.
- Hjemdal, O., Friborg, O., Stiles, T.C., Martinussen, M., & Rosenvinge, J. (2006). A new rating scale for adolescent resilience. Grasping the central protective resources behind healthy development. *Measurement and Evaluation in Counseling and Development*, 39, 84-96.

- Horn, L., & Chen, X. (1998). *Toward resilience: At-risk students who make it to college*. Washington, DC: U. S. Department of Education, Office of Educational Research and Improvement.
- Horne, J. F. & Orr, J. E. (1998). Assessing behaviors that create resilient organizations. *Employment Relations Today*, 24, 29-39.
- Howard, D. (1996). Searching for resilience among African-American youth exposed to community violence: Theoretical issues. *Journal of Adolescent Health*, 18, 254-262.
- Hsieh, M.O., & Shek, D.T.L. (2008). Personal and family correlates of resilience among adolescents living in single-parent households in Taiwan. *Journal of Divorce and Remarriage*, 49, (3-4), 330-348.
- Irvin, M. J. (2012). Role of student engagement in the resilience of African American adolescents from low-income rural communities. *Psychology in the Schools*, 49(2), 176-193.
- Iverson, K.B., & Walberg, H.J.(1982). Home environment and school learning: A quantitative synthesis. *Journal of Experimental Education*, 50(3), 144-151.
- Jessor, R, Turbin, M.S., & Costa, F.M. (1998a). Risk and protection in successful outcomes among disadvantaged adolescents. *Applied Developmental Science*, 2, 194–208.
- Jessor, R, Turbin, M.S., & Costa, F.M. (1998b). Protective factors in adolescent health behavior. *Journal of Personality and Social Psychology*, 75, 788-800.
- Jessor, R., Van Den Bos, J., Vanderryn, J., Costa, F.M., & Turbin, M.S.(1995). Protective factors in adolescent problem behavior: Moderator effects and developmental change. *Developmental Psychology*, 31, 923–933.
- Johnson, J. L. & Wiechelt, S. A. (2004). Introduction to the special issue on resilience. *Substance Use and Misuse*, 39, 657-671.
- Juby, C. & Rycraft, J.R. (2004). Family preservation strategies for families in poverty. *Families in Society*, 85, 581–587.
- Julia, L.M., John, F., & Cicchetti, D. (2002). Profiles of social competence among low-income African-American preschool children. *Child Development*, 73 (4), 1085-1100.
- Kadeeja, K. (1991). *Effects of socioeconomic status and attitude towards science on achievement in chemistry of secondary school pupils*. Master's Dissertation, University of Calicut.
- Kane, T. (2004). *The impact of after-school programs: Interpreting the results of four recent evaluations* (William T. Grant Foundation Working Paper).

- Kaplan, H.B. (1999). Toward an understanding of resilience: A critical review of definitions and models. In M.D. Glantz & J.R. Johnson (Eds.), *Resilience and development: Positive life adaptations*. New York: Plenum, 17-83.
- Katz, L. G., & McClellan, D. E. (1997). *Fostering children's social competence: The teacher's role*. Washington, DC: National Association for the Education of Young Children. ED 413 073.
- Kaufman, J., Cook, A., Arny, L., Jones, B., & Pittinsky, T. (1994). Problems defining resiliency: Illustrations from the study of maltreated children. *Development and Psychopathology*, 6, 215-229.
- Kawakami, A.J. (1995). A study of risk factors among high school students in Chuuk State. Educational Resources Information Center (U.S.). Honolulu, Hawaii: Pacific Region Educational Laboratory: Washington, DC.
- Kazdin, A.E. (1990). Childhood Depression. *Journal of Child Psychiatry and Psychology*, 31, 121-160.
- Keith, T. Z., Keith, P. B., Troutman, G. C., Bickley, P. G., Trivette, P. S., & Singh, K. (1993). Does parental involvement affect eighth-grade student achievement? Structural analysis of national data. *School Psychology Review*, 22(3), 474-496.
- Kerr, M. & Brown, M. (1988). *Family education: An approach based on bowen theory*. NY, Norton.
- Kidder, T. (1990). *Among school children*. New York: Avon.
- Kim-Cohen, J., Moffitt., T. E., Caspi, A., & Taylor, A. (2004). Genetic and environmental processes in young children's resilience and vulnerability to socioeconomic deprivation. *Child Development*, 75, 651-668.
- Kirst, M.W., & McLaughlin, M. (1990). Rethinking children's policy: Implications for educational administration. In B. Mitchell & L.L. Cunningham (Eds.), *Educational leadership and changing context of families, communities, and schools: 89th yearbook of the National Society for the Study of Education*. (Part 2,). Chicago: University of Chicago Press, 69-90.
- Klein, R. J. T., Nicholls, R. J., & Thomalla, F. (2003). Resilience to natural hazards: How useful is this concept? *Global Environmental Change, Part B: Environmental Hazards*, Vol 51, Nos. 1 and 2, 35-45.
- Kline, B.E., & Short, E.B. (1991). Changes in emotional resilience: Gifted adolescent boys. *Roper Review*, 13, 184-187.
- Klinger, E. (1998). The search for meaning in evolutionary perspective and its clinical implications. In P. T. P. Wong & P. S. Fry (Eds.), *The human quest for meaning: A handbook of psychological research and clinical applications*. Mahwah, NJ: Erlbaum.

- Knesting, K. (2008). Students at-risk for school dropout: Supporting their assistance. *Preventing School Failure, 52*(4), 3-10.
- Knitzer, J. (2000a). Early childhood mental health services: A policy and systems development perspective. In J. P. Shonkoff, S.J. Meisels,(Eds.), *Handbook of early childhood intervention*. New York: Cambridge University Press, 416-438.
- Kohn, A. (1993). Choices for children: Why and how to let students decide. *Phi Delta Kappan, 75*(1), 8-16.
- Kumpfer, K.L. (1999). Factors and processes contributing to resilience: The resilience framework. In M. Glantz & J.L. Johnson (Eds.), *Resilience and development: Positive life adaptations*. New York: Plenum Press, 179–224.
- Ladd, G. W. (1999). Peer relationships and social competence during early and middle childhood. *Annual Review of Psychology, 50*, 333-359.
- Ladd, G. W., & Profilet, S. M. (1996). The child behavior scale: A teacher-report measure of young children's aggressive, withdrawn, and prosocial behaviors. *Developmental Psychology, 32*(6), 1008-1024. EJ 543 361.
- Ladd, G. W., Kochenderfer, B. J., & Coleman, C. C. (1996). Friendship quality as a predictor of young children's early school adjustment. *Child Development, 67*(3), 1103-1118.
- Ladson-Billings, G. (1994). *The dream keepers*. San Francisco, CA: Jossey-Bass.
- Langenkamp, A. G. (2010). Academic vulnerability and resilience during the transition to high school: The role of social relationships and district context. *Sociology of Education, 83* (1), 1-19.
- Lauer, P.A., Akiba, M., Wilkerson, S.B., Apthorp, H.S., Snow, D., & Martin-Green, M.(2006). Out-of-school time programs: A meta-analysis of effects for at risk students. *Review of Educational Research, 76*, 275–313.
- Leadbeter, B. & Bishop, A. (1994). Predictors of behaviour problems in pre-school children of inner-city Afro-American and Puerto Rican adolescent mothers. *Child Development, 65*, 638-648.
- Lee, V. E., & Burkham, D. T. (2003). Dropping out of high school: The role of school organization and structure. *American Educational Research Journal, 40*(2), 353-393.
- Lee, V. E., Winfield, L. F., & Wilson, T. C. (1991). Academic behaviors among high-achieving African American students. *Education and Urban Society, 24*(1), 65-86.
- Lee, V. E., & Burkham, D. T. (2002). *Inequality at the starting gate: Social background differences in achievement as children begin school*. Washington, DC: Economic Policy Institute.

- Lee, D.D. (2009). The impact of resilience on the academic achievement of at-risk students in the Upward Bound Program in Georgia. Doctoral Dissertation for Educational Leadership, Statesboro, Georgia.
- Lefkowitz, B. (1986). *Tough change: Growing up on your own in America*. New York, NY: Free Press.
- Lengua, L.J. (2002). The contribution of emotionality and self-regulation to the understanding of children's response to multiple risk. *Child Development*, 73 (1), 144-161.
- Long, J.V.F., & Vaillant, G.E. (1984). Natural history of male psychological health: XI. Escape from the underclass. *American Journal of Psychiatry*, 141, 341-346.
- Luthar S. S., Cicchetti D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71, 543-562.
- Luthar, S.S. (1993). Annotation: Methodological and conceptual issues in the study of resilience. *Journal of Child Psychology and Psychiatry*, 34, 441-453.
- Luthar, S.S. & Zigler, E.(1991). Vulnerability and competence: A review of research on resilience in childhood. *American Journal of Orthopsychiatry*, 61, 6-22.
- Luthar, S.S. (2000). *The construct of resilience: Applications in interventions*. Keynote address, XX-XII Banff International Conference on Behavioral Science, Banff, AB, Canada.
- Luthar, S. S. (1991). Vulnerability and resilience: a study of high-risk adolescents. *Child Development*, 62, 600-616.
- Luthar, S. S. (1999). *Poverty and children in adjustment* (Vol. 41). Thousand Oaks, CQ: Sage.
- Luthar, S. S. (Ed.). (2003). *Resilience and vulnerability: Adaptation in the context of childhood adversities*. New York: Cambridge University Press.
- Luthar, S. S., & Cicchetti, D. (2000). The construct of resilience: Implications for interventions and social policies. *Development and Psychopathology*, 12, 857-885.
- Luthar, S., & Cushing, G. (1999). Measurement issues in the empirical study of resilience: An overview. In M. Glantz, & J. Johnson (Eds.), *Resilience and development: Positive life adaptation*. New York: Kluwer Academic/Plenum Publishers, 129-160.
- Luthar, S.S., & Suchman, N.E. (2000). Relational psychotherapy mother's group: A developmentally informed intervention for at-risk mothers. *Development and Psychopathology*, 12, 235-253.

- Luthar, S.S. (1995). Social competence in the school setting: Prospective cross-domain associations among inner-city teens. *Child Development, 66*, 416-429.
- Luthar, S.S. (1996). *Resilience: A construct of value?* Paper presented in the 104<sup>th</sup> Annual Convention of the American Psychological Association, Toronto.
- Luthar, S.S. (1998). *Resilience among at-risk youth: Ephemeral, elusive, or robust?* Boy of Mc Candler's Young Scientist-Award presentation, 106<sup>th</sup> Annual convention of the American Psychological Association, San Francisco.
- Luthar, S.S., & D'Avanzo, K. (1999). Contextual factors in substance use: A study of suburban and inner-city adolescents. *Development and Psychopathology, 11*, 845-867.
- Luthar, S.S., & Cushing, G. (1999). Measurement issues in the empirical study of resilience: An overview. In M.D. Glantz & J.L. Johnson (Eds.), *Resilience and development: Positive life adaptations*. New York: Plenum, 129-160.
- Luthar, S.S., & Mc Mahon, T. (1996). Peer reputation among inner-city adolescents: Structure and correlates. *Journal of Research on Adolescence, 6*, 581-603.
- Luthar, S.S., Doernberger, C.H., & Zigler, E. (1993). Resilience is not a unidimensional construct: Insights from a prospective study on inner-city adolescents. *Development and Psychopathology, 5*, 703-712.
- Maccoby, E.E., & Jacklin, C. N. (1983). *The "person" characteristics of children and the family as environment*. See Magnusson and Allen, 76-91
- Mallak, L. A. (1998). Measuring resilience in health care provider organizations. *Health Manpower Management, 24*(4), 148-152.
- Manjusha, V.P. (2006). Influence of parenting styles of working and non-working mothers on mental health and achievement in biology of secondary school pupils. Doctoral Dissertation, University of Calicut.
- Margalit, M., & Kleitman, T. (2006). Mothers' stress, resilience and early intervention. *European Journal of Special Needs Education, 21*, 269-283.
- Martin, A., & Marsh, H. (2006). Academic resilience and its psychological and educational correlates: A construct validity approach. *Psychology in the Schools, 43*(3), 267-281.
- Martinez, R. O., & Dukes, R. L. (1997). The effects of ethnic identity, ethnicity, and gender on adolescent well-being. *Journal of Youth and Adolescence, 26*(5), 503-516.
- Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. (1999). Competence in the context of adversity: Pathways to resilience and

- maladaptation from childhood to late adolescence. *Development and Psychopathology*, *11*, 143-169.
- Masten, A. S. & Narayan, A. J. (2012). Child development in the context of disaster, war, and terrorism: Pathways of risk and resilience. *Annual Review of Psychology*, *63*, 227-57.
- Masten, A. S. (1989). The roots of resilience as a focus of research. In D. Cicchetti (Ed.), *The emergence of a discipline: Rochester symposium on developmental psychopathology, Vol.1*. Hillsdale: Lawrence Erlbaum Associates.
- Masten, A. S. (1994). Resilience in individual development: Successful adaptation despite risk and adversity. In M. C. Wang & E. W. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects*. Hillsdale, NJ: Erlbaum, 1-25.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, *56*, 227-238.
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist*, *53* (2), 205-220.
- Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, *2*, 425-44.
- Masten, A. S., Coatsworth, J. D., Newmann, J., Gest, S. D., Tellegen, A., & Garmezy, N. (1995). The structure and coherence of competence from childhood through adolescence. *Child Development*, *66* (6), 1635-1659.
- Masten, A. S., Garmezy, N., Tellegen, A., Pellegrini, D. S., Larkin, K., & Larsen, A. (1988). Competence and stress in school children: The moderating effects of individual and family qualities. *Journal of Child Psychology and Psychiatry*, *29*, 745-764.
- Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. L. (1999). Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology*, *11*, 143-169.
- Masten, A.S., & Coatworth, J.D. (1995). Competence, resilience, and psychopathology. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology: Vol.2, Risk, disorder, and adaptation*. New York: Wiley, 715-752.
- Masten, A.S., & Garmezy, N. (1985). Risk, vulnerability, and protective factors in developmental psychopathology. In B.B. Lahey & A.E. Kasdin (Eds.), *Advances in clinical child psychology* (Vol.8). New York: Plenum, 1-51.

- Masten, A.S., & Wright, M.O.D. (1998). Commutative risk and protection models of child maltreatment. In B.B.R. Rossman & M.S. Rosenberg (Eds.), *Multiple victimization of children: Conceptual, developmental, research and treatment issues*. Binghamton, NY: Haworth, 7-30.
- Masten, A.S., (1999). Resilience comes of age: Reflections on the past and outlook for the next generations of research. In M.D. Glantz, T. Johnson & L. Huffman (Eds.), *Resilience and development: Positive life adaptations*. New York: Plenum, 282-296.
- Masten, A.S., Morrison, G.M., Pellegrini, D.S., & Tellegan, A. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, 2, 425-444.
- Mc Clellan, D. E., & Kinsey, S. (1999). Children's social behaviour in relation to participation in mixed-age or same-age classrooms. *Early Childhood Research and Practice*, (On line Journal) 1(1). Available: <http://ecrp.uiuc.edu/vlnl/index.html> [June 1, 1999]
- Mc Clendon, C., Nettles, S.M., & Wigfield, A. (2000). Fostering resilience in high school classrooms: A study of the PASS Program (Promoting Achievement in School Through sport). In M.G. Sanders (Ed.), *Schooling students placed at risk: Research, policy and practice in the education of poor and minority adolescents*. Mahwah, NJ: Lawrence Erlbaum, 289-307.
- Mc Cubbin, H.I., Thompson, E.A., Thompson, A.I., & Fromer, J.E.(Eds.). (1998). *Stress, coping, and health in families: Sense of coherence and resiliency*. Thousand Oaks, CA: Sage Publications.
- Mc Loyd, V.C. (1990). The impact of economic hardship on black families and children: Psychological distress, parenting, and socio emotional development. *Child Development*, 61, 311-346.
- Mc Millan, J.H., & Reed, D.F. (1994). At risk students and resiliency: Factors contributing to academic success. *The Clearing House*, 67, 137-40.
- McCombs, B. L., & Whisler, J. S. (1997). *The learner-centered classroom and school: Strategies for increasing student motivation and achievement*. San Francisco: Jossey-Bass.
- McCubbin, L. (2001). *Challenges to the definition of resilience*. Paper presented at the meeting of the American Psychological Association, San Francisco, CA.
- Means, B., Chelemer, C., & Knapp, M. S. (1991). *Teaching advanced skills to at-risk students: Views from research and practice*. San Francisco, CA: Jossey-Bass.
- Meehl, P.E. (1977). Specific etiology and other forms of strong influence: Some quantitative methods. *Journal of Medicine Philosophy*, 2, 33-53.

- Michael, M.C., Pettit, G. S., Bates, J. E., Dodge, K. A., & Lapp, A. L. (2002). Family adversity, positive peer relationships, and children's externalizing behavior: A longitudinal perspective on risk and resilience. *Child Development, 73*, 1220-1237.
- Merriam-Webster Dictionary. (2002).
- Michelle, D. & Marc, A. P. (1999). Resilience in adolescents: Protective role of social support, coping strategies, self-esteem, and social activities on experience of stress and depression. *Journal of Youth and Adolescence, 28* (3),343-363.
- Miller, C. A., Fitch, T., & Marshall, J. L. (2003). Locus of control and at-risk youth: A comparison of regular education high school students and students in alternative schools. *Education, 123* (3), 548-551.
- Milstein, M., & Henry, D. (2000). *Spreading resiliency: Making it happen in schools and communities*. Thousand Oaks, CA: Corwin Press.
- Moles, O. (1982). Synthesis of recent research on parental participation in children's education. *Educational Leadership, 40*, 44-47.
- Moote, G. T., & Wodarski, J. S. (1997). The acquisition of life skills through adventure-based activities and programs: A review of the literature. *Adolescence, 32*, 143-167.
- Morales, E. E., & Trotman, F. (2004). *Promoting academic resilience in multicultural America: Factors affecting student success*. New York: Peter Lang.
- Morales, E.E. (2010). Linking strengths: Identifying and exploring protective factor clusters in academically resilient low-socioeconomic urban students of colour. *Roeper Review, 32*,164-175.
- Morris, E. W., & Winter, M. (1994). *Housing, family, and society* (2nd ed). St. Paul, MN: Design, Housing and Apparel, University of Minnesota.
- Morrison, G.M., Brown, M., D'Incau, B., O'Farrell, S.L. & Furlong, M. J. (2006). Understanding resilience in educational trajectories: Implications for protective possibilities. *Psychology in the Schools, 43*, 19-31.
- Murphy, L.B. (1974). Coping, vulnerability, and resilience in childhood. In G.V. Coelho, D.A., Hamburg, & J.E. Adams (Eds.), *Coping and adaptation*. New York: Basic Books, 69-100.
- Murphy, L.B., & Moriarty, A.E. (1976). *Vulnerability, Coping and Growth: From infancy to adolescence*. New hare, CT: Yale University press.
- Nair, V.G.(1984). *A study of certain personality variables differentiating under achievers and non-under achievers in secondary school Malayalam*. Master's Dissertation, University of Calicut.

- National Center on Education in the Inner Cities (CEIC) (1990). Temple University, Philadelphia.
- Natriello, G., McDill, E.L., & Pallas, A.M. (1990). *Schooling disadvantaged children: Racing against catastrophe*. New York: Teachers College Press.
- Nelson-Le Gall, S., & Jones, E. (1991). Classroom help-seeking behaviours of African-American children. *Education and Urban Society*, 24(1), 27-40.
- Nettles, S. M. (1991). Community contributions to school outcomes of African-American students. *Education and Urban Society*, 24(1), 132-147.
- Nettles, S. M. (1991). Community involvement and disadvantaged students: A review. *Review of Educational Research*, 61, 379-406.
- Nettles, S. M., & Pleck, J. H. (1993). Risk, resilience, and development: The multiple ecologies of black adolescents in the United States. In R. J. Haggerty, N. Garnezy, M. Rutter, & L. R. Sherrods (Eds.), *Stress, coping and development: Risk and resilience in children*. Boston: Cambridge University Press.
- Nettles, S. M., Mucherach, W., & Jones, D. S. (2000). Understanding resilience: The role of social resources. *Journal of Education for Students Placed at Risk*, 5, 47-60.
- Newcomb, M., & Bentler, P. (1990). Drug use, educational aspirations, and involvement: The transition from adolescence to young adulthood. *American Journal of Community Psychology*, 14 (3), 303-321.
- Newman, B. M., Myers, M. C., Newman, P. R., Lohman, B. J., & Smith, V. L. (2000). The transition to high school for academically promising, urban, low-income African American youth. *Adolescence*, 35, 45-66.
- Nickolite, A., & Doll, B. (2008). Resilience applied in school: Strengthening classroom environments for learning. *Canadian Journal of School Psychology*, 23(1), 94-113.
- Nie, N.H. (1975). *SPSS: statistical package for the social sciences*. New York: Mc Graw Hill.
- Noam, G. (1992). Development as the aim of clinical intervention. *Development and Psychopathology*, 4, 679-696.
- Noddings, N. (1988 December 7). Schools face crisis in caring. *Education Week*, p.32.
- Noddings, N. (2005). *The challenge of care in schools*. New York: Teachers College Press.
- Novick, R. (1998). The comfort corner: Fostering resiliency and emotional intelligence. *Childhood Education*, 74(4), 200-204.

- Obradovic, J., Long, J.D., Cutuli, J. J., Chan, C., Hinz, E., Heistad, D., & Masten, A. S. (2009). Academic achievement of homeless and highly mobile children in an urban school district: Longitudinal evidence on risk, growth, and resilience. *Development and Psychopathology, 21*, 493-518.
- O'Connor, T. G., & Rutter, M. (1996). Risk mechanisms in development: Some conceptual and methodological considerations. *Development and Psychopathology, 5*, 567-579.
- Oden, S., & Asher, S. R. (1977). Coaching children in social skills for friendship making. *Child Development, 48*, 495-506
- O'Dougherty, M., & Wright, F.S. (1990). Children born at medical risk: Factors affecting vulnerability and resilience. In J. Rolf, A.S. Masten, D. Cicchetti, K.H. Neuchterlien, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*. New York: Cambridge University Press, 120-140.
- Ogbu, J.U. (1986). The consequences of the American caste system. In U. Neissor (Ed.), *The School achievement of minority children: New Perspectives*. Hillsdale, NJ: Erlbaum, 19-56.
- Ogbu, J.G. (1992). Understanding cultural diversity and learning. *Educational Researcher, 21*, 5-14.
- Oi-man, K., Hughes, J. N., & Luo, W. (2007). Role of resilient personality on lower achieving first grade students' current and future achievement. *Journal of School Psychology, 45* (1), 61-82.
- Orr, A. J. (2003). Black-White differences in achievement: The importance of wealth. *Sociology of Education, 76*, 281-304.
- Oxley, D. (1994). Organizing for responsiveness: The heterogeneous school community. In M. Wang & E. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects*. Hillsdale, NJ: Lawrence Erlbaum, 179-189.
- Padron, Y. N., Waxman, H. C., & Huang, S. L. (1999). Classroom and instructional learning: Environment differences between resilient and nonresilient elementary school students. *Journal of Education for Students Placed at Risk, 4*, 63-81.
- Padron, Y. N., Waxman, H. C., & Rivera, H. H. (2002). Educating Hispanic students: Obstacles and avenues to improved academic achievement (Educational Practice Report No. 8). Santa Cruz, CA and Washington, DC: Center for Research on Education, Diversity & Excellence.
- Padron, Y. N., Waxman, H. C., Powers, R. A., & Brown, A. (2002). Evaluating the effects of the Pedagogy to Improve Resiliency Program on English language learners. In L. Minaya-Rowe (Ed.), *Teacher training and effective pedagogy*

- in the context of student diversity*. Greenwich, CT: Information Age, 211-238.
- Pap, A. (1953). Reduction-sentences and open concepts. *Methods*, 5, 3-30.
- Parker, G.R., Cowen, E.L., Work, W.C., & Wyman, P.A. (1990). Test correlates of stress affected and stress resistant outcomes among urban children. *Journal of Primary Prevention*, 11, 19-35.
- Paton, D., Smith, L., & Violanti, J. (2000). Disaster response: Risk, vulnerability and resilience. *Disaster Prevention and Management*, 9 (3), 173 -180.
- Perez, W., Espinoza, R., Ramos, K., Coronado, H.M., & Cortes, R. (2009). Academic resilience among undocumented Latino students. *Hispanic Journal of Behavioural Sciences*, 31 (2), 149-181.
- Peterson, D. (1989). *Parent involvement in the educational process*. Urbana, IL: ERIC Clearinghouse on Educational Management, University of Illinois. (ED 312 776).
- Pianta, R.C., Egeland, B., & Sroufe, L.A. (1990). Maternal stress and children's development: Prediction of school outcomes and identification of protective factors. In J. Rolf, A.S. Masten, D. Cicchetti, K.H. Neuchterlien, & S. Weintraub (Eds.), *Risk and protective factors in the development of Psychopathology*. New York: Cambridge University Press, 215-235.
- Pisapia, J. & Westfall, A. (1994). *Developing resilient schools and resilient students*. Richmond, VA: Metropolitan Educational Research Consortium.
- Plancherel et al., (1994). L' hypothese de l' effect buffer a la pre -adolescence. In M. Bolognini, B. Plancherel, R. Nunez, & W. Betteschart, (Eds.), *Preadolescence: Theorie, recherche et clinique*. ESF: Paris, 159-172.
- Plomin, R., & Daniels, D. (1987). Why are children in the same family so different from one another? *Behavior and Brain Sciences*, 10, 1-60.
- Plunkett, S. W., Henry, C. S., Benjamin, J. Houlberg, B. J., Sands, T., & Abarca-Mortensen, S. (2008). Academic support by significant others and educational resilience in Mexican-origin ninth grade students from intact families. *The Journal of Early Adolescence*, 28 (3), 333-355.
- Poulou, M. (2007). School-family relations: Greek parents' perceptions of parental involvement. *International Journal about Parents in Education*, 1.
- Powers, J. D., Bowen, G. L., & Rose, R. A. (2005). Using social environment assets to identify intervention strategies for promoting school success. *Children and Schools*, 27, 177-185.
- Purkey, S. C., & Smith, M. S. (1983). Effective schools: A review. *Elementary School Journal*, 83(4), 427-52.

- Puura, K., Almqvist, F., Tamminen, T., Piha, J., Kumpulainen, K., Rasanen, E. (1998). Children with symptoms of depression-what do the adults see? *Journal of Child Psychology and Psychiatry*, *39*, 577–585.
- Radke-Yarrow, M., & Brown, E. (1993). Resilience and vulnerability in children of multiple-risk families. *Development and Psychopathology*, *5*, 581–592.
- Radke-Yarrow, M., & Sherman, T. (1990). Hard growing: Children who survive. In J. Rolf, A. Masten, D. Cicchetti, K. Neuheterlien, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*. New York: Cambridge University Press, 97-119.
- Radke-Yarrow, M., Nottelmann, E., Martinez, P., Fox, M. B., & Belmont, B. (1992). Young children of affectively ill parents: A longitudinal study of psychosocial development. *Journal of the American Academy of Child and Adolescent Psychiatry*, *31*, 68-77.
- Rak, C.F., & Patterson, L. E. (1996). Promoting resilience in at-risk children. *Journal of Counseling and Development*, *74*(4), 368-373.
- Ramachandran, K.M. (1981). A study of certain affective variables related to under-achievement in Physical Science of secondary school students. Master's Dissertation, University of Calicut.
- Ramesan, E.S. (2000). Achievement motivation, attitude towards Malayalam and some social familial variables differentiating between high and low creative under achievers in Malayalam among secondary school pupils of Kerala. Doctoral Dissertation, University of Calicut.
- Ramey, C. T., & Ramey, S. L. (1998). Prevention of intellectual disabilities: Early interventions to improve cognitive development. *Preventive Medicine*, *27*, 1-9.
- Ramey, C. T., Campbell, F. A., Burchinal, M., Skinner, M. L., Gardner, D. M., & Ramey, S. L. (2000). Persistent effects of early childhood education on high-risk children and their mothers. *Applied Developmental Science*, *4*, 2-14.
- Randolph, E. A., Eth, S., Glynn, S.M., Paz, G.G., Leong, G.B., Shaner, A.L., Strachan, A., Van Vort, W., Escobar, J.I., & Liberman, R.P. (1994). Behavioral family management in schizophrenia: Outcome of a clinic-based intervention. *British Journal of Psychiatry*, *164*, 501-506.
- Raphael, B. (1993). Adolescent resilience: The potential impact of personal development in schools. *Journal of Pediatric Child Health* *29*, S31-S36.
- Read, L. (1999). Teachers' perceptions of effective instructional strategies for resilient and nonresilient students. *Teaching and Change*, *7*, 33-52.
- Reaff, J.P., Zabal, A.Q., & Blech, C. (2006). The Assessment of Problem-Solving Competencies.

- Reiss, D., Plomin, R., & Hetherington, E. M. (1991). Genetics and psychiatry: An unheralded window on the environment. *American Journal of Psychiatry*, *148*, 283-291.
- Reshma, P.T. (2006). Effectiveness of peer tutoring and existing method of teaching on achievement and retention in Biology of standard VIII pupils. Doctoral Dissertation. University of Calicut.
- Resilience Net. (1997). Virtual Library- The Resilience Net Virtual Library is a collection of full-text publications related to the resilience of children and families in the face of adversities. [resilnet.uiuc.edu/library.html](http://resilnet.uiuc.edu/library.html)
- Resnick, M., Bearman, P., Blum, R., Bauman, K., Harris, K., Jones, J., Tabor, J., Beuhring, T., Sieving, R., Shew, M., Ireland, M., Bearinger, L., & Udry, R. (1997). Protecting adolescents from harm: Findings from the national longitudinal study on adolescent health. *Journal of the American Medical Association*, *278*, 823-832.
- Reyes, J. A., & Elias, M. J. (2011). Fostering social-emotional resilience among Latino youth. *Psychology in the Schools*, *48*(7), 2011 C \_ 2011 Wiley Periodicals, Inc.
- Reyes, O., & Jason, L. A. (1993). Pilot study examining factors associated with academic success for Hispanic high school students. *Journal of Youth and Adolescence*, *22*, 57-71.
- Reynolds, A.J. (2000). *Success in early intervention: The Chicago child-parent centers*. Lincoln: University of Nebraska Press.
- Reynolds, W.M., & Graves, A. (1989). Reliability of children's reports of depressive symptomatology. *Journal of Abnormal Child Psychology*, *17*, 647-655.
- Richman, J., Rosenfeld, L. & Bowen, G. (1998). Social support for adolescents at risk of school failure. *Social Work*, *43* (4), 309-323.
- Richters, J.E., & Martinez, P.E. (1993). Violent communities family choices, and children's chances: An algorithm for improving the odds. *Development and Psychopathology*, *5*, 609-627.
- Richters, J.E., & Weintraub, S. (1990). Beyond diathesis: Toward an understanding of high-risk environments. In J. E. Rolf, A.S. Masten, D. Cicchetti, K.G. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*. New York: Cambridge University Press, 67-96.
- Rigsby, L. (1994). The americanization of resilience: Deconstructing research practice. In M. Wang & E. Gordon (Eds.), *Educational resilience in inner-city America*. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers, 85-94.

- Rolf, J. E., Masten, A. S., Cicchetti, D., Nuechterlien, K., & Weintraub, S. (1990). (Eds.), *Risk and protective factors in the development of psychopathology*. New York: Cambridge University Press.
- Rouse, K. (2001). Resilient students' goals and motivation. *Journal of Adolescence*, 24(4), 461-472.
- Rutter, M. (1977). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolf (Eds.), *Primary prevention of psychopathology. Vol. III: Social competence in children*. Hanover, NH: University Press of New England.
- Rutter, M. (1978). Diagnosis and definition. In M. Rutter & E. Schopler (Eds.), *Autism: A reappraisal of treatment*. New York: Plenum.
- Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent, & J. E. Rolf (Eds.), *Primary prevention of psychopathology, Vol. 3: Social competence in children*. Hanover, NH: University Press of New England, 49-74.
- Rutter, M. (1980). *Changing youth in a changing society*. Cambridge, Mass., Harvard University Press.
- Rutter, M. (1983). Stress coping and development: Some issues and some questions. In N. Garmezy & M. Rutter (Eds.), *Stress, coping and development in children*. New York: McGraw-Hill, 1-41.
- Rutter, M. (1984). Resilient children. Why some disadvantaged children overcome their environments and how we can help. *Psychology Today*, 57- 65.
- Rutter, M. (1985). Family and school influences on cognitive development. *Journal of Child Psychology and Psychiatry*, 26, 683-704.
- Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *British Journal of Psychiatry*, 147, 598-611.
- Rutter, M. (1987). Parental mental disorder a psychiatric risk factor. In R. Hales & A. Frances (Eds.), *American psychiatric association annual review (Vol.6)*. Washington, DC: American Psychiatry Press, Inc, 647-663.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316 - 331.
- Rutter, M. (1989). Pathways from childhood to adult life. *Journal of Child Psychology and Psychiatry*, 30, 23-51.
- Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In J. Rolf, A. Masten, D. Cicchetti, K. Nuechterlien, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*. Cambridge University Press. New York, USA, 181-214.

- Rutter, M. (1993). Resilience: Some conceptual considerations. *Journal of Adolescent Health, 14*, 626-631.
- Rutter, M. (1995). Psychosocial adversity: Risk, resilience, and recovery. *Southern African Journal of Child and Adolescent Psychiatry, 7* (2), 75-88.
- Rutter, M. (1999). Resilience concepts and findings: Implications for family therapy. *Journal of Family Therapy, 21*, 119-144.
- Rutter, M. (2000). Resilience reconsidered: Conceptual considerations, empirical findings, and policy implications. In J. P. Shonkoff, & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (2nd ed). New York: Cambridge University Press, 651-682.
- Rutter, M., Maughan, B., Mortimore, P., Ouston, J., & Smith, A. (1979). *Fifteen thousand hours: Secondary schools and their effect on children*. Cambridge: Harvard University Press.
- Rutter, M., & Quinton, O. (1994). Long-term follow-up of women institutionalized in childhood: Factors promoting good functioning in adult life. *British Journal of Developmental Psychology, 8*, 225-234.
- Ryan, P. K., Cowen, E.L., Wyman, P.A., Work, W. C. & Keith, M.B. (1998). Differences in stressors experienced by urban African, American, White, and Hispanic children. *Journal of Community Psychology, 26*(5), 425-428.
- Rydell, A-M., Hagekull B., & Bohlin, G. (1997). Measurement of two social competence aspects in middle childhood. *Developmental Psychology, 33*, 824-833.
- Safilios-Rothschild, C. (1982). Female power, autonomy and demographic change in the third world. In A. Richard, M. Buvinic, & N.H. Youssef (Eds.), *Womens' role and population trends in the third world*, London: Croom Helm, 117-132.
- Sagor, R. (1996). Building resiliency in students. *Educational Leadership, 54* (1), 38-41.
- Sameroff, A.J., & Chandler, M.J. (1975). Reproductive risk and the continuum of care taking causality. In F.D. Horowitz, M. Hetherington, S. Scarr-Salaptek, & G. Siegel (Eds.), *Review of child development research*. Chicago: University of Chicago Press, 187-243.
- Sameroff, A.J., & Seifer, R. (1990). Early contributions to developmental risk. In J. Rolf, A.S. Masten, D. Cicchetti, K.H. Nuchterlien & S. Weintraub (Eds.), *Risk and protective factors in the development of Psychopathology*. New York: Cambridge University Press, 52-66.

- Sameroff, A.J., Seifer, R., Barocas, R., Zax, M., & Greenspan, S. (1987). Intelligence quotient scores of 4-year old children: Social environmental risk factors. *Pediatrics*, *79*, 343-350.
- Sameroff, K. J., Seifer, R., Zax, M., & Barocas, R. (1987). Early indicators of developmental risk: Rochester Longitudinal Study. *Schizophrenia Bulletin*, *13* (3), 383-394.
- Sameroff, P. J., & Seifer, R. (1983). Familial risk and child competence. *Child Development*, *54*, 1254-1268.
- Sampson, R. J., & Laub, J. H. (1994). Urban poverty and the family context of delinquency: A new look at structure and process in a classic study. *Child Development*, *65*, 523-540.
- Sarason, S. (1990). The predictable failure of educational reform. San Francisco: Jossey-Bass. *School Education*, *123*(3), 548–552.
- Schoon, I. (2009). High hopes in a changing world: Social disadvantage, educational aspirations, and occupational attainment in three British cohort studies. In C. Raffo, A. Dyson, H. Gunter, D. Hall, L. Jones & A. Kalambouka (Eds.), *Education and poverty in affluent countries*. London: Routledge, 97-110.
- Schoon, I. (2009). Measuring Social Competencies. Berlin: Council for Social and Economic Data (RatSWD). Working paper 58.
- Scott-Jones, D. (1991). Adolescent childbearing: Risk and resilience. *Education and Urban Society*, *24*(1), 53-64.
- Seaton, E. K., & Taylor, R. D. (2003). Exploring familial processes in urban, low-income African American families. *Journal of Family Issues*, *24*, 627 -644.
- Seidman, E., Allen, L., Aber, J.L., Mitchell, C., & Feinman, J. (1994). The impact of school transitions in early adolescence on the self-system and perceived social context of poor urban youth. *Child Development*, *65*, 507–522.
- Seifer, A. J., Sameroff, K. J., Baldwin, A. L., & Baldwin, C. P. (1992). Child and family factors that ameliorate risk between 4 and 13 years of age. *Journal of the American Academy of Child and Adolescent Psychiatry*, *31*, 893-903.
- Seligman, M. (1995). *The optimistic child*. Boston: Houghton Mifflin.
- Shaw, S. R. (2008). An educational programming framework for a subset of students with diverse learning needs: Borderline intellectual functioning. *Intervention in School and Clinic*, *43* (5), 291-299.
- Sheldon, K.M. & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin*, *24*, 1319-1331.

- Shirk, S. (1988). Causal reasoning and children's comprehension of therapeutic interpretations. In S. Shirk (Ed.), *Cognitive development and child psychotherapy*. New York: Plenum Press, 53–90.
- Shonkoff, J., & Phillips, D. A. (Eds.). (2000). *From neurons to neighborhoods*. Washington, DC: National Academy of Sciences.
- Silva, P. & Stanton, W. (Eds.). (1996). *From child to adult: The dunedin multidisciplinary health and development study*. Auckland, NZ: Oxford University Press.
- Sinay, E. (2009). Academic resilience: Students beating the odds. *Organizational Development/Research and Information Services*, 5 (1), 1-2.
- Singh, K., Bickley, P.G., Trivette, P.S., Keith, T.Z., Keith, P.B., & Anderson, E. (1995). The effects of four components of parental involvement on eighth grade student achievement: Structural analysis of NELS-88 data. *School Psychology Review*, 24, 99-317.
- Siraj-Blatchford, J. (1998). Learning through making in the early years. In J.S. Smith, & E. Norman, (Eds.), *International conference on design and technology educational research and curriculum development*. Loughborough University, 32-36.
- Sirin, S. R., & Rogers-Sirin, L. (2004). Exploring school engagement of middle-class African American adolescents. *Youth and Society*, 35, 323 – 340.
- Smokowski, P. R. (1998). Prevention and intervention strategies for promoting resilience in disadvantaged children. *Social Service Review*, 337-364.
- Smokowski, P.R., Reynolds, A.J., & Bezruczko, N. (1999). Resilience and protective factors in adolescence: An autobiographical perspective from disadvantaged youth. *Journal of School Psychology*, 37(4), 425-448.
- Snow, C. E., Barnes, W. E., Chandler, J., Goodman, I. F., & Hemphill, L. (1991). *Unfulfilled expectations: Home and school influences on literacy*. Cambridge, MA: Harvard University Press.
- Snow, C. E., Barnes, W.S., Chandler, J. I., Goodman, F., & Hemphill, L. (1991). *Unfulfilled expectations: Home and school influences on literacy*. Cambridge, MA: Harvard University Press.
- Soman, K. (1977). Some affective correlates of Mathematics achievement of secondary school students. Doctoral Dissertation, University of Kerala, Thiruvananthapuram.
- Somasundaram, M. (1980). A comparative study of certain personality variables related to over-, normal- and under-achievement in secondary school Mathematics. Doctoral Dissertation, University of Calicut.

- Spencer, M.B. (1990). Development of minority children: An Introduction. *Child Development, 61*, 267-269.
- Spencer, M.B. (1999). Social and cultural influences on school adjustment: The application of an identity-focused cultural ecological perspective. *Educational Psychologist, 34*, 43-57.
- Spencer, M.B., & Dupree, D. (1996). African American Youths' eco cultural challenges and psychosocial opportunities: An alternative analysis of problem behaviour outcomes. In D.Cicchetti & S. Toth (Eds.), *Adolescence: Opportunities and challenge*(Vol.7). *Rochester symposium on developmental psychopathology*. Rochester, NY: University of Rochester Press, 259-282.
- Sroufe, L.A. (1979). The coherence of individual development: Early care, attachment, and subsequent developmental issues. *American Psychologist, 34*, 834-841.
- Sroufe, L.A., Egeland, B., & Kreutzer, T. (1990). The fate of early experience following developmental change: Longitudinal approaches to individual adaptation in childhood. *Child Development, 61*, 1363-1373.
- Sroufe, L.A., & Rutter, M. (1984). The domain of developmental psychopathology. *Child Development, 55*, 77-29.
- St Pierre, R.G., & Layzer, J.I. (1998). Society of Research in Child Development Social Policy Report. XII Improving the life chances of children in poverty: Assumptions and what we have learned.
- Stephanie Kim Hawkins (2011).Economically disadvantaged students: A case study of resilient qualities that encourage academic success. A Dissertation Presented in Partial Fulfillment Of the Requirements for the Degree Doctor of Education. Liberty University, Lynchburg, VA.
- Stewart, D., Sun, J., Patterson, C., Lemerle, K., & Hardie, M. (2004). Promoting and building resilience in primary school communities: Evidence from a comprehensive 'health promoting school' approach. *International Journal of Mental Health Promotion, 6* (3), 26-33.
- Stone, S. (2006). Correlates of change in student reported parent involvement in schooling: A new look at the national education longitudinal study of 1998. *American Journal of Orthopsychiatry, 76* (4),518-530.
- Storer, J. H., Cychosz, C. M., & Licklider, B. L. (1995). Rural school personnel's perception and categorization of children at-risk: A multi-methodological account. *Equity and Excellence in Education, 28*, 36-45.
- Stouthamer-Loeber, M., Loeber, R., Farrington, D. P., Zhang, Q., Van Kammen, W., & Maguin, E. (1993). The double edge of protective and risk factors for delinquency: Interrelations and developmental patterns. *Development and Psychopathology, 5*, 683-701.

- Straus, M. (1983). Ordinary violence, child abuse and wife beating: What do they have in common? In D. Finkelhor, R. Gelles, G. Hotaling, & M. Straus (Eds.), *The dark side of families: Current family violence research*. Beverly Hills, CA: Sage.
- Swanson, D. P., & Spencer, M. B. (1991). Youth policy, poverty, and African Americans: Implications for resilience. *Education and Urban Society*, 24, 148-61.
- Takanishi, R. (1996). Changing images of adolescents: Rethinking our policies. In E.F. Zigler, S.L. Kagan, & N.W. Hall (Eds.), *Children, families, and government: Preparing for the 21st century*. New York: Cambridge University Press, 256–267.
- Talyor, R.D., & Wang, M.C. (2000). Resilience across contexts: Family, work, culture, and community. Mahwah, N.J: Lawrence Erlbaum.
- Tarter, R.E., & Vanyukov, M. (1999). Re-visiting the validity of the construct of resilience. In M.D. Glantz & J.L. Johnson (Eds.), *Resiliency and development: Positive life adaptations*. New York: Plenum, 85-100.
- Taylor, A. R. (1991). Social competence and the early school transition: Risk and protective factors for African-American children. *Education and Urban Society*, 24(1), 15-26.
- The Carnegie Foundation for the Advancement of Teaching. (1988). *An Imperiled Generation: Saving Urban Schools*. Princeton, NJ. Lawrence Erlbaum.
- The Comprehensive Teaming to Assure Resiliency in Children Project. (1996). *Moving beyond risk to resiliency: The school's role in supporting resiliency in children*.
- Thomas, D. A. (2011). *Reaching resilience: Protective factors and adult children of divorce*. Retrieved from [http://counselingoutfitters.com/vistas/vistas11/Article 22.pdf](http://counselingoutfitters.com/vistas/vistas11/Article%2022.pdf)
- Thompson, R. A. (2006). *Nurturing future generations: Promoting resilience in children and adolescents through social, emotional, and cognitive skills* (2nd ed.). New York: Routledge. Thousand Oaks, CA: Corwin Press.
- Tolan, P.T. (1996). How resilient is the concept of resilience?. *The community Psychologist*, 29, 12-15.
- Toland, J. & Carrigan, D. (2011). Educational psychology and resilience: New concept, new opportunities. *School Psychology International*, 32(1), 95-106.
- Ungar, M. (2007). *Playing at being bad: The hidden resilience of troubled teens*. Mc Clelland and Stewart Limited, Toronto.
- Utsey, S. O., Bolden, M. A., Lanier, Y., & Williams, O. (2007). Examining the role of culture specific coping as a predictor of resilient outcomes in African

- Americans from high-risk urban communities. *Journal of Black Psychology*, 33, 75-93.
- Van der Leeuw, S.E. & Leygonie, C.A. (2000). A long-term perspective on resilience in socio-natural systems. Paper presented at the workshop on *System Shocks – System Resilience*, held in Abisko, Sweden, May 22-26.
- Voisin, R.D., & Neilands, B.T. (2005). Low school engagement and sexual behaviors among African American youth: Examining the influences of gender, peer norms, and gang involvement. *Child Youth Service Review*, 32(1), 51–57.
- Walberg, H. J. (1984). Improving the productivity of American schools. *Educational Leadership*, 41, 19-27.
- Walberg, H. J. (1984). Families as partners in educational productivity. *Phi Delta Kappan*, 65(6), 397-400.
- Waller, M. A. (2001). Resilience in ecosystemic context: Evolution of the concept. *American Journal of Orthopsychiatry*, 71, 290-297.
- Wallerstein, J. (1983). Children of divorce: The psychological tasks of the child. *American Journal of Orthopsychiatry*, 53(2), 230-243.
- Walsh, F. (1998). *Strengthening Family Resilience*. New York: Guilford Press.
- Wang, M. C. (1996). Fostering resilience among children at-risk of educational failure: National Research Center on Education in the Inner Cities, Philadelphia, PA. (ERIC Document Reproduction Service no. ED401368).
- Wang, M. C., & Palincsar, A.S. (1989). Teaching students to assume an active role in their learning. In M.C. Reynolds (Ed.), *Knowledge base for beginning teachers*. New York: Pergammon Press, 71-84.
- Wang, M. C., & Walberg, H.J. (1985). Classroom Climate as Mediator of Educational Inputs and Outputs. In B. J. Fraser (Ed.), *The Study of learning environments*. Salem, OR: Assessment Research and Perth: Western Australia Institute of Technology.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1994). Educational resilience in inner cities. In M. C. Wang & E. W. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects*. Mahwah, NJ: Lawrence Erlbaum, 45-72.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1997). Fostering educational resilience in inner-city schools. Publication series no. 4 (L97-4): Mid-Atlantic lab for student Success, Philadelphia, PA; National Research Center on Education in the Inner Cities, Philadelphia, PA. (ERIC Document Reproduction Service no. ED419856).

- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1997b). Revitalizing inner cities: Focusing on children's learning. Publication series no. 7 (L97-7): Mid-Atlantic lab for student success, Philadelphia, PA; National Research Center on Education in the Inner Cities, Philadelphia, PA. (ERIC Document Reproduction Service no. ED419067).
- Wang, M. C., Haertel, G.D., & Walberg, H.J. (1998). *Building educational resilience*. Bloomington, In Phi Delta Kappa Educational Foundation.
- Wang, M.C. & Gordon, E.(Eds.). (1994). *Risk and resilience in inner-city America: Challenges and prospects*. Hillsdale, NJ: Erlbaum.
- Wang, M.C. (1996). Next steps in Inner-city education: Focusing on resilience development and learning success. *The ERIC Review*, 4 (2) 1-8.
- Wang, M.C., Haertel, G.D., & Walberg, H.J. (1998). *Building educational resilience*. Bloomington, IN: Phi Delta Kappa Educational Foundation.
- Wang, M. C. (1996). Fostering resilience among children at risk of educational failure. Presented at the Annual Conference of the American Psychological Association, Toronto, Canada.
- Waters, E. & Sroufe, L.A. (1983). Social competence as a developmental construct. *Developmental Review*, 3, 779 – 797.
- Watt, N.F., Moorehead-Slaughter, O., Japzon, D.M., & Keller, G.G. (1990). Children's adjustment to divorce: Self-image, social relations, and school performance. In J. Rolf, A.S.Masten, D.Cicchetti, K.H. Nuechterlien, & S. Weintraub, (Eds.), *Risk and protective factors in the development of psychopathology*. Cambridge University Press, 281-304.
- Waxman, H. C., & Huang, S. L. (1996). Motivation and learning environment differences between resilient and nonresilient inner-city middle school students. *Journal of Educational Research*, 90, 93-102.
- Waxman, H. C., Gray, J. P., & Padron, Y. N. (2003). Review of Research on Educational Resilience. Research Reports. Center for Research on Education, Diversity and Excellence, U. C. Berkeley.
- Waxman, H. C., Huang, S. L., & Padron, Y. N. (1997). Motivation and learning environment differences between resilient and non-resilient Latino middle school students. *Hispanic Journal of Behavioral Sciences*, 19, 137-55.
- Waxman, H. C., Huang, S. L., & Wang, M. C. (1997). Investigating the multilevel classroom learning environment of resilient and nonresilient students from inner-city elementary schools. *International Journal of Educational Research*, 27, 343-53.

- Weaver, D. (2010). *The relationship between cultural/ethnic identity and individual protective factors of academic resilience*. Retrieved from [http://counselingoutsitters.com/Vistas 10/ Article\\_67.pdf](http://counselingoutsitters.com/Vistas%2010/Article_67.pdf),1-21.
- Wehlage, G., Rutter, R., Smith, G., Lesko, N., & Fernandez, R. (1989). *Reducing the risk: Schools as communities of support*. Philadelphia: Falmer Press.
- Weikart, D., Epstein, A., Schweinhard, L., & Bond, J. (1978). *The ypsilanti preschool curriculum demonstration Project: Preschool years and longitudinal results*. Ypsilanti, MI: Monographs of the High/Scope Educational Research Foundation.
- Weis, L., & Fine, M. (Eds.). (1993). *Beyond silenced voices: Class, race, and gender in united states schools*. New York: State University of New York Press.
- Weissberg, R.P., & Greenberg, M.T. (1998). School and community competence-enhancement and prevention programs. Handbook of child psychology. In I.E. Siegel, & K.A. Renninger (Eds.), *Child psychology in practice*. 5. Vol. 4. New York: Wiley, 877–954.
- Weisz, J.R., Suwanlert, S., Chaiyasit, W., Weiss, B., Walter, B., Anderson, W. (1988). Thai and American perspectives on over- and undercontrolled child behavior problems: Exploring the threshold model among parents, teachers, and psychologists. *Journal of Consulting and Clinical Psychology*, 56, 601-609.
- Welsh, J.A., & Bierman, K.L. (2002). *Social competence*. Gale Encyclopaedia of Childhood and Adolescence.
- Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology*, 89(3), 411-419.
- Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A study of resilient children*. McGraw-Hill: New York.
- Werner, E.E., & Smith, R.S. (2001). *Journeys from childhood to midlife: Risk, resilience and recovery*. Ithaca, NY: Cornell University Press.
- Werner, E . E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Ithaca, NY: Cornell University Press.
- Werner, E. E., & Smith, R. S. (1987). *Vulnerable but invincible: A longitudinal study of resilient children and youth*. New York: Adams, Bannister and Cox.
- Werner, E. E. & Smith, R. S. (1988). *Vulnerable but invincible: A longitudinal study of resilient children and youth*. New York, Adams, Bannister and Cox.
- Werner, E. E., & R. Smith (1989). *Vulnerable but invincible: a longitudinal study ofresilient children and youth*. New York: Adams, Bannister, and Cox.

- Werner, E. E. (1989). High risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry*, 59 (1), 72-81.
- Werner, E. E. (1990). Protective factors and individual resilience. In S. J. Meisels & J. P. Shonkoff (Eds.), *Handbook of early childhood intervention*. New York: Cambridge University Press, 97-116.
- Werner, E. E. (1993). Risk, resilience, and recover: Perspectives from the Kauai longitudinal study. *Development and Psychopathology*, 5, 503-515.
- Werner, E. E. (1995). Resilience in development. *Current Directions in Psychological Science*, 4 (3), 81-5.
- Werner, E. E. (2000). Protective factors and individual resilience. In J.P. Shonkoff, & S.J. Meisels (Eds.), *Handbook of early childhood intervention* (2nd ed.). New York: Cambridge University Press, 115-132.
- Werner, E. E., & Smith, R. S. (1977). *Kauai's children come of age*. Honolulu: University of Hawaii Press.
- Werner, E.E. (1984). Resilient Children. *Young children*, 1, 68-72.
- Werner, E.E. (1994). Overcoming the odds. *Journal of Developmental and Behavioural Pediatrics*, 2, 131-136.
- Werner, E.E. (1996). How children become resilient: Observations and cautions. *Resilience in Action, Winter*, 18-28.
- West, D.J. & Farrington, D.P. (1973). *Who Becomes Delinquent?* London: Heinemann.
- Wettersten, K. B., Rudolph, S. E., Faul, K., Gallagher, K., Trangsrud, H. B., & Adams, K. (2004). Freedom through self-sufficiency: A qualitative examination of the impact of domestic violence on the working lives of women in shelter. *Journal of Counseling Psychology*, 51, 447-462.
- Wheaton, B. (1985). Models for the stress buffering functions of coping resources. *Journal of Health and Social Behaviour*, 26,352-364.
- Whittaker, J. K., & Garbarino, J. (1983). *Social support networks: Informal helping in the human services*. New York: Aldine Publishing Company.
- Wiersma, W. (1986). *Research methods in education: An introduction* (4<sup>th</sup> ed.). Boston: Allyn and Bacon.
- Wildavsky, A. B. (1991). *Searching for safety*. Transaction Publishers, New Brunswick.
- Wildt, A. R. & Ahtola, O.T. (1978). *Analysis of covariance*. Quantitative Applications in the Social Sciences series #12. Thousand Oaks, CA: Sage Publications.

- Wilks, S. E. (2008). Resilience amid academic stress: The moderating impact of social support among social work students. *Advances in Social Work, 9*(2), 106-125
- Wilson, L. (2007). Great American schools: The power of culture and passion. *Educational Horizons, 86*(1), 35-44.
- Wilson-Sadberry, K. R., Winfield, L. F., & Royster, D. A. (1991). Resilience and persistence of African-American males in post-secondary enrollment. *Education and Urban Society, 24*(1), 87-102.
- Winer, B. J. (1971). *Statistical principles in experimental design*. New York: Mc Graw Hill.
- Winfield, L. F. (1991). Resilience, schooling, and development in African-American youth: A conceptual framework. *Education and Urban Society, 24*(1), 5-14.
- Winfield, L. F. (1994). *Developing resilience in urban youth. Urban Education Monograph*. Washington, DC: North Central Regional Education Laboratory, 37-59..
- Winfield, L. F., & Manning, J. (1992). Changing school culture to accommodate student diversity. In M. E. Dilworth (Ed.), *Diversity in teacher education: New expectations*. San Francisco, CA: Jossey-Bass.
- Wolff, S. (1995). The concept of resilience. *Australian and New Zealand Journal of Psychiatry, 29* (4), 565-574.
- Worley, L.C. (2007). At-risk students and academic achievement: The relationship between certain selected factors and academic success. Doctoral Dissertation in Educational Leadership and Policy Studies. Virginia Polytechnic and State University.
- Wyman, P. A., Cowen, E. L., Work, W. C., Hoyt-Myers, L., Magnus, K. B., & Fagan, D. B. (1999). Caregiving and developmental factors differentiating young at-risk urban children showing resilient versus stress-affected outcomes: A replication and extension. *Child Development, 70* (3), 645-659.
- Wyman, P. A., Cowen, E.L., Work, W.C., & Kerley, J.H. (1993). The role of children's future expectations in self-system functioning and adjustment to life stress: A prospective study of urban at-risk children. *Development and Psychopathology, 5*, 649-661.
- Wyman, P.A., Cowen, E.L., Work, W.C., & Parker, G.R. (1991). Developmental and family milieu correlates of resilience in urban children who have experienced major life stress. *American Journal of Community Psychology, 19*, 405-426.
- Yancey, W. L., & Saporito, S. J. (1997). The social ecology of education: The case of Houston's inner-city public schools. In G. D. Haertel & M. C. Wang

- (Eds.), *Cordination, cooperation, collaboration*. Philadelphia, PA: The Mid-Atlantic Regional Educational Laboratory at Temple University, 136-14.
- Youngs, B. (1995). *Stress and your child: Helping kids cope with the strains and pressures of life*. New York: Fawcett Columbine.
- Zarrett, N., Peck, S.C., & Eccles, J.S. (2005a). Getting youth involved and keeping them involved: Predictors of adolescents' activity-based identity structures. In J.O. Jager (Ed.), *Identity development and (dis)continuity: Clarifying the process of identity development via complexity*; Symposium conducted at the biennial meeting of the Society of Research on Child Development; Atlanta, GA.
- Zarrett, N., Peck, S.C., & Eccles, J.S. (2005b). The effects of activity involvement on positive youth development: A pattern-centered approach to studying how youth spend their out-of-school time during the adolescent years. Poster presented at the biennial meeting of the Society for the Study of Human Development; Asilomar, CA.
- Zarrett, N.R. (2007). *The dynamic relation between out-of-school activities and adolescent development*. Doctoral dissertation, University of Michigan.
- Zigler, E., & Glick, M. (1986). *A developmental approach to adult psychopathology*. New York: Wiley.
- Zigler, E., & Styfco, S.J. (1993). Strength in unity: Consolidating federal education programs for young children. In E. Zigler, & S.J. Styfco, (Eds.), *Head start and beyond: A national plan for extended childhood intervention*. New Haven, CT: Yale University Press, 111–145.
- Zigler, E., & Styfco, S.J. (1996). Head start and early childhood intervention: The changing course of social science and social policy. In E. F. Zigler, S.L. Kagan, & N.W. Hall, (Eds.), *Children, families, and government: Preparing for the 21st century*. New York: Cambridge University Press, 132–155.
- Zigler, E., Taussig, C., & Black, K. (1992). Early childhood intervention: A promising preventative for juvenile delinquency. *American Psychologist*, 47, 997-1006.

**DEPARTMENT OF EDUCATION  
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**SCALE OF RISK FACTORS**

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*വ്യക്തിപരവും കുടുംബപരവും വിദ്യാലയവുമായി ബന്ധപ്പെട്ട പ്രശ്നങ്ങൾ കൂട്ടികളിൽ പഠനപരമായി എത്രമാത്രം ബുദ്ധിമുട്ടുണ്ടാക്കുന്നു എന്നത് അളക്കുന്നതിനുള്ള ഒരു മാനകമാണിത്. ഓരോതരത്തിൽ ഉൾപ്പെടുന്ന ബുദ്ധിമുട്ടുകളും പ്രത്യേകമായി അളക്കുന്നതരത്തിലാണ് ഇത് രൂപപ്പെടുത്തിയിട്ടുള്ളത്. അതിനനുയോജ്യമായ ഉത്തര സൂചികകളും ഉൾപ്പെടുത്തിയിട്ടുണ്ട്. ഓരോ മേഖലയിലെയും ബുദ്ധിമുട്ടുകൾ അറിയുന്നതിന് കൂട്ടികളിലെ വ്യക്തിപ്രശ്നങ്ങൾ, ഗാർഹികമായ പ്രശ്നങ്ങൾ, വിദ്യാലയവുമായി ബന്ധപ്പെട്ട പ്രശ്നങ്ങൾ എന്നിവ അളക്കാൻ പ്രത്യേകം പ്രത്യേകമായോ, ഇവ മൂന്നും ഒന്നിച്ചോ ഉപയോഗിക്കാവുന്നതാണ്. ഓരോ മേഖലയിലെയും പ്രശ്നങ്ങൾക്ക് പ്രത്യേകം മാർക്ക് നൽകേണ്ടതാണ്. ഇവ ക്ലാസിൽ നടത്തുന്നതിന് 15 മുതൽ 20 മിനുട്ട് വരെ നൽകാവുന്നതാണ്.*

Scale of risk factors is meant for measuring the negative interference of personal, familial, and school related problems in academic matters of students. The scale is designed to measure each difficulty separately. Appropriate response sheets are provided along with it. In order to measure the difficulties in each domain viz., personal, familial and school related, one can administer the scales separately or in combination. Care should be taken to assign separate score to problems in each domain. 15 to 20 minutes can be provided for class administration.

## APPENDIX A1

### SCALE OF CHILD RISK (Draft)

#### നിർദ്ദേശങ്ങൾ

നിങ്ങളുടെ വ്യക്തിപരമായ പ്രശ്നങ്ങളും കഴിവില്ലായ്മകളും നിങ്ങളുടെ പഠനത്തെ എത്രമാത്രം പ്രതികൂലമായി ബാധിക്കുന്നു എന്നതിനെ കുറിച്ചുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എന്റെ അസുഖങ്ങളും ശാരീരിക പ്രശ്നങ്ങളും എന്റെ പഠനത്തെ തടസ്സപ്പെടുത്തുന്നു.
2. വ്യക്തമായി സംസാരിക്കാനുള്ള കഴിവില്ലായ്മ എനിക്ക് പല പ്രശ്നങ്ങളും ഉണ്ടാക്കുന്നു.
3. പഠനപരമായ പ്രശ്നങ്ങൾ പരിഹരിക്കാനുള്ള കഴിവില്ലായ്മ എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
4. നിരാശ എന്റെ വ്യക്തി, സ്കൂൾ ജീവിതത്തെ വളരെ മോശമായി ബാധിക്കുന്നു.
5. എനിക്ക് പ്രശ്നങ്ങളുണ്ടാകുമ്പോൾ സഹായിക്കാൻ ആരുമില്ല എന്ന തോന്നൽ എന്നെ തളർത്തുന്നു.
6. വ്യക്തമായ ലക്ഷ്യങ്ങൾ രൂപീകരിക്കാനുള്ള കഴിവില്ലായ്മ എനിക്ക് പ്രശ്നങ്ങൾ ഉണ്ടാക്കുന്നു.
7. പ്രശ്നങ്ങളെ മനസ്സിലാക്കാനുള്ള കഴിവില്ലായ്മ എന്നെ പുതിയ പ്രശ്നങ്ങളിലേക്ക് നയിക്കുന്നു.
8. ഭാവി ജീവിതം ദുരിതപൂർണ്ണമാണെന്ന ചിന്ത എന്നെ ഭയപ്പെടുത്തുന്നു.
9. എല്ലാവരുടെയും ഇരിക്കുമ്പോഴും ഞാൻ ഒന്നാണെന്ന് തോന്നുന്നു.
10. പരിഭ്രമം കൊണ്ട് പല കാര്യങ്ങളും അറിഞ്ഞിട്ടും ഞാൻ തെന്തായി ചെയ്യുന്നു.
11. എതിർ ലിംഗത്തിലുള്ള ആളുകളുമായി സംസാരിക്കാനും ഇടപെടാനും എനിക്ക് പേടിയുണ്ട്.
12. അകാരണമായ ഭയം എന്റെ ജീവിതത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
13. കാര്യങ്ങൾ കൃത്യമായി ആസൂത്രണം ചെയ്യാനുള്ള കഴിവില്ലായ്മ എന്റെ നേട്ടങ്ങൾക്ക് തടസ്സമാകുന്നു.
14. സ്വന്തമായി ഒരു കാര്യവും ചെയ്യാൻ കഴിവില്ല എന്ന തോന്നൽ എന്റെ ജീവിതം പ്രതിസന്ധിയിലാക്കുന്നു.
15. കഠിന പ്രയത്നം ചെയ്യാൻ എനിക്ക് ഇഷ്ടമല്ല.
16. അശുഭാപ്തി വിശ്വാസം എന്റെ പഠനത്തെ ദോഷകരമായി ബാധിക്കുന്നു.

**APPENDIX A2**

**SCALE OF FAMILY RISK (Draft)**

**നിർദ്ദേശങ്ങൾ**

ഗൃഹാന്തരീക്ഷവും മാതാപിതാക്കളുടെ സ്വഭാവരീതികളും പഠനത്തിൽ നിങ്ങൾക്ക് എത്ര മാത്രം ബുദ്ധിമുട്ടു വാക്കുന്നു എന്നതിനെപ്പറ്റിയുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്നത് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. മാതാപിതാക്കൾ എന്റെ കാര്യങ്ങൾ ശ്രദ്ധിക്കാത്തത് എന്നെ മാനസികമായി തളർത്തുന്നു.
2. മാതാപിതാക്കൾ തമ്മിലുള്ള വഴക്ക് എന്നെ വളരെയധികം വേദനിപ്പിക്കുന്നു.
3. വീടിനകത്തും എനിക്ക് സുരക്ഷിതത്വബോധം അനുഭവപ്പെടാറില്ല.
4. രക്ഷിതാക്കൾക്കുണ്ടാകുന്ന അസുഖങ്ങൾ എന്നെ മാനസികമായി തളർത്തുന്നു.
5. രക്ഷിതാക്കളിൽ നിന്ന് വേണ്ടത്ര സ്നേഹം കിട്ടുന്നില്ല എന്ന് എനിക്ക് തോന്നാറുണ്ട്.
6. മാതാപിതാക്കൾ എനിക്ക് പഠനസൗകര്യങ്ങൾ ഒരുക്കി തരാറില്ല.
7. ദാരിദ്ര്യം എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
8. എന്റെ കുടുംബാംഗങ്ങൾ തമ്മിൽ മാനസിക ഐക്യമുണ്ടെന്ന് എനിക്ക് തോന്നാറില്ല.
9. ഗാർഹിക കാര്യങ്ങളിൽ സഹായം ചെയ്ത് കൊടുത്തതിനുശേഷമേ എനിക്ക് സ്കൂളിലെത്താൻ സാധിക്കാറുള്ളൂ.
10. സ്കൂൾ വിട്ട് വീട്ടിലെത്തിയ ശേഷം രക്ഷിതാക്കൾ ഏൽപ്പിക്കുന്ന ജോലികൾ ചെയ്തതിനുശേഷം വളരെ വൈകിയെ എനിക്ക് പഠിക്കാൻ പന്മാറുള്ളൂ.
11. എന്റെ കുടുംബത്തിലെ ചില അംഗങ്ങൾക്കുള്ള ചില രോഗങ്ങൾ എനിക്ക് മാനസിക പ്രശ്നങ്ങൾ ഉണ്ടാക്കുന്നു.
12. എന്റെ ജീവിതത്തിൽ അനാവശ്യമായ നിയന്ത്രണങ്ങൾ ഏർപ്പെടുത്തുന്ന രക്ഷിതാക്കളെ ഞാൻ ഇഷ്ടപ്പെടുന്നില്ല.
13. വളരെ മോശമായ ഒരു ഗൃഹാന്തരീക്ഷമാണ് എന്റേതെന്ന ചിന്ത എന്റെ പഠനത്തെ സാരമായി ബാധിക്കുന്നു.
14. എന്റെ മാതാപിതാക്കളുമായി ദുഃഖമായ മാനസിക ബന്ധം എനിക്കില്ല.
15. മാതാപിതാക്കൾ ഞങ്ങൾ മക്കളോട് പക്ഷപാതം കാണിക്കാറുണ്ട്.
16. എന്റെ കുടുംബാംഗങ്ങളുടെ ചില ദുഷ്കീലങ്ങൾ എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
17. നല്ലൊരു വീടില്ല എന്ന ചിന്ത എന്നെ വേദനിപ്പിക്കുന്നു.
18. മദ്യപാനിയായ പിതാവ് എനിക്ക് നിരവധി പ്രശ്നങ്ങളുണ്ടാക്കുന്നു.
19. വിവാഹബന്ധം വേർപ്പെടുത്തിയ മാതാപിതാക്കൾ എന്റെ വലിയ വേദനയാണ്.

### APPENDIX A3

## SCALE OF SCHOOL RISK (Draft)

#### നിർദ്ദേശങ്ങൾ

അധ്യാപകരുടെയും സഹപാഠികളുടെയും പെരുമാറ്റരീതികളും സ്കൂൾ അന്തരീക്ഷവും നിങ്ങളുടെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നുവോ എന്നതിനെക്കുറിച്ചുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. അധ്യാപകർ എന്നെ ശ്രദ്ധിക്കുന്നില്ല എന്ന ചിന്ത എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
2. അധ്യാപകർക്ക് എന്നെക്കുറിച്ച് നല്ല പ്രതീക്ഷയില്ല എന്നെനിക്ക് തോന്നാറുണ്ട്.
3. സ്കൂൾ ജീവിതം എനിക്ക് ദുഃസ്സഹമാണ്.
4. സംശയങ്ങൾ അധ്യാപകരോട് ചോദിക്കുന്നത് കൊണ്ട് എന്നോട് അധ്യാപകർക്ക് വിരോധമുണ്ട്.
5. സ്കൂൾ സമയത്ത് എപ്പോൾ വേണമെങ്കിലും അധ്യാപകരെ സമീപിക്കാൻ എനിക്ക് സ്വാതന്ത്ര്യമുണ്ട്.
6. എന്റെ സഹപാഠികൾ എന്നെ ഒന്നൊന്നിച്ചുത്താറുണ്ട്.
7. സഹപാഠികളെ അപേക്ഷിച്ച് പാഠ്യപാഠ്യേതര വിഷയങ്ങളിൽ ഞാൻ പിന്നിലാണെന്ന ബോധം എന്നെ വിഷമിപ്പിക്കുന്നു.
8. എന്റെ വീട്ടിൽ ആവശ്യമായ വസ്തുക്കളില്ല എന്നത് കൊണ്ട് എന്നെ സഹപാഠികൾ കളിയാക്കാറുണ്ട്.
9. എന്റെ ശാരീരിക വൈകല്യങ്ങളെ സഹപാഠികൾ കളിയാക്കുന്നത് എനിക്ക് വേദനയുണ്ടാക്കുന്നു.
10. സ്കൂൾ അന്തരീക്ഷം എനിക്ക് വേദനാജനകവും വെറുപ്പുണ്ടാക്കുന്നതുമായ അനുഭവങ്ങൾ തരുന്നു.
11. എന്റെ അധ്യാപകർ എന്നെ അവഗണിക്കാറുണ്ട്.
12. ക്ലാസ്സിൽ അഭിപ്രായങ്ങൾ പറയാൻ എനിക്ക് സ്വാതന്ത്ര്യമില്ല.
13. പരീക്ഷകളിൽ ലഭിക്കുന്ന താഴ്ന്ന ഗ്രേഡുകൾ എന്റെ പിന്നീടുള്ള പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
14. സ്കൂളിൽ എന്റെ പ്രശ്നങ്ങൾ തുറന്ന് പറയാൻ ആരുമില്ല.
15. എന്റെ വീട്ടിൽ നിന്നും സ്കൂളിലേക്കുള്ള യാത്ര എനിക്ക് പ്രയാസമുണ്ടാക്കുന്നു.
16. ഞാൻ ജീവിക്കുന്ന ചുറ്റുപാടുകളിൽ നിന്ന് എനിക്ക് പല പ്രശ്നങ്ങളും ഉണ്ടാകുന്നു.
17. എന്റെ ബന്ധുക്കൾക്കുള്ള ചില രോഗങ്ങൾ മൂലം പൊതു സ്ഥലങ്ങളിലും സ്കൂളിലും മററുള്ളവർ എന്നെ ഒന്നൊന്നിച്ചുത്താറുണ്ട്.

## **APPENDIX A4**

### **SCALE OF CHILD RISK (Draft)**

#### **Instructions**

The following statements are on negative influence of your personal problems and lack of abilities in your studies. Each statement is provided with five answers in the response sheet. Read the statements carefully to decide to what extent they appear right to you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

1. My diseases and health problems impede my studies.
2. Inability to speak with clarity creates many problems to me.
3. Lack of ability to solve the academic problems affects my studies negatively.
4. Disappointment affects my personal and academic life badly.
5. Feeling of helplessness while facing problems weakens me.
6. Inability to formulate clear goals creates problems to me.
7. Lack of ability to understand the problems lead me to new problems.
8. I fear that future life will be miserable.
9. Even with companions I feel lonely.
10. Nervousness err me even on familiar things
11. I fear to interact with opposite sex.
12. Unreasonable fear affects my life negatively.
13. Lack of ability for proper planning blocks my achievements.
14. Lack of self confidence makes my life miserable.
15. I do not like to work hard.
16. Pessimism affects my studies badly.

## **APPENDIX A5**

### **SCALE OF FAMILY RISK (Draft)**

#### **Instructions**

The following statements are related on negative influence of your home atmosphere and parental attitudes in your studies. Each statement is provided with 5 answers in the response sheet. Read the statements carefully to decide to what extent they appear right to you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

1. Carelessness of my parents with me mentally pains me.
2. Quarrel between my parents pains me badly.
3. I do not feel security even at my home.
4. Diseases of my parents mentally weaken me.
5. I feel that I am not getting adequate love from my parents.
6. My parents do not arrange learning facilities for me.
7. Poverty affects my studies negatively.
8. I do not feel that my family members have emotional unity.
9. I have to complete the household chores before starting to school.
10. After the school, I can study only after completing the domestic works assigned by parents.
11. Diseases of my family members cause some mental disturbances in me.
12. I do not like my parents who impose unnecessary control on me.
13. Feeling my home atmosphere as bad affects my studies.
14. I do not have strong emotional bonding with my parents.
15. My parents show partiality among their children.
16. Bad habits of my family members affect my studies negatively.
17. Feeling that I have no good home pains me.
18. My drunkard parent creates many problems to me.
19. My divorced parents pains me.

**APPENDIX A6****SCALE OF SCHOOL RISK (Draft)****Instructions**

The following statements are on negative influence of the behaviour patterns of teachers and peers and school atmosphere in your studies. Each statement is provided with 5 answers in the response sheet. Read the statements carefully to decide to what extent they appear right to you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

1. I feel my teachers have no high expectation on me.
2. I feel that teachers do not have good expectations on me.
3. My school life is unbearable.
4. My teachers have ill feeling towards me for raising doubts to them.
5. I have the freedom to approach my teachers any time during school time.
6. My classmates isolate me.
7. Feeling weaker than classmates in both academic and non-academic matters worry me.
8. My classmates tease me for lack of luxury things at my home.
9. I feel sad as my classmates laugh at my physical disabilities.
10. School atmosphere provides me painful and bitter experiences.
11. My teachers avoid me.
12. I have no freedom to express in the classroom.
13. Low grades in the examinations negatively affect my further studies.
14. There is no one in the school to open up my problems.
15. Journey from my home to school is risky.
16. My surroundings pose many problems to me.
17. I am isolated in public places and school due to some diseases of my relatives.

**APPENDIX A7**

**SCALE OF RISK FACTORS**

**RESPONSE SHEET**

പേര് : ..... ക്ലാസ്സ് : .....

Sl. No.	പൂർണ്ണ മായും ശരി യാണ്	ശരിയാണ്	അറിഞ്ഞു കൂടാ	തെറ്റാണ്	പൂർണ്ണ മായും തെറ്റാണ്
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					

**APPENDIX A8****ITEM DISCRIMINATION VALUES OF  
SELECTED ITEMS IN SCALES OF ACADEMIC  
RISK FACTORS**

CHILD RISK		FAMILY RISK		SCHOOL RISK	
1	9.04	1	13.59	1	16.58
2	15.18	2	12.31	2	16.73
3	9.72	3	11.28	3	16.66
4	11.06	*4	0.09	4	16.38
5	15.65	5	10.88	*5	6.90
6	16.37	6	9.65	6	14.78
7	10.58	7	15.73	7	17.69
8	9.41	8	12.87	8	11.90
9	11.19	9	12.77	9	11.94
10	10.29	10	10.48	10	22.00
11	7.45	*11	6.06	11	17.24
12	12.67	*12	4.74	12	15.34
13	13.35	13	14.36	13	14.59
14	12.78	14	10.70	14	13.47
*15	8.11	15	10.36	15	12.02
16	12.06	16	13.71	16	11.41
		17	13.27	17	15.61
		18	10.05		
		19	8.85		

Note : Items with '\*' marks are deleted from the final scale after try out

**APPENDIX 9****FACTORIAL VALIDITY OF SCALE OF RISK FACTORS**

<b>Scale of child risk</b>		<b>Scale of Family risk</b>		<b>Scale of School risk</b>	
<b>Item No.</b>	<b>Factor loading*</b>	<b>Item No.</b>	<b>Factor loading*</b>	<b>Item No.</b>	<b>Factor loading*</b>
1	.488	1	.690	1	.686
2	.642	2	.477	2	.656
3	.628	3	.612	3	.705
4	.689	4	.710	4	.716
5	.633	5	.759	5	.668
6	.690	6	.667	6	.572
7	.650	7	.668	7	.729
8	.562	8	.443	8	.729
9	.532	9	.519	9	.519
10	.562	10	.606	9	.690
11	.404	11	.704	10	.692
12	.613	12	.626	11	.684
13	.656	13	.627	12	.541
14	.632	14	.637	13	.600
15	.611	15	.708	14	.461
		16	.577	15	.472
				16	.746

\*Extraction method principal component analysis; only one component extracted; N=478

## APPENDIX A10

### SCALE OF CHILD RISK (Final)

#### നിർദ്ദേശങ്ങൾ

നിങ്ങളുടെ വ്യക്തിപരമായ പ്രശ്നങ്ങളും കഴിവില്ലായ്മകളും നിങ്ങളുടെ പഠനത്തെ എത്രമാത്രം പ്രതികൂലമായി ബാധിക്കുന്നു എന്നതിനെ കുറിച്ചുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എന്റെ അസുഖങ്ങളും ശാരീരിക പ്രശ്നങ്ങളും എന്റെ പഠനത്തെ തടസ്സപ്പെടുത്തുന്നു.
2. വ്യക്തമായി സംസാരിക്കാനുള്ള കഴിവില്ലായ്മ എനിക്ക് പല പ്രശ്നങ്ങളും ഉണ്ടാക്കുന്നു.
3. പഠനപരമായ പ്രശ്നങ്ങൾ പരിഹരിക്കാനുള്ള കഴിവില്ലായ്മ എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
4. നിരാശ എന്റെ വ്യക്തി, സ്കൂൾ ജീവിതത്തെ വളരെ മോശമായി ബാധിക്കുന്നു.
5. എനിക്ക് പ്രശ്നങ്ങളുണ്ടാകുമ്പോൾ സഹായിക്കാൻ ആരുമില്ല എന്ന തോന്നൽ എന്നെ തളർത്തുന്നു.
6. വ്യക്തമായ ലക്ഷ്യങ്ങൾ രൂപീകരിക്കാനുള്ള കഴിവില്ലായ്മ എനിക്ക് പ്രശ്നങ്ങൾ ഉണ്ടാക്കുന്നു.
7. പ്രശ്നങ്ങളെ മനസ്സിലാക്കാനുള്ള കഴിവില്ലായ്മ എന്നെ പുതിയ പ്രശ്നങ്ങളിലേക്ക് നയിക്കുന്നു.
8. ഭാവി ജീവിതം ദുരിതപൂർണ്ണമാണെന്ന ചിന്ത എന്നെ ഭയപ്പെടുത്തുന്നു.
9. എല്ലാവരുടെയും ഇരിക്കുമ്പോഴും ഞാൻ ഒന്നാണെന്ന് തോന്നുന്നു.
10. പരിഭ്രമം കൊണ്ട് പല കാര്യങ്ങളും അറിഞ്ഞിട്ടും ഞാൻ തെന്തായി ചെയ്യുന്നു.
11. എതിർ ലിംഗത്തിലുള്ള ആളുകളുമായി സംസാരിക്കാനും ഇടപെടാനും എനിക്ക് പേടിയുണ്ട്.
12. അകാരണമായ ഭയം എന്റെ ജീവിതത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
13. കാര്യങ്ങൾ കൃത്യമായി ആസൂത്രണം ചെയ്യാനുള്ള കഴിവില്ലായ്മ എന്റെ നേട്ടങ്ങൾക്ക് തടസ്സമാകുന്നു.
14. സ്വന്തമായി ഒരു കാര്യവും ചെയ്യാൻ കഴിവില്ല എന്ന തോന്നൽ എന്റെ ജീവിതം പ്രതിസന്ധിയിലാക്കുന്നു.

15. അശുഭാപ്തി വിശ്വാസം എന്റെ പഠനത്തെ ദോഷകരമായി ബാധിക്കുന്നു.

**APPENDIX A11**

**SCALE OF FAMILY RISK (Final)**

**നിർദ്ദേശങ്ങൾ**

ഗൃഹാന്തരീക്ഷവും മാതാപിതാക്കളുടെ സ്വഭാവരീതികളും പഠനത്തിൽ നിങ്ങൾക്ക് എത്രമാത്രം ബുദ്ധിമുട്ടു വാക്കുന്നു എന്നതിനെപ്പറ്റിയുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് :..... ക്ലാസ്സ് :.....

1. മാതാപിതാക്കൾ എന്റെ കാര്യങ്ങൾ ശ്രദ്ധിക്കാത്തത് എന്നെ മാനസികമായി തളർത്തുന്നു.
2. മാതാപിതാക്കൾ തമ്മിലുള്ള വഴക്ക് എന്നെ വളരെയധികം വേദനിപ്പിക്കുന്നു.
3. വീടിനകത്തും എനിക്ക് സുരക്ഷിതത്വബോധം അനുഭവപ്പെടാറില്ല.
4. രക്ഷിതാക്കളിൽ നിന്ന് വേണ്ടത്ര സ്നേഹം കിട്ടുന്നില്ല എന്ന് എനിക്ക് തോന്നാറുണ്ട്.
5. മാതാപിതാക്കൾ എനിക്ക് പഠന സൗകര്യങ്ങൾ ഒരുക്കി തരാറില്ല.
6. ദാരിദ്ര്യം എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
7. എന്റെ കുടുംബാംഗങ്ങൾ തമ്മിൽ മാനസിക ഐക്യമുണ്ടെന്ന് എനിക്ക് തോന്നാറില്ല.
8. ഗാർഹിക കാര്യങ്ങളിൽ സഹായം ചെയ്ത് കൊടുത്തതിനുശേഷമേ എനിക്ക് സ്കൂളിലെത്താൻ സാധിക്കാറുള്ളൂ.
9. സ്കൂൾ വിട്ട് വീട്ടിലെത്തിയ ശേഷം രക്ഷിതാക്കൾ ഏൽപ്പിക്കുന്ന ജോലികൾ ചെയ്തതിനുശേഷം വളരെ വൈകിയെ എനിക്ക് പഠിക്കാൻ പന്റാറുള്ളൂ.
10. വളരെ മോശമായ ഒരു ഗൃഹാന്തരീക്ഷമാണ് എന്റേതെന്ന ചിന്ത എന്റെ പഠനത്തെ സാരമായി ബാധിക്കുന്നു.
11. എന്റെ മാതാപിതാക്കളുമായി ദൃഢമായ മാനസിക ബന്ധം എനിക്കില്ല.
12. മാതാപിതാക്കൾ ഞങ്ങൾ മക്കളോട് പക്ഷപാതം കാണിക്കാറുണ്ട്.
13. എന്റെ കുടുംബാംഗങ്ങളുടെ ചില ദുശ്ശീലങ്ങൾ എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
14. നല്ലൊരു വീടില്ല എന്ന ചിന്ത എന്നെ വേദനിപ്പിക്കുന്നു.
15. മദ്യപാനിയായ പിതാവ് എനിക്ക് നിരവധി പ്രശ്നങ്ങളുണ്ടാക്കുന്നു.

- 16 വിവാഹബന്ധം വേർപ്പെടുത്തിയ മാതാപിതാക്കൾ എന്റെ വലിയ വേദനയാണ്.

**APPENDIX A12**

**SCALE OF SCHOOL RISK (Final)**

**നിർദ്ദേശങ്ങൾ**

അധ്യാപകരുടെയും സഹപാഠികളുടെയും പെരുമാറ്റരീതികളും സ്കൂൾ അന്തരീക്ഷവും നിങ്ങളുടെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നുവോ എന്നതിനെക്കുറിച്ചുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. അധ്യാപകർ എന്നെ ശ്രദ്ധിക്കുന്നില്ല എന്ന ചിന്ത എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
2. അധ്യാപകർക്ക് എന്നെക്കുറിച്ച് നല്ല പ്രതീക്ഷയില്ല എന്നെനിക്ക് തോന്നാറുണ്ട്.
3. സ്കൂൾ ജീവിതം എനിക്ക് ദുഃസ്സഹമാണ്.
4. സംശയങ്ങൾ അധ്യാപകരോട് ചോദിക്കുന്നത് കൊണ്ട് എന്നോട് അധ്യാപകർക്ക് വിരോധമുണ്ട്.
5. എന്റെ സഹപാഠികൾ എന്ന ഒന്നൊന്നുണ്ടാക്കാറുണ്ട്.
6. സഹപാഠികളെ അപേക്ഷിച്ച് പാഠ്യപാഠ്യേതര വിഷയങ്ങളിൽ ഞാൻ പിന്നിലാണെന്ന ബോധം എന്നെ വിഷമിപ്പിക്കുന്നു.
7. എന്റെ വീട്ടിൽ ആശ്ചര്യകരമായ വസ്തുക്കളില്ല എന്നത് കൊണ്ട് എന്നെ സഹപാഠികൾ കളിയാക്കാറുണ്ട്.
8. എന്റെ ശാരീരിക വൈകല്യങ്ങളെ സഹപാഠികൾ കളിയാക്കുന്നത് എനിക്ക് വേദനയുണ്ടാക്കുന്നു.
9. സ്കൂൾ അന്തരീക്ഷം എനിക്ക് വേദനാജനകവും വെറുപ്പുണ്ടാക്കുന്നതുമായ അനുഭവങ്ങൾ തരുന്നു.
10. എന്റെ അധ്യാപകർ എന്നെ അവഗണിക്കാറുണ്ട്.
11. ക്ലാസ്സിൽ അഭിപ്രായങ്ങൾ പറയാൻ എനിക്ക് സ്വാതന്ത്ര്യമില്ല.
12. പരീക്ഷകളിൽ ലഭിക്കുന്ന താഴ്ന്ന ഗ്രേഡുകൾ എന്റെ പിന്നീടുള്ള പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
13. സ്കൂളിൽ എന്റെ പ്രശ്നങ്ങൾ തുറന്ന് പറയാൻ ആരുമില്ല.
14. എന്റെ വീട്ടിൽ നിന്നും സ്കൂളിലേക്കുള്ള യാത്ര എനിക്ക് പ്രയാസമുണ്ടാക്കുന്നു.
15. ഞാൻ ജീവിക്കുന്ന ചുറ്റുപാടുകളിൽ നിന്ന് എനിക്ക് പല പ്രശ്നങ്ങളും ഉണ്ടാകുന്നു.
16. എന്റെ ബന്ധുക്കൾക്കുള്ള ചില രോഗങ്ങൾ മൂലം പൊതു സ്ഥലങ്ങളിലും സ്കൂളിലും മറ്റുള്ളവർ എന്നെ ഒന്നൊന്നുണ്ടാക്കാറുണ്ട്.



**DEPARTMENT OF EDUCATION  
UNIVERSITY OF CALICUT**

**SCALE OF WITHIN-CHILD PROTECTIVE  
FACTORS**

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കുട്ടികളുടെ പഠനത്തെയും ജീവിതത്തെയും ബാധിക്കുന്ന ആറുതരം കഴിവുകളെ അളക്കുന്ന ഒരു മാനകമാണിത്. സോഷ്യൽ കോംപീനൻസ്, പ്രോബ്ളം സോൾവിംഗ് സ്കിൽ, ക്രിട്ടിക്കൽ കോൺഷ്യൂസ്നെസ്സ്, ഓട്ടോണമി, സെൻസ് ഓഫ് പർപസ്, പിയർ സപോർട്ട് എന്നിവയാണ് മേൽപറഞ്ഞ ആറു കഴിവുകൾ. ഓരോ തരത്തിലുള്ള കഴിവുകളും സ്വഭാവങ്ങളും പ്രത്യേകമായി അളക്കുന്നതിനുള്ള ഉപമാനകങ്ങൾ ഇതിൽ ഉൾപ്പെടുന്നു. ഓരോ തരത്തിലുള്ള കഴിവുകൾ അറിയുന്നതിന് ഓരോ ഉപമാനകവും പ്രത്യേകം പ്രത്യേകമായോ, ഇവ ആറും ഒന്നിച്ചോ ഉപയോഗിക്കാവുന്നതാണ്. ഓരോ തരത്തിൽപ്പെട്ട കഴിവുകൾക്കും പ്രത്യേകം മാർക്ക് നൽകേണ്ടതാണ്. 15 മുതൽ 30 മിനുട്ട് വരെ നൽകാവുന്നതാണ്.

Scale of within-child protective factors is meant to measure six types of competencies viz., Social Competence, Problem Solving Skill, Critical Consciousness, Autonomy, Sence of Purpose and Peer Support which affect the learning and life (academic life) of the students. The scale is designed to measure the six competencies separately. In order to measure the competencies, one can administer each scale separately or in combination. Care should be taken to assign separate score to each competent area. 15 to 30 minutes can be provided for classroom administration.

**APPENDIX B1**

**SCALE OF SOCIAL COMPETENCE (Draft)**

**നിർദ്ദേശങ്ങൾ**

സ്കൂളിലെയും വീട്ടിലെയും പ്രവർത്തനങ്ങളിൽ ശരിയായി ഇടപെടുകൊണ്ട് വിജയം നേടാനുള്ള നിങ്ങളുടെ കഴിവുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

- |    |   |   |   |
|----|---|---|---|
| 1  | പഠനകാര്യങ്ങളിൽ സുഹൃത്തുക്കളുടെ അറിവും മികവും ആവശ്യത്തിന് ഉപയോഗപ്പെടുത്താനുള്ള കഴിവ്                                   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2  | അധ്യാപകരുടെ അറിവുകൾ ക്ലാസ്സ് സമയത്തും അല്ലാത്തപ്പോഴും ഉപയോഗപ്പെടുത്താനുള്ള പ്രാപ്തി                                   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3  | ഓരോ കാര്യവും അതാത് സമയത്ത് ചെയ്ത തീർക്കാൻ കൂടുംബാംഗങ്ങളുടെ സഹായം തേടാനുള്ള കഴിവ്                                      | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4  | ക്ലാസ്സിൽ എനിക്കുണ്ടാകുന്ന സംശയങ്ങൾ അപ്പോൾ തന്നെ അധ്യാപകരോട് ചോദിച്ച് മനസ്സിലാക്കാനുള്ള ശേഷി.                         | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5  | പഠന വസ്തുക്കൾ (ചിത്രങ്ങൾ, പത്ര കട്ടിങ്ങുകൾ, മന്ദൂ ശേഖരണങ്ങൾ) കണ്ടെത്തുന്നതിൽ മനുള്ള വരുടെ സഹായം ലഭ്യമാക്കാനുള്ള കഴിവ് | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6  | വീടും ക്ലാസ് മുറിയും ക്രമമായും വൃത്തിയായും സൂക്ഷിക്കാനുള്ള പ്രാപ്തി   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7  | ക്ലാസ് റൂമിലും വീട്ടിലും എന്റെ പ്രവർത്തനങ്ങൾ അടുക്കും ചിട്ടയുമായി കൊണ്ട് പോകാനുള്ള ശേഷി                               | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8  | കൂടുംബാംഗങ്ങളോട് പഠന സംബന്ധമായ കാര്യങ്ങൾ തുറന്ന് പറയാനുള്ള കഴിവ്.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9  | എന്റെ പ്രത്യേക കഴിവുകൾ പഠന സംബന്ധമായ കാര്യങ്ങളിൽ പരമാവധി പ്രകടിപ്പിക്കാനുള്ള ശേഷി                                     | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 10 | സമൂഹത്തിൽ നടക്കുന്ന കാര്യങ്ങൾ വിശകലനം ചെയ്യാനുള്ള കഴിവ്.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 11 | പെട്ടെന്ന് ഒരു പ്രശ്നം നേരിടേണ്ടി വരുമ്പോൾ കൂടെയുള്ളവരുടെ സഹായത്തോടെ അത് പരിഹരിക്കാനുള്ള പ്രാപ്തി.                    | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

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- 12 അപരിചിതരോട് സംസാരിക്കാനും ഇടപഴകാനുമുള്ള ഭയം : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 13 സ്കൂൾ വേദികളിൽ എന്റെ പ്രാവീണ്യം പ്രകടിപ്പിക്കാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 14 മനുജളവരുടെ പ്രശ്നങ്ങളറിഞ്ഞാൽ എന്നാൽ കഴിയും വിധം പരിഹാര മാർഗ്ഗങ്ങൾ നിർദ്ദേശിക്കാനുള്ള പ്രാപ്തി. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 15 മനുജളവരുടെ വിജയങ്ങളിൽ അവരെ അഭിനന്ദിക്കാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 16 മനുജളവരുടെ പ്രശ്നങ്ങളെ അവഗണിക്കാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 17 ക്ലാസ്റും ചർച്ചകൾ, സെമിനാറുകൾ, പ്രൊജക്ട് വർക്കുകൾ എന്നിവയിൽ വേണ്ടത്ര പങ്കെടുക്കാനുള്ള ശേഷി. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 18 നിത്യവും പത്രം വായിക്കുന്ന ശീലം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 19 മനസിലുള്ള കാര്യങ്ങൾ വ്യക്തമായി മനുജളവരോട് പറയാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 20 സെമിനാറുകൾ അവതരിപ്പിക്കുമ്പോൾ ഭാഷ ഉചിതമായി ഉപയോഗിക്കാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 21 വ്യക്തമായി സംസാരിക്കാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല

**APPENDIX B2**

**SCALE OF PROBLEM SOLVING SKILL (Draft)**

**നിർദ്ദേശങ്ങൾ**

പാഠ്യപാഠ്യേതരപ്രവർത്തനങ്ങളുമായി ബന്ധപ്പെട്ട് നേരിടേണ്ടിവരുന്ന പ്രശ്നങ്ങളെ വ്യക്തമായി മനസ്സിലാക്കി അവ പരിഹരിക്കാനുള്ള നിങ്ങളുടെ കഴിവുകളെക്കുറിച്ചുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

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| 1 | പഠനപരമായി എനിക്കുണ്ടാവുന്ന പ്രശ്നങ്ങളെക്കുറിച്ച് ചിന്തിക്കാനുള്ള ശേഷി.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2 | ക്ലാസ്റുമിൽ വെച്ച് പാഠ്യവും പാഠ്യേതരവുമായ പ്രശ്നങ്ങൾ നേരിടേണ്ടി വരുമ്പോൾ അത് വ്യക്തമായി മനസ്സിലാക്കാനുള്ള കഴിവ്. | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3 | ഓരോ പാഠ്യവിഷയവും പഠിക്കാൻ എനിക്കുള്ള ഏതും പ്രധാനപ്പെട്ട പ്രശ്നമെന്താണെന്ന് മനസ്സിലാക്കാനുള്ള പ്രാപ്തി.           | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4 | പരീക്ഷകളിൽ മാർക്ക് കുറയുമ്പോൾ എന്തുകൊണ്ടാണ് അങ്ങനെ സംഭവിച്ചതെന്ന് ചിന്തിക്കാനുള്ള ശേഷി.                          | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5 | പ്രശ്നപരിഹാരത്തിനായി ചിട്ടയായ ഒരു പ്ലാൻ തയ്യാറാക്കാനുള്ള പ്രാപ്തി.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6 | പഠനപരമായി മുൻകൂട്ടി തീരുമാനിക്കുന്ന കാര്യങ്ങൾ പ്രാവർത്തികമാക്കാനുള്ള കഴിവ്.                                      | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7 | പഠനപരമായ വലിയ പ്രശ്നങ്ങൾ പരിഹരിക്കാൻ യാഥാർത്ഥ്യ ബോധത്തോടെയുള്ള ഒരു രൂപരേഖ മനസ്സിൽ കാണാനുള്ള ശേഷി.                | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8 | പഠനപരമായി എനിക്കുണ്ടാവുന്ന ബുദ്ധിമുട്ടുകൾ ഒഴിവാക്കാൻ അതാത് സമയത്ത് അധ്യാപകരുടെ സഹായം തേടാനുള്ള കഴിവ്.            | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9 | പഠനപരമായ സംശയങ്ങൾ ദുരീകരിക്കാൻ വിവിധ മാധ്യമങ്ങൾ ഉപയോഗിക്കാനുള്ള ശേഷി.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

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| <p>10 പഠനപരമായി എനിക്കുണ്ടാകുന്ന പ്രശ്നങ്ങൾ പരിഹരിക്കാൻ കുടുംബാംഗങ്ങളുടെ സഹായം ഉപയോഗപ്പെടുത്താനുള്ള കഴിവ്.</p>                              | <p>:</p> | <p>വാസ്/തീരെ കുറവാണ്/ഇല്ല<br/>നന്നായി ഉണ്ട്/ഏറെ കുറവുണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>11 പ്രശ്നപരിഹാരത്തിനായി പല വഴികളെപ്പറ്റി ചിന്തിക്കാനുള്ള ശേഷി.</p>   | <p>:</p> | <p>നന്നായി ഉണ്ട്/ഏറെ കുറവുണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p>                            |
| <p>12 സമൂഹത്തിലെ നന്മ തിന്മകളെപ്പറ്റി ചിന്തിക്കാനുള്ള ശേഷി.</p>   | <p>:</p> | <p>നന്നായി ഉണ്ട്/ഏറെ കുറവുണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p>                            |
| <p>13 പ്രശ്ന പരിഹാരത്തിനായി പുതുതായ വഴികൾ സ്വീകരിക്കാനുള്ള പ്രാപ്തി.</p>  | <p>:</p> | <p>നന്നായി ഉണ്ട്/ഏറെ കുറവുണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p>                            |
| <p>14 സ്കൂളിൽ നേരിടുന്ന പ്രശ്നങ്ങളെ വിമർശനാത്മകമായി സമീപിക്കാനുള്ള കഴിവ്.</p>   | <p>:</p> | <p>നന്നായി ഉണ്ട്/ഏറെ കുറവുണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p>                            |
| <p>15 സർഗാത്മകമായ എന്റെ കഴിവുകളെ പഠനത്തിൽ ഉപയോഗപ്പെടുത്താനുള്ള ശേഷി</p>   | <p>:</p> | <p>നന്നായി ഉണ്ട്/ഏറെ കുറവുണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p>                            |
| <p>16 തീരുമാനങ്ങൾ എടുക്കേണ്ട സന്ദർഭങ്ങളിൽ അവയെ വ്യക്തമായും കണിശമായും വിശകലനം ചെയ്യാതെ അപ്പോൾ തോന്നുന്ന ഒരു തീരുമാനം കൈക്കൊള്ളുന്ന ശീലം.</p> | <p>:</p> | <p>നന്നായി ഉണ്ട്/ഏറെ കുറവുണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p>                            |
| <p>17 പഠനത്തിന്റെ ഭാഗമായി സർഗാത്മകമായ കഴിവുകൾ വളർത്തിയെടുക്കാനുള്ള ശേഷി.</p>  | <p>:</p> | <p>നന്നായി ഉണ്ട്/ഏറെ കുറവുണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p>                            |

**APPENDIX B3**

**SCALE OF CRITICAL CONSCIOUSNESS (Draft)**

**നിർദ്ദേശങ്ങൾ**

സ്കൂളിലും പൊതുസ്ഥലങ്ങളിലും വെച്ച് സംഭവിക്കാനിടയുള്ള പ്രശ്നങ്ങളെ മുൻകൂട്ടി മനസ്സിലാക്കാനുള്ള നിങ്ങളുടെ ധാരണയുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

- 1 പഠനപരമായി ഞാൻ നേരിടുന്ന പ്രശ്നങ്ങളെ കുറിച്ച് : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 2 സ്കൂളിൽ വെച്ച് ഏതെല്ലാം തരത്തിലുള്ള പ്രയാസങ്ങൾ സംഭവിക്കാമെന്നതിനെക്കുറിച്ചുള്ള അവബോധം. : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 3 സ്കൂളിലേക്കുള്ള യാത്രക്കിടയിൽ മനുജളവരിൽ നിന്നും ഉണ്ടാകാനിടയുള്ള ശല്യങ്ങളെപ്പറ്റിയുള്ള ബോധം. : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 4 സ്കൂളിലും പൊതുസ്ഥലങ്ങളിലും ഒളിഞ്ഞിരിക്കുന്ന അപകടങ്ങളെപ്പറ്റിയുള്ള ധാരണ. : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 5 എന്റെ കഴിവുകളെയും കഴിവില്ലായ്മകളെയും കുറിച്ചുള്ള അറിവ്. : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 6 ചുരുപാടുകളിൽ നിന്ന് വരാനിടയുള്ള രോഗങ്ങളെക്കുറിച്ചുള്ള ധാരണ. : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 7 ഞാൻ പാലിക്കേണ്ട ആരോഗ്യ ശീലങ്ങളെപ്പറ്റിയുള്ള അവബോധം. : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 8 കളികൾക്കിടയിൽ അപകടങ്ങൾ സംഭവിക്കാതിരിക്കാനുള്ള മുൻകരുതലുകൾ എടുക്കേണ്ടതിനെപ്പറ്റിയുള്ള ബോധം. : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 9 അപരിചിതരായ ആളുകളോട് എങ്ങനെ ഇടപെടണമെന്നതിനെക്കുറിച്ചുള്ള ധാരണ. : നന്നായി ഉണ്ട്/ഏറെ കുറവ് ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 10 എന്റെ ബന്ധുക്കളും അയൽക്കാരും എന്നിൽ അമിത : നന്നായി ഉണ്ട്/ഏറെ

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- സ്വാതന്ത്ര്യം എടുത്താലുണ്ടാവുന്ന ഫലത്തെപ്പറ്റിയുള്ള ബോധം. : കൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 11 അപരിചിതരോട് സംസാരിക്കുമ്പോൾ വ്യക്തിപരമായ കാര്യങ്ങൾ തുറന്നു പറഞ്ഞാലുണ്ടാവുന്ന കാര്യങ്ങളെ പറ്റിയുള്ള അറിവ്. : നന്നായി ഉണ്ട്/ഏറെ കൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 12 എന്റെ രക്ഷിതാക്കളെ അറിയാമെന്ന് പറഞ്ഞ് വരുന്ന അപരിചിതരെ പൂർണ്ണമായി വിശ്വസിച്ചാൽ അതെന്നെ എങ്ങനെ ബാധിക്കുമെന്നതിനെ കുറിച്ചുള്ള അവബോധം. : നന്നായി ഉണ്ട്/ഏറെ കൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല

**APPENDIX B4**

**SCALE OF AUTONOMY (Draft)**

**നിർദ്ദേശങ്ങൾ**

പഠനപ്രവർത്തനങ്ങൾ സ്വയം ചെയ്തുതീർക്കാനുള്ള നിങ്ങളുടെ വിശ്വാസവുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വമായി വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

- 1 പഠനവുമായി ബന്ധപ്പെട്ട സെമിനാറുകൾ, അസൈൻമെന്റുകൾ എന്നിവ മനുജളവരുടെ സഹായമില്ലാതെ ചെയ്യാമെന്ന തോന്നൽ. : നന്നായി ഉണ്ട്/ഏറെകൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 2 പഠന പ്രവർത്തനങ്ങളിൽ ശരിയായി ഇടപെട്ടു കൊണ്ട് പാഠ്യവസ്തു വ്യക്തമായി മനസ്സിലാക്കണമെന്ന വിചാരം. : നന്നായി ഉണ്ട്/ഏറെകൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 3 ക്ലാസിൽ നിന്ന് പഠിച്ച കാര്യങ്ങളെക്കുറിച്ച് പരീക്ഷണങ്ങൾ ചെയ്യാമെന്ന വിശ്വാസം. : നന്നായി ഉണ്ട്/ഏറെകൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 4 പഠന പ്രവർത്തനങ്ങളുടെ പ്രാധാന്യം മനസ്സിലാക്കി എന്റെ ബുദ്ധിപരമായ കഴിവുകൾ പരമാവധി ഉപയോഗിക്കണമെന്ന തോന്നൽ. : നന്നായി ഉണ്ട്/ഏറെകൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 5 നിത്യേന ക്ലാസിൽ പഠിപ്പിക്കുന്ന കാര്യങ്ങൾ സ്വപ്രയത്നത്തോടെ സ്വായത്തമാക്കണമെന്ന വിചാരം. : നന്നായി ഉണ്ട്/ഏറെകൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 6 ദുശ്ശീലങ്ങളിൽ നിന്നും ബോധപൂർവ്വം ഒഴിഞ്ഞു നിൽക്കണമെന്ന തോന്നൽ. : നന്നായി ഉണ്ട്/ഏറെകൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 7 മനുജളവരുടെ മോശമായ പ്രവർത്തനങ്ങൾ എന്നെ വല്ലാതെ ബാധിക്കുമെന്ന വിചാരം. : നന്നായി ഉണ്ട്/ഏറെകൂറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 8 പഠന ലക്ഷ്യങ്ങൾ സ്വയം തീരുമാനിക്കാൻ കഴിയും : നന്നായി ഉണ്ട്/ഏറെകൂറെ

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|   | <p>ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p>                         |
| <p>9 പ്രയാസമേറിയ പാഠഭാഗങ്ങൾ പഠിക്കാതെ ഒഴിവാക്കണമെന്ന തോന്നൽ.</p>  | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>10 കൂട്ടുകാരുമൊത്ത് കളിക്കുമ്പോൾ ഉണ്ടാകുന്ന തർക്കങ്ങൾ പരിഹരിക്കാനുള്ള എന്റെ ശ്രമം വിജയിക്കുമെന്ന വിചാരം.</p>                     | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>11 കഠിന പ്രയത്നം നമ്മെ വിജയത്തിലേക്ക് നയിക്കുമെന്ന വിശ്വാസം.</p>   | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>12 ക്ലാസിൽ നിന്നും പഠിച്ച കാര്യങ്ങളെക്കുറിച്ച് കൂടുതൽ വിവരങ്ങൾ ശേഖരിക്കണമെന്ന തോന്നൽ.</p>  | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>13 സങ്കീർണ്ണമായ പാഠഭാഗങ്ങൾ പഠിക്കാൻ ശ്രമിക്കണമെന്ന വിചാരം.</p>   | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>14 എത്ര തന്നെ ശ്രമിച്ചാലും ഭാഗ്യമില്ലെങ്കിൽ ഒന്നും നേടാൻ കഴിയില്ല എന്ന തോന്നൽ.</p>   | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>15 പാഠഭാഗങ്ങൾ വ്യക്തമായി പഠിച്ചിട്ടുണ്ടെങ്കിലും പരീക്ഷ നന്നായി എഴുതാൻ കഴിയണമെന്നില്ല എന്ന തോന്നൽ.</p>                            | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>16 പഠന പ്രവർത്തനങ്ങളിൽ നന്നായി പങ്കെടുക്കാൻ ആഗ്രഹിക്കുമ്പോൾ അനുകൂല സാഹചര്യങ്ങൾ ഉണ്ടാവണമെന്നില്ല എന്ന വിചാരം.</p>                 | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>17 സെമിനാറുകൾ നന്നായി തയ്യാറാക്കി വന്നാലും എന്തേതല്ലാത്ത കാരണങ്ങൾ കൊണ്ട് നല്ല രീതിയിൽ അവതരിപ്പിക്കാൻ സാധിക്കില്ലെന്ന വിചാരം.</p> | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>18 എന്റെ ചുരുപാടുകളിൽ ആവശ്യാനുസരണം മാറ്റം വരുത്താൻ കഴിയുമെന്ന തോന്നൽ.</p>  | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>19 അധ്യാപകരും കുടുംബാംഗങ്ങളും ഏൽപ്പിക്കുന്ന കടമകൾ സ്വയം ചെയ്യാനുള്ള പ്രാപ്തിയുണ്ടെന്ന വിശ്വാസം.</p>                              | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |
| <p>20 ഇഷ്ടമുള്ള പല കാര്യങ്ങളും ചെയ്യാൻ കഴിവില്ല എന്ന തോന്നൽ.</p>  | <p>നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല</p> |

**APPENDIX B5**

**SCALE OF SENSE OF PURPOSE (Draft)**

**നിർദ്ദേശങ്ങൾ**

വിദ്യാഭ്യാസവുമായി ബന്ധപ്പെട്ട ലക്ഷ്യങ്ങൾ രൂപീകരിക്കാനും അവ നേടിയെടുക്കുവാനും മുളള നിങ്ങളുടെ അഭിലാഷവുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

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| 1  | എന്റെ സ്കൂൾ ജീവിതവുമായി ബന്ധപ്പെട്ട് കൃത്യമായ ലക്ഷ്യങ്ങൾ രൂപീകരിക്കണമെന്ന ബോധം.                                   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2  | എന്റെ പഠന പ്രവർത്തനങ്ങൾ ത്വരിതപ്പെടുത്താനും പൂർണ്ണതയിലെത്തിക്കാനുമുള്ള ലക്ഷ്യങ്ങൾ തയ്യാറാക്കാനുള്ള അറിവ്.         | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3  | പാഠ്യവിഷയം ഏതായാലും അധ്യാപകർ ക്ലാസെടുക്കുമ്പോൾ ഞാൻ നേടേണ്ട ലക്ഷ്യങ്ങൾ മനസിൽ കാണാനുള്ള ബോധം.                       | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4  | പരീക്ഷകളിൽ നല്ല ഗ്രേഡുകൾ നേടണമെന്ന ഉദ്ദേശ്യം.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5  | സഹപാഠികളേക്കാൾ മികച്ച പ്രകടനം കാഴ്ചവെക്കണമെന്ന അഭിലാഷം  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6  | പാഠ്യപാഠ്യേതര വിഷയങ്ങളിലുള്ള എന്റെ കഴിവുകളെ മൂൻ നിർത്തി അധ്യാപകർ ഇഷ്ടപ്പെടുന്ന ഒരു വിദ്യാർത്ഥിയാവാാനുള്ള മനോഭാവം. | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7  | വിദ്യാഭ്യാസപരമായി ഉയർന്ന സ്ഥാനത്തെത്താനുള്ള അതിയായ മോഹം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8  | പഠിച്ച് നല്ലൊരു ജോലിയിലെത്താനുള്ള അഭിലാഷം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9  | വിദ്യാഭ്യാസത്തിലൂടെ സമൂഹത്തിലെ മാന്യമായ ഒരു പദവിയിലെത്താനുള്ള അതിയായ ആഗ്രഹം.                                      | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 10 | പഠനവുമായി ബന്ധപ്പെട്ട് രൂപീകരിക്കുന്ന ലക്ഷ്യങ്ങൾ സ്വായത്തമാക്കാൻ പരിശ്രമിക്കുന്ന സ്വഭാവം                          | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 11 | വിദ്യാഭ്യാസപരമായി മുന്നേറാനുള്ള സ്വയം പ്രേരണ  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

- 12 വിദ്യാഭ്യാസത്തിലൂടെ ഉയർന്ന മൂല്യങ്ങൾ സ്വായത്തമാക്കാൻ പരിശ്രമിക്കുന്ന സ്വഭാവം : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 13 അധ്യാപകർ നൽകുന്ന പാഠാനുബന്ധ പ്രവർത്തനങ്ങൾ മികവുന്താക്കാൻ പരിശ്രമിക്കണമെന്ന ബോധം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 14 പാഠ്യവസ്തുക്കൾ ആദ്യവായനയിൽ മനസിലായില്ലെങ്കിൽ അത് മനസിലാക്കാൻ കൂടുതൽ സമയം ചെലവഴിക്കാനുള്ള മനോഭാവം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 15 എനിക്ക് ബുദ്ധിമുട്ടുള്ള പാഠഭാഗങ്ങൾ സ്ഥിര പ്രയത്നത്തിലൂടെ മനസിലാക്കാനുള്ള വിവേകം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 16 വിദ്യാഭ്യാസം എന്റെ ജീവിത നിലവാരം ഉയർത്തുമെന്ന പ്രതീക്ഷ. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 17 ഓരോ ദിവസവും സ്കൂളിൽ നിന്ന് പുതിയ കാര്യങ്ങൾ പഠിക്കാമെന്ന പ്രതീക്ഷ. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 18 ഓരോ പഠന പ്രവർത്തനവും എന്റെ അറിവ് വർദ്ധിപ്പിക്കും എന്ന ശുഭാപ്തി വിശ്വാസം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 19 ബുദ്ധിമുട്ടുള്ള പാഠഭാഗങ്ങൾ എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുമെന്ന മനോഭാവം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 20 എന്റെ വിദ്യാഭ്യാസത്തിലൂടെ എന്റെയും കുടുംബാംഗങ്ങളുടെയും ജീവിത നിലവാരം ഉയരുമെന്ന ശുഭപ്രതീക്ഷ. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 21 പരീക്ഷകൾക്ക് പോകുമ്പോൾ പ്രാർത്ഥിക്കുന്ന ശീലം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 22 പഠിച്ച് നല്ല നിലയിലെത്താമെന്ന എന്റെ പ്രതീക്ഷക്ക് പ്രാർത്ഥന ഉറപ്പു കൂട്ടുമെന്ന മനോഭാവം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല

**APPENDIX B6**

**SCALE OF PEER SUPPORT (Draft)**

**നിർദ്ദേശങ്ങൾ**

സഹപാഠികളുമായും വിദ്യാഭ്യാസപ്രവർത്തനങ്ങളുമായും സഹകരിച്ച് ഒരു നല്ല വിദ്യാർത്ഥിയാവാവാനുള്ള നിങ്ങളുടെ താല്പര്യവുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

- |    |   |   |   |
|----|---|---|---|
| 1  | എന്റെ സഹപാഠികളെ ഏത് സമയത്തും സഹായിക്കാനുള്ള മനോഭാവം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2  | ക്ലാസ് നേരിടുന്ന പ്രശ്നം പരിഹരിക്കുന്നതിന് എന്തേതായ സംഭാവന നൽകാനുള്ള താല്പര്യം.               | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3  | സഹപാഠികളുമായി സഹകരിച്ച് പോകാനുള്ള സന്നദ്ധത.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4  | നിസാരകാര്യങ്ങൾക്ക് സഹപാഠികളുമായി വഴക്കിടുകയും കൂടെ പറയുകയും ചെയ്യുന്ന ശീലം.                   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5  | സഹപാഠികൾക്കുണ്ടാകുന്ന പ്രതികൂല ജീവിത സാഹചര്യങ്ങളെ തരണം ചെയ്യാൻ സഹായിക്കണമെന്ന മനോഭാവം.        | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6  | സഹപാഠികളുടെ പ്രശ്നങ്ങൾ എന്തേതെന്ന പോലെ കാണാനും പരിഹരിക്കാനും ആത്മാർത്ഥമായി ശ്രമിക്കുന്ന ശീലം. | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7  | വിദ്യാഭ്യാസപരമായ പ്രവർത്തനങ്ങളിൽ പങ്കെടുക്കാനുള്ള താല്പര്യം.                                  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8  | ശുചിത്വ കാര്യങ്ങളിലുള്ള ശ്രദ്ധ.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9  | കൃത്യനിഷ്ഠ പാലിക്കുന്ന ശീലം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 10 | സഹപാഠികളുടെ ഗുണങ്ങളെ ബഹുമാനിക്കാനുള്ള മനോഭാവം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

- 11 വിദ്യാഭ്യാസ കാര്യങ്ങളിൽ ആത്മാർത്ഥമായി പങ്കെടുക്കുന്ന ശീലം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 12 സമൂഹ നന്മക്കായി പല കാര്യങ്ങളും ചെയ്യണമെന്ന ആഗ്രഹം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 13 ഒരു പൗരനെന്ന നിലയിൽ എന്റെ അവകാശങ്ങളെ കുറിച്ചുള്ള അവബോധം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 14 സ്കൂളിന്റെ നന്മക്കായി നടത്തുന്ന പരിപാടികളിൽ പങ്കെടുക്കാനുള്ള സന്നദ്ധത. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 15 എനിക്ക് പ്രാവീണ്യമുള്ള വിഷയങ്ങൾ മനുജ്ജവർക്ക് പഠിപ്പിച്ചു കൊടുക്കാനുള്ള താല്പര്യം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 16 ഗ്രൂപ്പുകളായിരുന്ന് പഠിക്കാനുള്ള താല്പര്യം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 17 പഠന പ്രവർത്തനങ്ങളിൽ സഹപാഠികളോട് പരമാവധി സഹകരിക്കുന്ന ശീലം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 18 കലാകായിക മത്സരങ്ങളിൽ പങ്കെടുക്കാനുള്ള താല്പര്യം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 19 പാഠ്യപാഠ്യേതര വിഷയങ്ങളിൽ നല്ല നിലവാരം പുലർത്താനുള്ള പരിശ്രമം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 20 ചിത്രം വരക്കാനും കഥയും കവിതയും എഴുതാനുമുള്ള താല്പര്യം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല

**APPENDIX B7**  
**SCALE OF SOCIAL COMPETENCE (Draft)**

**Instructions**

The following statements are on your competence to achieve success by adequately involving in the activities in school and home. Read all the statements carefully and put tick (✓) mark on the most suitable answer for you, by choosing from those provided along with the statements.

Name: ..... Class: .....

- |    |  |   |  |
|----|--|---|--|
| 1  | The ability to utilize the knowledge and competencies of friends in my learning processes.                     | : | Have very much/more or less/ have less/have very less/ do not have |
| 2  | The capacity to utilize the expertise of teachers in and out of the class time.                                | : | Have very much/more or less/ have less/have very less/ do not have |
| 3  | The ability to seek the help of family members to complete my works timely.                                    | : | Have very much/more or less/ have less/have very less/ do not have |
| 4  | The ability to clear my doubts on the spot in the class.   | : | Have very much/more or less/ have less/have very less/ do not have |
| 5  | The ability to utilize help of others to find out learning aids like pictures, news paper cuttings and others. | : | Have very much/more or less/ have less/have very less/ do not have |
| 6  | The capacity to keep the home and classroom ordered and neat.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 7  | The capability to systematically carry out my works in classroom and home.                                     | : | Have very much/more or less/ have less/have very less/ do not have |
| 8  | The ability to freely open up the academic matters to family members.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 9  | Skill to maximally manifest my special abilities in academics.   | : | Have very much/more or less/ have less/have very less/ do not have |
| 10 | The ability to analyze the social issues.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 11 | The competency to solve the unexpected problems with the help of others.                                       | : | Have very much/more or less/ have less/have very less/ do not have |
| 12 | The fear to talk and interact with strangers.  | : | Have very much/more or   |

- |    |  |  |
|----|--|--|
|    |  | less/ have less/have very<br>less/ do not have                             |
| 13 | The capacity to manifest my talents on school stage.                                       | : Have very much/more or<br>less/ have less/have very<br>less/ do not have |
| 14 | The ability to suggest the remedial measures to others when they open up their problems.   | : Have very much/more or<br>less/ have less/have very<br>less/ do not have |
| 15 | The ability to appreciate others on their achievements.                                    | : Have very much/more or<br>less/ have less/have very<br>less/ do not have |
| 16 | The ability to neglect the problems of others if need be.                                  | : Have very much/more or<br>less/ have less/have very<br>less/ do not have |
| 17 | The ability to properly participate in classroom discussions, seminars, and project works. | : Have very much/more or<br>less/ have less/have very<br>less/ do not have |
| 18 | The habit of reading the news papers daily.  | : Have very much/more or<br>less/ have less/have very<br>less/ do not have |
| 19 | Ability to speak out clearly to others about the things in my mind.                        | : Have very much/more or<br>less/have less/have very less/<br>do not have  |
| 20 | The ability to use language appropriately while presenting the seminars.                   | : Have very much/more or<br>less/ have less/have very<br>less/ do not have |
| 21 | The ability to speak clearly.  | : Have very much/more or<br>less/ have less/have very<br>less/ do not have |

## **APPENDIX B8**

### **SCALE OF PROBLEM SOLVING SKILL (Draft)**

#### **Instructions**

The following statements are related with your skill in comprehending and solving the problems both in the academic and non-academic matters. Read all the statements carefully and put tick (✓) mark on the most suitable answer for you, by choosing from those provided along with the statements.

Name : .....Class : .....

- 1 The competency to think about my academic problems. : Have very much/more or less/ have less/have very less/ do not have
- 2 The ability to clearly understand both the academic and non-academic problems confronted in the class. : Have very much/more or less/ have less/have very less/ do not have
- 3 The ability to understand my most important problem in learning each subject. : Have very much/more or less/ have less/have very less/ do not have
- 4 The ability to analyze the reason for securing low scores in exams. : Have very much/more or less/ have less/have very less/ do not have
- 5 The competency to prepare a systematic plan to solve a problem. : Have very much/more or less/ have less/have very less/ do not have
- 6 The ability to implement academic plants. : Have very much/more or less/ have less/have very less/ do not have
- 7 The ability to formulate a realistic mental sketch to solve major academic problems. : Have very much/more or less/ have less/have very less/ do not have
- 8 The ability to seek timely help from teachers to avoid my academic difficulties. : Have very much/more or less/ have less/have very less/ do not have
- 9 The competency to utilize media to clarify academic doubts. : Have very much/more or less/ have less/have very less/ do not have
- 10 The ability to utilize the familial help to solve my academic problems. : Have very much/more or less/ have less/have very less/ do not have

- |    |   |   |  |
|----|---|---|--|
| 11 | The competency to think multiple ways for problem solution.           | : | Have very much/more or less/ have less/have very less/ do not have |
| 12 | The competency to think about societal virtues and vices.             | : | Have very much/more or less/ have less/have very less/ do not have |
| 13 | The capacity to make use of novel ways to solve the problems.         | : | Have very much/more or less/ have less/have very less/ do not have |
| 14 | The ability to critically approach the problems at school.            | : | Have very much/more or less/ have less/have very less/ do not have |
| 15 | The competency to utilize my creative abilities in studies.           | : | Have very much/more or less/ have less/have very less/ do not have |
| 16 | Habit of unscrupulous decision making.                                | : | Have very much/more or less/ have less/have very less/ do not have |
| 17 | The competency to nurture creative competencies related to academics. | : | Have very much/more or less/ have less/have very less/ do not have |

## **APPENDIX B9**

### **SCALE OF CRITICAL CONSCIOUSNESS (Draft)**

#### **Instructions**

The given statements are related with your awareness of the problems in school and other public places. Read all the statements carefully and put tick (✓) mark on the most suitable answer for you, by choosing from those provided along with the statements.

Name : ..... Class : .....

- |    |   |   |  |
|----|---|---|--|
| 1  | Awareness about my academic problems.   | : | Have very much/more or less/ have less/have very less/ do not have |
| 2  | Awareness about possible problems that may happen in school.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 3  | Consciousness about the possible annoyance from others on the way to school.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 4  | Awareness about the hidden dangers in school and public places.   | : | Have very much/more or less/ have less/have very less/ do not have |
| 5  | Awareness about my potentialities and weaknesses.   | : | Have very much/more or less/ have less/have very less/ do not have |
| 6  | Awareness of the communicable diseases at my surroundings.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 7  | Sense about the health habits and routine.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 8  | Consciousness about the precautions to be taken during the games.   | : | Have very much/more or less/ have less/have very less/ do not have |
| 9  | Awareness about how to interact with strangers.   | : | Have very much/more or less/ have less/have very less/ do not have |
| 10 | Consciousness about the impact of over freedom taken by relatives and neighbours with me.                                     | : | Have very much/more or less/ have less/have very less/ do not have |
| 11 | I sense the impact of revealing personal information to strangers.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 12 | Awareness about the impact of blindly believing strangers who are trying to convince me that they are familiar to my parents. | : | Have very much/more or less/ have less/have very less/ do not have |

## APPENDIX B10

### SCALE OF AUTONOMY (Draft)

#### Instructions

The following statements are on your self belief to carry out the academic activities independently. Read all the statements carefully and put tick (✓) mark on the most suitable answer for you, by choosing from those provided along with the statements.

Name : ..... Class : .....

- |    |   |   |  |
|----|---|---|--|
| 1  | Feeling of independence in doing seminars, assignments related with studies.                          | : | Have very much/more or less/ have less/have very less/ do not have |
| 2  | Confidence to clearly understand the content by rightly involving in the learning activities.         | : | Have very much/more or less/ have less/have very less/ do not have |
| 3  | Belief in experimenting on the concepts studied from the class.                                       | : | Have very much/more or less/ have less/have very less/ do not have |
| 4  | Feeling to maximally invest my intellectual abilities in learning activities based on its importance. | : | Have very much/more or less/ have less/have very less/ do not have |
| 5  | Confidence to comprehend every day classroom content with myself.                                     | : | Have very much/more or less/ have less/have very less/ do not have |
| 6  | Feeling to keep away from bad habits.   | : | Have very much/more or less/ have less/have very less/ do not have |
| 7  | Feeling that the others' actions will affect me badly.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 8  | Confidence in formulating learning objectives oneself.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 9  | Tendency to skip the difficult contents.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 10 | Confidence in my ability to resolve issues among the friends while playing.                           | : | Have very much/more or less/ have less/have very less/ do not have |
| 11 | Belief that hard work will lead to success.   | : | Have very much/more or less/ have less/have very less/ do not have |

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- |    |   |   |  |
|----|---|---|--|
| 12 | Tendency to collect more information about the content learned from the class.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 13 | Self-belief to learn the difficult contents.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 14 | Feeling that nothing can be achieved without luck.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 15 | Lack of confidence to perform in the examination in spite of comprehending the topics.                                | : | Have very much/more or less/ have less/have very less/ do not have |
| 16 | Feeling that the circumstances will not be conducive while longing to participate effectively in learning activities. | : | Have very much/more or less/ have less/have very less/ do not have |
| 17 | Lack of confidence to present seminars irrespective preparation.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 18 | Self-belief to cause changes in my surroundings.  | : | Have very much/more or less/ have less/have very less/ do not have |
| 19 | Belief that I can carry out the responsibilities assigned by teachers and family members independently.               | : | Have very much/more or less/ have less/have very less/ do not have |
| 20 | Lack of confidence to do most of the things that I like.  | : | Have very much/more or less/ have less/have very less/ do not have |

**APPENDIX B11****SCALE OF SENSE OF PURPOSE (Draft)****Instructions**

The following statements are related with your aspiration to formulate and accomplish the goals related with education. Read all the statements carefully and put tick (✓) mark on the most suitable answer for you, by choosing from those provided along with the statements.

Name : ..... Class : .....

1. Sense to formulate clear objectives related with my school life. : Have very much/more or less/ have less/have very less/ do not have
2. Ability to formulate objectives to speed up and complete my learning activities. : Have very much/more or less/ have less/have very less/ do not have
3. Alertness to visualize the achievable goals related with any subjects while the class. : Have very much/more or less/ have less/have very less/ do not have
4. Intention to achieve better grades in the examinations. : Have very much/more or less/ have less/have very less/ do not have
5. Ambition to manifest better performance than that of peers. : Have very much/more or less/ have less/have very less/ do not have
6. Purpose of being good student for my teachers by my abilities in academic and non-academic attainments. : Have very much/more or less/ have less/have very less/ do not have
7. Ambition to reach higher positions through education. : Have very much/more or less/ have less/have very less/ do not have
8. Ambition to secure a good job through my studies. : Have very much/more or less/ have less/have very less/ do not have
9. Strong desire to accomplish a dignified position in society through education : Have very much/more or less/ have less/have very less/ do not have
10. Habit of working hard to achieve the goals formulated in relation with studies. : Have very much/more or less/ have less/have very less/ do not have

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11. Self-prompt to go ahead educationally. : Have very much/more or less/ have less/have very less/ do not have
12. Motive to achieve educationally : Have very much/more or less/ have less/have very less/ do not have
13. Conscious effort to make the follow up activities assigned by teachers fruitful. : Have very much/more or less/ have less/have very less/ do not have
14. Purposefully spending more time on the content which is not assimilated in the first reading. : Have very much/more or less/ have less/have very less/ do not have
15. Constant effort to assimilate the difficult contents. : Have very much/more or less/ have less/have very less/ do not have
16. Expectation that education will develop my standard of living. : Have very much/more or less/ have less/have very less/ do not have
17. Expectation that everyday in school brings novel experiences. : Have very much/more or less/ have less/have very less/ do not have
18. Optimistic feeling that every learning activity will enhance my knowledge. : Have very much/more or less/ have less/have very less/ do not have
19. Feel that content difficulty will affect my studies negatively. : Have very much/more or less/ have less/have very less/ do not have
20. Optimism that standard of living of mine and my family members will go high through my education. : Have very much/more or less/ have less/have very less/ do not have
21. Habit of praying while examinations. : Have very much/more or less/ have less/have very less/ do not have
22. Expectation that my prayers will strengthen my ambition to secure a better position through studies. : Have very much/more or less/ have less/have very less/ do not have

**APPENDIX B12****SCALE OF PEER SUPPORT (Draft)****Instructions**

The following statements are related with your attitude to become a good student by effectively cooperating with your peers and involving and positively in academic activities. Read all the statements carefully and put tick (✓) mark on the most suitable answer for you, by choosing from those provided along with the statements.

Name : .....Class : .....

- |   |   |   |  |
|---|---|---|--|
| 1 | Attitude to help my friends any time.   | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |
| 2 | Interest to provide my own contribution to solve the problem faced by class.                          | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |
| 3 | Readiness to co-operate with my friends.  | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |
| 4 | Habit of blaming and quarrelling with my peers for silly matters.                                     | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |
| 5 | Attitude to help needy friends to overcome difficulties.  | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |
| 6 | Habit of taking sincere efforts in understanding and solving the problems of friends as that of mine. | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |
| 7 | Interest to participate in academic activities.   | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |
| 8 | Care in sanitation.   | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |
| 9 | Habit of punctuality.   | : | Have very much/more or less/<br>have less/have very less/ do<br>not have |

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- 10 Attitude to respect the qualities of friends. : Have very much/more or less/  
have less/have very less/ do  
not have
- 11 Habit of whole-hearted participation in  
academic matters. : Have very much/more or less/  
have less/have very less/ do  
not have
- 12 Wish to do many good things for social  
welfare. : Have very much/more or less/  
have less/have very less/ do  
not have
- 13 Consciousness about my rights as a  
citizen. : Have very much/more or less/  
have less/have very less/ do  
not have
- 14 Readiness to take part in the programmes  
for welfare of school. : Have very much/more or less/  
have less/have very less/ do  
not have
- 15 Interest to teach others the subjects in  
which I have expertise. : Have very much/more or less/  
have less/have very less/ do  
not have
- 16 Interest to study in groups. : Have very much/more or less/  
have less/have very less/ do  
not have
- 17 Habit of maximum co-operation with  
friends in learning activities. : Have very much/more or less/  
have less/have very less/ do  
not have
- 18 Interest to participate in arts and sports  
festivals. : Have very much/more or less/  
have less/have very less/ do  
not have
- 19 I take effort to increase the standard of  
both academic and non-academic subjects. : Have very much/more or less/  
have less/have very less/ do  
not have
- 20 Interest to draw diagrams and write stories  
and poems. : Have very much/more or less/  
have less/have very less/ do  
not have

**APPENDIX B13**

**ITEM DISCRIMINATION VALUES (t) OF SELECTED ITEMS IN SCALES OF WITHIN-CHILD PROTECTIVE FACTORS**

SOCIAL COMPETENCE		PROBLEM SOLVING SKILL		CRITICAL CONSCIOUSNESS		AUTONOMY	
1	8.55	1	9.06	1	7.64	1	6.08
2	7.97	2	10.35	2	10.48	2	8.00
3	8.41	3	12.51	3	11.03	3	3.30
4	10.79	4	9.09	4	10.22	4	6.47
5	8.59	5	10.33	5	8.90	5	8.87
6	6.67	6	12.95	6	9.61	6	2.98
7	9.09	7	12.04	7	9.16	*7	4.67
8	5.79	8	11.60	8	7.02	8	9.14
9	9.01	9	10.60	9	7.10	*9	11.99
10	8.68	10	9.63	10	8.55	*10	3.92
11	8.92	11	10.19	11	8.53	11	6.23
*12	1.31	12	7.49	12	6.42	12	6.63
13	10.49	13	11.94			13	9.06
14	8.01	14	10.60			*14	11.54
*15	6.16	15	10.92			*15	12.64
*16	6.57	*16	5.28			*16	6.97
17	8.69	17	9.74			*17	9.57
18	8.98					*18	0.61
19	9.59					*19	5.42
20	9.59					*20	12.85
21	8.58						

SENSE OF PURPOSE		PEER SUPPORT	
1	11.30	1	7.58
2	10.10	2	11.03
3	12.54	3	8.81
4	5.62	4	10.58
5	8.92	5	9.00
6	9.45	6	12.79
7	10.13	7	10.08
8	7.81	8	7.91
9	10.20	9	10.12
10	12.81	10	9.24
11	15.16	11	12.51
12	12.65	12	6.31
13	11.83	13	8.84
14	10.51	14	12.14
15	12.53	15	12.27
16	10.12	*16	3.77
17	6.37	17	10.57
18	9.45	18	10.07
*19	1.89	19	12.76
20	10.48	20	8.09
*21	6.42		
22	6.68		

Note : Items with ‘\*’ marks are deleted from the final scale after try out

**APPENDIX B14**  
**FACTORIAL VALIDITY OF SCALES OF**  
**WITHIN-CHILD PROTECTIVE FACTORS**

<b>Scale of Social competence</b>		<b>Scale of Problem-solving skill</b>		<b>Scale of Sense of purpose</b>		<b>Scale of Peer support</b>	
<u>Item no.</u>	<u>Factor Loading*</u>			<u>Item no.</u>	<u>Factor Loading*</u>		
1	.549	13	.677	1	.533	10	.624
2	.515	14	.567	2	.543	11	.691
3	.528	15	.612	3	.655	12	.438
4	.549	16	.530	4	.495	13	.586
5	.477	<b>Scale of Critical consciousness</b>		5	.524	14	.672
6	.495	<u>Item no.</u>	<u>Factor Loading*</u>	6	.662	15	.591
7	.516	1	.523	7	.606	16	.625
8	.448	2	.572	8	.605	17	.497
9	.643	3	.527	9	.663	18	.660
10	.535	4	.642	10	.651	19	.429
11	.561	5	.610	11	.641		
12	.470	6	.656	12	.659		
13	.580	7	.608	13	.627		
14	.539	8	.597	14	.554		
15	.422	9	.559	15	.593		
16	.524	10	.594	16	.634		
17	.635	11	.653	17	.618		
18	.477	12	.546	18	.585		
<b>Scale of Problem-solving skill</b>		<b>Scale of Autonomy</b>		19	.526		
<u>Item no.</u>	<u>Factor Loading*</u>	<u>Item no.</u>	<u>Factor Loading*</u>	20	.463		
1	.668	1	.390	<b>Scale of peer support</b>			
2	.638	2	.702	<u>Item no.</u>	<u>Factor Loading*</u>		
3	.615	3	.564	1	.423		
4	.556	4	.645	2	.552		
5	.635	5	.688	3	.500		
6	.528	6	.468	4	.464		
7	.629	7	.600	5	.495		
8	.550	8	.625	6	.628		
9	.637	9	.694	7	.598		
10	.446	10	.683	8	.522		
11	.628			9	.529		
12	.530						

\*Extraction method principal component analysis; only one component extracted; N=478

## APPENDIX B15 SCALE OF SOCIAL COMPETENCE (Final)

### നിർദ്ദേശങ്ങൾ

സ്കൂളിലെയും വീട്ടിലെയും പ്രവർത്തനങ്ങളിൽ ശരിയായി ഇടപെട്ടുകൊണ്ട് വിജയം നേടാനുള്ള നിങ്ങളുടെ കഴിവുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

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| 1  | പഠനകാര്യങ്ങളിൽ സുഹൃത്തുക്കളുടെ അറിവും മികവും ആവശ്യത്തിന് ഉപയോഗപ്പെടുത്താനുള്ള കഴിവ്                                 | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2  | അധ്യാപകരുടെ അറിവുകൾ ക്ലാസ്സ് സമയത്തും അല്ലാത്തപ്പോഴും ഉപയോഗപ്പെടുത്താനുള്ള പ്രാപ്തി                                 | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3  | ഓരോ കാര്യവും അതാത് സമയത്ത് ചെയ്ത തീർക്കാൻ കുടുംബാംഗങ്ങളുടെ സഹായം തേടാനുള്ള കഴിവ്                                    | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4  | ക്ലാസ്സിൽ എനിക്കുണ്ടാകുന്ന സംശയങ്ങൾ അപ്പോൾ തന്നെ അധ്യാപകരോട് ചോദിച്ച് മനസ്സിലാക്കാനുള്ള ശേഷി.                       | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5  | പഠന വസ്തുക്കൾ (ചിത്രങ്ങൾ, പത്ര കട്ടിങ്ങുകൾ, മനു് ശേഖരണങ്ങൾ) കണ്ടെത്തുന്നതിൽ മനുള്ളവരുടെ സഹായം ലഭ്യമാക്കാനുള്ള കഴിവ് | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6  | വീടും ക്ലാസ് മുറിയും ക്രമമായും വൃത്തിയായും സൂക്ഷിക്കാനുള്ള പ്രാപ്തി   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7  | ക്ലാസ് റൂമിലും വീട്ടിലും എന്റെ പ്രവർത്തനങ്ങൾ അടക്കും ചിട്ടയുമായി കൊണ്ട് പോകാനുള്ള ശേഷി                              | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8  | കുടുംബാംഗങ്ങളോട് പഠന സംബന്ധമായ കാര്യങ്ങൾ തുറന്ന് പറയാനുള്ള കഴിവ്.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9  | എന്റെ പ്രത്യേക കഴിവുകൾ പഠന സംബന്ധമായ കാര്യങ്ങളിൽ പരമാവധി പ്രകടിപ്പിക്കാനുള്ള ശേഷി                                   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 10 | സമൂഹത്തിൽ നടക്കുന്ന കാര്യങ്ങൾ വിശകലനം ചെയ്യാനുള്ള കഴിവ്.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 11 | പെട്ടെന്ന് ഒരു പ്രശ്നം നേരിടേണ്ടി വരുമ്പോൾ കൂടെയുള്ളവരുടെ സഹായത്തോടെ അത് പരിഹരിക്കാനുള്ള പ്രാപ്തി.                  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 12 | സ്കൂൾ വേദികളിൽ എന്റെ പ്രാവീണ്യം പ്രകടിപ്പിക്കാനുള്ള കഴിവ്.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

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- 13 മനുജളവരുടെ പ്രശ്നങ്ങളറിഞ്ഞാൽ എന്നാൽ കഴിയും വിധം പരിഹാര മാർഗ്ഗങ്ങൾ നിർദ്ദേശിക്കാനുള്ള പ്രാപ്തി. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 14 ക്ലാസ്റും ചർച്ചകൾ, സെമിനാറുകൾ, പ്രൊജക്ട് വർക്കുകൾ എന്നിവയിൽ വേണ്ടത്ര പങ്കെടുക്കാനുള്ള ശേഷി. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 15 നിത്യവും പത്രം വായിക്കുന്ന ശീലം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 16 മനസിലുള്ള കാര്യങ്ങൾ വ്യക്തമായി മനുജള വരോട് പറയാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 17 സെമിനാറുകൾ അവതരിപ്പിക്കുമ്പോൾ ഭാഷ ഉചിതമായി ഉപയോഗിക്കാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 18 വ്യക്തമായി സംസാരിക്കാനുള്ള കഴിവ്. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല

## APPENDIX B16 SCALE OF PROBLEM SOLVING SKILL (Final)

### നിർദ്ദേശങ്ങൾ

പാഠ്യപാഠ്യേതരപ്രവർത്തനങ്ങളുമായി ബന്ധപ്പെട്ട് നേരിടേ ിവരുന്ന പ്രശ്നങ്ങളെ വ്യക്തമായി മനസ്സിലാക്കി അവ പരിഹരിക്കാനുള്ള നിങ്ങളുടെ കഴിവുകളെക്കുറിച്ചുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

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| 1 | പഠനപരമായി എനിക്കുണ്ടാവുന്ന പ്രശ്നങ്ങളെക്കുറിച്ച് ചിന്തിക്കാനുള്ള ശേഷി.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2 | ക്ലാസ്റുമിൽ വെച്ച് പാഠ്യവും പാഠ്യേതരവുമായ പ്രശ്നങ്ങൾ നേരിടേണ്ടി വരുമ്പോൾ അത് വ്യക്തമായി മനസ്സിലാക്കാനുള്ള കഴിവ്. | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3 | ഓരോ പാഠ്യവിഷയവും പഠിക്കാൻ എനിക്കുള്ള ഏന്റവും പ്രധാനപ്പെട്ട പ്രശ്നമെന്താണെന്ന് മനസ്സിലാക്കാനുള്ള പ്രാപ്തി.        | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4 | പരീക്ഷകളിൽ മാർക്ക് കുറയുമ്പോൾ എന്തുകൊണ്ടാണ് അങ്ങനെ സംഭവിച്ചതെന്ന് ചിന്തിക്കാനുള്ള ശേഷി.                          | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5 | പ്രശ്നപരിഹാരത്തിനായി ചിട്ടയായ ഒരു പ്ലാൻ തയ്യാറാക്കാനുള്ള പ്രാപ്തി.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6 | പഠനപരമായി മുൻകൂട്ടി തീരുമാനിക്കുന്ന കാര്യങ്ങൾ പ്രാവർത്തികമാക്കാനുള്ള കഴിവ്.                                      | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7 | പഠനപരമായ വലിയ പ്രശ്നങ്ങൾ പരിഹരിക്കാൻ യാഥാർത്ഥ്യ ബോധത്തോടെയുള്ള ഒരു രൂപരേഖ മനസ്സിൽ കാണാനുള്ള ശേഷി.                | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8 | പഠനപരമായി എനിക്കുണ്ടാവുന്ന ബുദ്ധിമുട്ടുകൾ ഒഴിവാക്കാൻ അതാത് സമയത്ത് അധ്യാപകരുടെ സഹായം തേടാനുള്ള കഴിവ്.            | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9 | പഠനപരമായ സംശയങ്ങൾ ദുരീകരിക്കാൻ വിവിധ മാധ്യമങ്ങൾ ഉപയോഗിക്കാനുള്ള ശേഷി.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

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| <p>10 പഠനപരമായി എനിക്കുണ്ടാകുന്ന പ്രശ്നങ്ങൾ പരിഹരിക്കാൻ കുടുംബാംഗങ്ങളുടെ സഹായം ഉപയോഗപ്പെടുത്താനുള്ള കഴിവ്.</p> | <p>: വാങ്ങ്/ഇല്ല<br/>നന്നായി ഉണ്ട്/ഏറെ കുറെ ഉണ്ട്/കുറവാണ്ട്/തീരെ കുറവാങ്ങ്/ഇല്ല</p> |
| <p>11 പ്രശ്നപരിഹാരത്തിനായി പല വഴികളെപ്പറ്റി ചിന്തിക്കാനുള്ള ശേഷി.</p>  | <p>: നന്നായി ഉണ്ട്/ഏറെ കുറെ ഉണ്ട്/കുറവാണ്ട്/തീരെ കുറവാങ്ങ്/ഇല്ല</p>                 |
| <p>12 സമൂഹത്തിലെ നന്മ തിന്മകളെപ്പറ്റി ചിന്തിക്കാനുള്ള ശേഷി.</p>  | <p>: നന്നായി ഉണ്ട്/ഏറെ കുറെ ഉണ്ട്/കുറവാണ്ട്/തീരെ കുറവാങ്ങ്/ഇല്ല</p>                 |
| <p>13 പ്രശ്ന പരിഹാരത്തിനായി പുതുമയാർന്ന വഴികൾ സ്വീകരിക്കാനുള്ള പ്രാപ്തി.</p>                                   | <p>: നന്നായി ഉണ്ട്/ഏറെ കുറെ ഉണ്ട്/കുറവാണ്ട്/തീരെ കുറവാങ്ങ്/ഇല്ല</p>                 |
| <p>14 സ്കൂളിൽ നിന്ന് നേരിടുന്ന പ്രശ്നങ്ങളെ വിമർശനാത്മകമായി സമീപിക്കാനുള്ള കഴിവ്.</p>                           | <p>: നന്നായി ഉണ്ട്/ഏറെ കുറെ ഉണ്ട്/കുറവാണ്ട്/തീരെ കുറവാങ്ങ്/ഇല്ല</p>                 |
| <p>15 സർഗാത്മകമായ എന്റെ കഴിവുകളെ പഠനത്തിൽ ഉപയോഗപ്പെടുത്താനുള്ള ശേഷി</p>  | <p>: നന്നായി ഉണ്ട്/ഏറെ കുറെ ഉണ്ട്/കുറവാണ്ട്/തീരെ കുറവാങ്ങ്/ഇല്ല</p>                 |
| <p>16 പഠനത്തിന്റെ ഭാഗമായി സർഗാത്മകമായ കഴിവുകൾ വളർത്തിയെടുക്കാനുള്ള ശേഷി.</p>                                   | <p>: നന്നായി ഉണ്ട്/ഏറെ കുറെ ഉണ്ട്/കുറവാണ്ട്/തീരെ കുറവാങ്ങ്/ഇല്ല</p>                 |

## APPENDIX B17 SCALE OF CRITICAL CONSCIOUSNESS (Final)

### നിർദ്ദേശങ്ങൾ

സ്കൂളിലും പൊതുസ്ഥലങ്ങളിലും വെച്ച് സംഭവിക്കാനിടയുള്ള പ്രശ്നങ്ങളെ മുൻകൂട്ടി മനസ്സിലാക്കാനുള്ള നിങ്ങളുടെ ധാരണയുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

- |    |  |   |   |
|----|--|---|---|
| 1  | പഠനപരമായി ഞാൻ നേരിടുന്ന പ്രശ്നങ്ങളെ കുറിച്ച് ചുറ്റും ധാരണ.                                   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2  | സ്കൂളിൽ വെച്ച് ഏതെല്ലാം തരത്തിലുള്ള പ്രയാസങ്ങൾ സംഭവിക്കാമെന്നതിനെക്കുറിച്ചുള്ള അവബോധം.       | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3  | സ്കൂളിലേക്കുള്ള യാത്രക്കിടയിൽ മനുജളവരിൽ നിന്നും ഉണ്ടാകാനിടയുള്ള ശല്യങ്ങളെപ്പറ്റിയുള്ള ബോധം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4  | സ്കൂളിലും പൊതുസ്ഥലങ്ങളിലും ഒളിഞ്ഞിരിക്കുന്ന അപകടങ്ങളെപ്പറ്റിയുള്ള ധാരണ.                      | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5  | എന്റെ കഴിവുകളെയും കഴിവില്ലായ്മകളെയും കുറിച്ച് ചുറ്റും അറിവ്.                                 | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6  | ചുരുപാടുകളിൽ നിന്ന് വരാനിടയുള്ള രോഗങ്ങളെക്കുറിച്ചുള്ള ധാരണ.                                  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7  | ഞാൻ പാലിക്കേണ്ട ആരോഗ്യ ശീലങ്ങളെപ്പറ്റിയുള്ള അവബോധം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8  | കളികൾക്കിടയിൽ അപകടങ്ങൾ സംഭവിക്കാതിരിക്കാനുള്ള മുൻകരുതലുകൾ എടുക്കേണ്ടതിനെപ്പറ്റിയുള്ള ബോധം.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9  | അപരിചിതരായ ആളുകളോട് എങ്ങനെ ഇടപെടണമെന്നതിനെക്കുറിച്ചുള്ള ധാരണ.                                | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 10 | എന്റെ ബന്ധുക്കളും അയൽക്കാരും എന്നിൽ അമിത സ്വാതന്ത്ര്യം എടുത്താലുണ്ടാവുന്ന ഫലത്തെപ്പറ്റിയുള്ള | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

- ഉള്ള ബോധം. വാങ്/തീരെ കുറ  
വാങ്/ഇല്ല
- 11 അപരിചിതരോട് സംസാരിക്കുമ്പോൾ വ്യക്തിപരമായ കാര്യങ്ങൾ തുറന്നു പറഞ്ഞാലുണ്ടാവുന്ന കാര്യങ്ങളെ പരിധിയുള്ള അറിവ്. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറ  
വാങ്/തീരെ കുറ  
വാങ്/ഇല്ല
- 12 എന്റെ രക്ഷിതാക്കളെ അറിയാമെന്ന് പറഞ്ഞ് വരുന്ന അപരിചിതരെ പൂർണ്ണമായി വിശ്വസിച്ചാൽ അതെന്നെ എങ്ങനെ ബാധിക്കുമെന്നതിനെ കുറിച്ചുള്ള അവബോധം. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറ  
വാങ്/തീരെ കുറ  
വാങ്/ഇല്ല

## APPENDIX B18 SCALE OF AUTONOMY (Final)

### നിർദ്ദേശങ്ങൾ

പഠനപ്രവർത്തനങ്ങൾ സ്വയം ചെയ്തുതീർക്കാനുള്ള നിങ്ങളുടെ വിശ്വാസവുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

- 1 പഠനവുമായി ബന്ധപ്പെട്ട സെമിനാറുകൾ, അസൈൻമെന്റുകൾ എന്നിവ മനോജലവരുടെ സഹായമില്ലാതെ ചെയ്യാമെന്ന തോന്നൽ. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല
- 2 പഠന പ്രവർത്തനങ്ങളിൽ ശരിയായി ഇടപെട്ടു കൊണ്ട് പാഠ്യവസ്തു വ്യക്തമായി മനസ്സിലാക്കണമെന്ന വിചാരം. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല
- 3 ക്ലാസിൽ നിന്ന് പഠിച്ച കാര്യങ്ങളെക്കുറിച്ച് പരീക്ഷണങ്ങൾ ചെയ്യാമെന്ന വിശ്വാസം. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല
- 4 പഠന പ്രവർത്തനങ്ങളുടെ പ്രാധാന്യം മനസ്സിലാക്കി എന്റെ ബുദ്ധിപരമായ കഴിവുകൾ പരമാവധി ഉപയോഗിക്കണമെന്ന തോന്നൽ. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല
- 5 നിത്യേന ക്ലാസിൽ പഠിപ്പിക്കുന്ന കാര്യങ്ങൾ സ്വയം തിരഞ്ഞെടുക്കാൻ സാധ്യമാക്കണമെന്ന വിചാരം. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല
- 6 ദുഷ്കാലങ്ങളിൽ നിന്നും ബോധപൂർവ്വം ഒഴിഞ്ഞു നിൽക്കണമെന്ന തോന്നൽ. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല
- 7 പഠന ലക്ഷ്യങ്ങൾ സ്വയം തീരുമാനിക്കാൻ കഴിയുമെന്ന വിശ്വാസം. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല
- 8 കഠിനപ്രയത്നം നമ്മെ വിജയത്തിലേക്ക് നയിക്കുമെന്ന വിശ്വാസം. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല
- 9 ക്ലാസിൽ നിന്നും പഠിച്ച കാര്യങ്ങളെക്കുറിച്ച് കൂടുതൽ വിവരങ്ങൾ ശേഖരിക്കണമെന്ന തോന്നൽ. : നന്നായി ഉണ്ട്/ഏറെ കുറ  
ഉണ്ട്/കുറവാങ്/തീരെ കുറവാങ്/ഇല്ല

10 സങ്കീർണ്ണമായ പാഠഭാഗങ്ങൾ പഠിക്കാൻ ശ്രമിക്കേ : നന്നായി ഉണ്ട്/ഏറെക്കുറെ  
ണമെന്ന വിചാരം. ഉണ്ട്/കുറവാണ്/തീരെ  
കുറവാണ്/ഇല്ല

## APPENDIX B19 SCALE OF SENSE OF PURPOSE (Final)

### നിർദ്ദേശങ്ങൾ

വിദ്യാഭ്യാസവുമായി ബന്ധപ്പെട്ട ലക്ഷ്യങ്ങൾ രൂപീകരിക്കാനും അവ നേടിയെടുക്കുവാനും മുള്ള നിങ്ങളുടെ അഭിലാഷവുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

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|----|--|---|---|
| 1  | എന്റെ സ്കൂൾ ജീവിതവുമായി ബന്ധപ്പെട്ട് കൃത്യമായ ലക്ഷ്യങ്ങൾ രൂപീകരിക്കണമെന്ന ബോധം.                                  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2  | എന്റെ പഠന പ്രവർത്തനങ്ങൾ ത്വരിതപ്പെടുത്താനും പൂർണതയിലെത്തിക്കാനുമുള്ള ലക്ഷ്യങ്ങൾ തയ്യാറാക്കാനുള്ള അറിവ്.          | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3  | പാഠ്യവിഷയം ഏതായാലും അധ്യാപകർ ക്ലാസെടുക്കുമ്പോൾ ഞാൻ നേടേണ്ട ലക്ഷ്യങ്ങൾ മനസിൽ കാണാനുള്ള ബോധം.                      | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4  | പരീക്ഷകളിൽ നല്ല ഗ്രേഡുകൾ നേടണമെന്ന ഉദ്ദേശ്യം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5  | സഹപാഠികളേക്കാൾ മികച്ച പ്രകടനം കാഴ്ചവെക്കണമെന്ന അഭിലാഷം   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6  | പാഠ്യപാഠ്യേതര വിഷയങ്ങളിലുള്ള എന്റെ കഴിവുകളെ മുൻ നിർത്തി അധ്യാപകർ ഇഷ്ടപ്പെടുന്ന ഒരു വിദ്യാർത്ഥിയാവാനുള്ള മനോഭാവം. | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7  | വിദ്യാഭ്യാസപരമായി ഉയർന്ന സ്ഥാനത്തെത്താനുള്ള അതിയായ മോഹം.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8  | പഠിച്ച് നല്ലൊരു ജോലിയിലെത്താനുള്ള അഭിലാഷം.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9  | വിദ്യാഭ്യാസത്തിലൂടെ സമൂഹത്തിലെ മാന്യമായ ഒരു പദവിയിലെത്താനുള്ള അതിയായ ആഗ്രഹം.                                     | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 10 | പഠനവുമായി ബന്ധപ്പെട്ട് രൂപീകരിക്കുന്ന ലക്ഷ്യങ്ങൾ സ്വായത്തമാക്കാൻ പരിശ്രമിക്കുന്ന സ്വഭാവം                         | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

- 11 വിദ്യാഭ്യാസപരമായി മുന്നേറാനുള്ള സ്വയം പ്രേരണ : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 12 വിദ്യാഭ്യാസത്തിലൂടെ ഉയർന്ന മൂല്യങ്ങൾ സ്വായത്തമാക്കാൻ പരിശ്രമിക്കുന്ന സ്വഭാവം . : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 13 അധ്യാപകർ നൽകുന്ന പഠാനുബന്ധ പ്രവർത്തനങ്ങൾ മികവുന്താക്കാൻ പരിശ്രമിക്കണമെന്ന ബോധം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 14 പാഠ്യവസ്തുക്കൾ ആദ്യവായനയിൽ മനസിലായില്ലെങ്കിൽ അത് മനസിലാക്കാൻ കൂടുതൽ സമയം ചെലവഴിക്കാനുള്ള മനോഭാവം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 15 എനിക്ക് ബുദ്ധിമുട്ടുള്ള പാഠഭാഗങ്ങൾ സ്ഥിര പ്രയത്നത്തിലൂടെ മനസിലാക്കാനുള്ള വിവേകം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 16 വിദ്യാഭ്യാസം എന്റെ ജീവിത നിലവാരം ഉയർത്തുമെന്ന പ്രതീക്ഷ. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 17 ഓരോ ദിവസവും സ്കൂളിൽ നിന്ന് പുതിയ കാര്യങ്ങൾ പഠിക്കാമെന്ന പ്രതീക്ഷ. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 18 ഓരോ പഠന പ്രവർത്തനവും എന്റെ അറിവ് വർദ്ധിപ്പിക്കും എന്ന ശുഭാപ്തി വിശ്വാസം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 19 എന്റെ വിദ്യാഭ്യാസത്തിലൂടെ എന്റേയും കുടുംബാംഗങ്ങളുടെയും ജീവിത നിലവാരം ഉയരുമെന്ന ശുഭപ്രതീക്ഷ. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 20 പഠിച്ച് നല്ല നിലയിലെത്താമെന്ന എന്റെ പ്രതീക്ഷക്ക് പ്രാർത്ഥന ഉറപ്പു കൂട്ടുമെന്ന മനോഭാവം : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല

## APPENDIX B20 SCALE OF PEER SUPPORT (Final)

### നിർദ്ദേശങ്ങൾ

സഹപാഠികളുമായും വിദ്യാഭ്യാസപ്രവർത്തനങ്ങളുമായും സഹകരിച്ച് ഒരു നല്ല വിദ്യാർത്ഥിയാവാവാനുള്ള നിങ്ങളുടെ താല്പര്യവുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിട്ടുള്ളത്. അവയിലോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അതിനു നേരെ കൊടുത്തിരിക്കുന്ന ഉത്തരങ്ങളിൽ നിങ്ങൾക്ക് ഏറ്റവും അനുയോജ്യമായതിന് മുകളിൽ 'ശരി' (✓) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

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|----|---|---|---|
| 1  | എന്റെ സഹപാഠികളെ ഏത് സമയത്തും സഹായിക്കാനുള്ള മനോഭാവം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 2  | ക്ലാസ് നേരിടുന്ന പ്രശ്നം പരിഹരിക്കുന്നതിന് എന്തേതായ സംഭാവന നൽകാനുള്ള താല്പര്യം.               | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 3  | സഹപാഠികളുമായി സഹകരിച്ച് പോകാനുള്ള സന്നദ്ധത.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 4  | നിസാരകാര്യങ്ങൾക്ക് സഹപാഠികളുമായി വഴക്കിടുകയും കൂനും പറയുകയും ചെയ്യുന്ന ശീലം.                  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 5  | സഹപാഠികൾക്കുണ്ടാകുന്ന പ്രതികൂല ജീവിത സാഹചര്യങ്ങളെ തരണം ചെയ്യാൻ സഹായിക്കണമെന്ന മനോഭാവം.        | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 6  | സഹപാഠികളുടെ പ്രശ്നങ്ങൾ എന്തേതെന്ന പോലെ കാണാനും പരിഹരിക്കാനും ആത്മാർത്ഥമായി ശ്രമിക്കുന്ന ശീലം. | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 7  | വിദ്യാഭ്യാസപരമായ പ്രവർത്തനങ്ങളിൽ പങ്കെടുക്കാനുള്ള താല്പര്യം.                                  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 8  | ശുചിത്വ കാര്യങ്ങളിലുള്ള ശ്രദ്ധ.   | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 9  | കൃത്യനിഷ്ഠ പാലിക്കുന്ന ശീലം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 10 | സഹപാഠികളുടെ ഗുണങ്ങളെ ബഹുമാനിക്കാനുള്ള മനോഭാവം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 11 | വിദ്യാഭ്യാസ കാര്യങ്ങളിൽ ആത്മാർത്ഥമായി പങ്കെടുക്കുന്ന ശീലം.                                    | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |
| 12 | സമൂഹ നന്മക്കായി പല കാര്യങ്ങളും ചെയ്യണമെന്ന ആഗ്രഹം.  | : | നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല |

- 13 ഒരു പൗരനെന്ന നിലയിൽ എന്റെ അവകാശങ്ങളെക്കുറിച്ചുള്ള അവബോധം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 14 സ്കൂളിന്റെ നന്മക്കായി നടത്തുന്ന പരിപാടികളിൽ പങ്കെടുക്കാനുള്ള സന്നദ്ധത. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 15 എനിക്ക് പ്രാവീണ്യമുള്ള വിഷയങ്ങൾ മനസ്സുള്ളവർക്ക് പഠിപ്പിച്ചു കൊടുക്കാനുള്ള താല്പര്യം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 16 പഠന പ്രവർത്തനങ്ങളിൽ സഹപാഠികളോട് പരമാവധി സഹകരിക്കുന്ന ശീലം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 17 കലാകായിക മത്സരങ്ങളിൽ പങ്കെടുക്കാനുള്ള താല്പര്യം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 18 പാഠ്യപാഠ്യേതര വിഷയങ്ങളിൽ നല്ല നിലവാരം പുലർത്താനുള്ള പരിശ്രമം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല
- 19 ചിത്രം വരക്കാനും കഥയും കവിതയും എഴുതാനുമുള്ള താല്പര്യം. : നന്നായി ഉണ്ട്/ഏറെക്കുറെ ഉണ്ട്/കുറവാണ്/തീരെ കുറവാണ്/ഇല്ല



**DEPARTMENT OF EDUCATION  
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**SCALE OF FAMILY PROTECTIVE  
FACTORS**

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കുട്ടികളുടെ പഠനനിലവാരം വർദ്ധിപ്പിക്കാനും അവരുടെ വ്യക്തിത്വ വികാസത്തിനുമായി മാതാപിതാക്കൾ ഒരുക്കിക്കൊടുക്കുന്ന സാഹചര്യങ്ങളുമായും മാതാപിതാക്കളുടെ സ്വഭാവരീതികളുമായും ബന്ധപ്പെട്ട കാര്യങ്ങൾ അളക്കുന്നതിനുള്ള ഒരു മാനകമാണിത്. മാതാപിതാക്കൾ ഒരുക്കിക്കൊടുക്കുന്ന സാഹചര്യങ്ങൾ, കുട്ടികളുടെ വ്യക്തിത്വപരിപോഷണം, ഗൃഹാന്തരീക്ഷം, കുട്ടികളെ വളർത്തുന്ന രീതി എന്നീ മേഖലകളെ പ്രത്യേകമായി അളക്കാനുള്ള നാല് ഉപമാനകങ്ങൾ ഇതിൽ ഉൾപ്പെടുത്തിയിട്ടുണ്ട്. ഓരോ ഉപമാനകത്തിനും അനുയോജ്യമായ ഉത്തരസൂചികകളും നൽകിയിട്ടുണ്ട്. മേൽപറഞ്ഞ നാല് മേഖലകളും അളക്കുന്നതിന് ഉപമാനകങ്ങൾ പ്രത്യേകം പ്രത്യേകമായോ, ഇവ നാലും ഒന്നിച്ചോ ഉപയോഗിക്കാവുന്നതാണ്. ഓരോ മേഖലയിലെയും പ്രശ്നങ്ങൾക്ക് പ്രത്യേകം മാർക്ക് നൽകേണ്ടതാണ്. ഇവ ക്ലാസിൽ നടത്തുന്നതിന് 20 മുതൽ 40 മിനുട്ട് വരെ നൽകാവുന്നതാണ്.

The scale of family protective factors is meant to measure the conditions arranged by parents and their behavioural patters to improve the academic standards and personality development of students. The four scales coming under this measure are family resources, family psychological nurturance, family environment and authentitative parenting. Appropriate response sheets are provided along with this. In order to measure the above mentioned four areas, one can administer the four scales separately or in combination. Care should be taken to assign separate score to each area. 20 to 40 minutes can be given for classroom administration.

## APPENDIX C1

### SCALE OF FAMILY RESOURCES (Draft)

#### നിർദ്ദേശങ്ങൾ

നിങ്ങളുടെ ശരിയായ വളർച്ചക്കും വികാസത്തിനും ആവശ്യമായ സൗകര്യങ്ങൾ മാതാപിതാക്കൾ എത്രമാത്രം ഒരുക്കിത്തരുന്നു എന്നതുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ അഞ്ച് ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എനിക്ക് ഇഷ്ടമുള്ള പോഷക സമൃദ്ധമായ ഭക്ഷണങ്ങൾ വീട്ടിൽ നിന്നും എപ്പോഴും ലഭിക്കാറുണ്ട്.
2. എന്റെ ജീവിത സുരക്ഷക്ക് വേണ്ട കാര്യങ്ങൾ ഒരുക്കി തരുന്നതിൽ മാതാപിതാക്കൾ എപ്പോഴും ശ്രദ്ധിക്കാറുണ്ട്.
3. എന്റെ ന്യായമായ ആവശ്യങ്ങൾ മാതാപിതാക്കൾ എപ്പോഴും നേടിത്തരാറുണ്ട്.
4. മാതാപിതാക്കൾ എന്റെ താൽപര്യം അന്വേഷിക്കാറുണ്ട്.
5. ഞാൻ പത്രം വായിക്കുന്നുണ്ടോ എന്ന് മാതാപിതാക്കൾ ശ്രദ്ധിക്കാറുണ്ട്.
6. എന്റെ സംശയങ്ങൾ ദൂരീകരിക്കാൻ സഹായിക്കുന്ന വ്യക്തികളെ മാതാപിതാക്കൾ പരിചയപ്പെടുത്തി തരാറുണ്ട്.
7. വായിക്കാൻ നല്ല പുസ്തകങ്ങൾ (പാഠപുസ്തകമല്ലാത്തവ) മാതാപിതാക്കൾ വാങ്ങിത്തരാറുണ്ട്.
8. ഞാൻ സുരക്ഷിതമായ വഴിയിലൂടെത്തന്നെയല്ലേ സ്കൂളിലെത്തുന്നത് എന്ന് മാതാപിതാക്കൾ അന്വേഷിക്കാറുണ്ട്.
9. ആരോഗ്യകരമായ ശീലങ്ങൾ പാലിക്കാൻ മാതാപിതാക്കൾ എന്നെ പ്രേരിപ്പിക്കാറുണ്ട്.
10. അസുഖം വരുമ്പോൾ എനിക്ക് ചികിത്സ കിട്ടാറുണ്ട്.
11. അറിവ് വർദ്ധിപ്പിക്കാനായി വിവിധ മാധ്യമങ്ങൾ മാതാപിതാക്കൾ ലഭ്യമാക്കി തരാറുണ്ട്.
12. ടെലിവിഷനിലെ വിദ്യാഭ്യാസ പരിപാടികൾ കാണാൻ എന്നെ മാതാപിതാക്കൾ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
13. എനിക്ക് നല്ല പഠന സാഹചര്യങ്ങൾ മാതാപിതാക്കൾ ഒരുക്കി തരാറുണ്ട്.
14. മേശ, കസേര, തുടങ്ങിയ പഠന സൗകര്യങ്ങൾ മാതാപിതാക്കൾ എനിക്ക് പ്രത്യേകം ഒരുക്കി തരാറുണ്ട്.
15. കാണും വെളിച്ചവുമുള്ള സ്ഥലം പഠിക്കാനായി മാതാപിതാക്കൾ എനിക്ക് ലഭ്യമാക്കി തന്നിട്ടുണ്ട്.
16. നല്ല വ്യക്തികളെ മാതൃകയാക്കാൻ മാതാപിതാക്കൾ എന്നെ സഹായിക്കാറുണ്ട്.
17. മനുജളവർ ചെയ്യുന്ന നല്ല പ്രവൃത്തികൾ കണ്ടുമനസ്സിലാക്കാൻ മാതാപിതാക്കൾ പറയാറുണ്ട്.

## APPENDIX C2

### SCALE OF FAMILY PSYCHOLOGICAL NURTURANCE (Draft)

**നിർദ്ദേശങ്ങൾ**

വ്യക്തിത്വത്തിന്റെ പരിപോഷണത്തിനും നല്ല ശീലങ്ങൾ വളർത്തിയെടുക്കുന്നതിനും വേണ്ടി മാതാപിതാക്കൾ നിങ്ങളെ എത്രമാത്രം സഹായിക്കുകയും അവസരം നൽകുകയും ചെയ്യുന്നു എന്നതിനെ സംബന്ധിച്ച പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. വ്യക്തിത്വം കാത്തുസൂക്ഷിക്കണമെന്ന് മാതാപിതാക്കൾ എന്ന ഉപദേശിക്കാറുണ്ട്.
2. മനുജളവരുടെ ന്യായമായ ആവശ്യങ്ങൾ അംഗീകരിക്കാൻ മാതാപിതാക്കൾ എന്ന പ്രേരിപ്പിക്കാറുണ്ട്.
3. മനുജളവരുടെ സന്തോഷവും സങ്കടവും എന്തെന്നപോലെ കാണാൻ മാതാപിതാക്കൾ എന്ന പരിശീലിപ്പിക്കാറുണ്ട്.
4. എന്റെ വ്യക്തിത്വത്തിന്റെ നല്ലതും ചീത്തയുമായ വശങ്ങൾ മാതാപിതാക്കൾ ചൂണ്ടിക്കാണിക്കാറുണ്ട്.
5. എന്റെ അഭിപ്രായങ്ങളെ മാതാപിതാക്കൾ അവഗണിക്കാറുണ്ട്.
6. പഠനത്തിൽ നല്ല നിലവാരം പുലർത്താൻ കഴിയുമെന്ന വിശ്വാസം മാതാപിതാക്കൾ എന്നിലുണ്ടാക്കിയിട്ടുണ്ട്.
7. കടമകൾ നന്നായി ചെയ്യാൻ കഴിയുമെന്ന ഉറപ്പ് മാതാപിതാക്കൾ എനിക്ക് നൽകാറുണ്ട്.
8. ഗാർഹികമായ ചില ജോലികൾ സ്വയം ചെയ്യിക്കുന്നതിലൂടെ എന്റെ ആത്മവിശ്വാസം മാതാപിതാക്കൾ വർദ്ധിപ്പിക്കാറുണ്ട്.
9. പഠനത്തിൽ വിജയം നേടാനുള്ള പ്രേരണ എന്റെ മാതാപിതാക്കൾ എപ്പോഴും നൽകാറുണ്ട്.
10. പാഠ്യേതരകാര്യങ്ങളിൽ ഞാൻ പങ്കെടുക്കുന്നതിനെ മാതാപിതാക്കൾ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
11. വിദ്യാഭ്യാസപരമായ നല്ല ലക്ഷ്യങ്ങൾ കൈവരിക്കേണ്ടതിന്റെ ആവശ്യകത മാതാപിതാക്കൾ പറഞ്ഞുതരാറുണ്ട്.
12. ക്ലാസ്സിൽ നല്ല നിലവാരം പുലർത്തണമെന്ന് മാതാപിതാക്കൾ എന്നോട് പറയാറുണ്ട്.
13. പരീക്ഷകളിൽ ഉയർന്ന വിജയം നേടുന്നതിന്റെ ഗുണം മാതാപിതാക്കൾ പറഞ്ഞുതരാറുണ്ട്.
14. അധ്യാപകർ ഇഷ്ടപ്പെടുന്ന വിദ്യാർത്ഥിയായി തീരാനുള്ള ഗുണങ്ങൾ മാതാപിതാക്കൾ പറഞ്ഞു തന്നിട്ടുണ്ട്.
15. പഠനത്തിൽ നല്ല നിലവാരം പുലർത്തണമെന്ന് മാതാപിതാക്കൾ പറയാറില്ല.
16. സന്മാർഗ്ഗികതയും സദാചാരബോധവും പാലിക്കേണ്ടതിന്റെ ആവശ്യകത മാതാപിതാക്കൾ മനസ്സിലാക്കി തന്നിട്ടുണ്ട്.
17. സമൂഹത്തിൽ മറഞ്ഞിരിക്കുന്ന ചതികളെയും അവയിൽ അകപ്പെടാതിരിക്കുവാനുള്ള മുൻകരുതലുകളെയും പഠി മാതാപിതാക്കൾ പറഞ്ഞു തരാറുണ്ട്.

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18. സദാചാരബോധമില്ലാത്ത വ്യക്തികളോട് ഇടപെടുന്നത് മാതാപിതാക്കൾ വിലക്കാരാണ്.
19. നല്ല വ്യക്തികളെ മാതൃകയാക്കാൻ മാതാപിതാക്കൾ പ്രേരിപ്പിക്കാറുണ്ട്.
20. സമൂഹത്തിൽ ഞാൻ ചെയ്യേണ്ട കടമകളെപ്പറ്റി മാതാപിതാക്കൾ പറഞ്ഞു തരാറുണ്ട്.
21. വിദ്യാഭ്യാസപരമായ വാർത്തകളും പുതിയ അറിവുകളും എനിക്ക് വേണ്ടി മാതാപിതാക്കൾ ശേഖരിക്കാറുണ്ട്.
22. ടി.വി.യിൽ വരുന്ന വിദ്യാഭ്യാസപരവും ആരോഗ്യപരവുമായ പരിപാടികൾ കാണാൻ മാതാപിതാക്കൾ പ്രേരിപ്പിക്കാറുണ്ട്.
23. സന്നദ്ധ സംഘടനകൾ സംഘടിപ്പിക്കുന്ന സെമിനാറുകളും വിദ്യാഭ്യാസ പരിപാടികളും കേൾക്കാൻ മാതാപിതാക്കൾ എന്നെ കൊണ്ടു പോകാറുണ്ട്.
24. വീട്ടിൽ വെച്ച് തന്നെ കഴിവുകൾ വളർത്തിയെടുക്കാനാവശ്യമായ അവസരവും പ്രോത്സാഹനവും മാതാപിതാക്കൾ നൽകാറുണ്ട്.
25. ഒരു പ്രവൃത്തിയും നന്നായി ചെയ്യാൻ എനിക്ക് കഴിവില്ല എന്ന് മാതാപിതാക്കൾ പറയാറുണ്ട്.
26. എന്റെ ആത്മവിശ്വാസം നഷ്ടപ്പെടുത്തുന്ന രീതിയിലാണ് എന്നോട് മാതാപിതാക്കൾ പെരുമാറുന്നത്.
27. ഞാൻ ഏത് പ്രവൃത്തി ചെയ്യുമ്പോഴും തമാശയോടുകൂടി മാത്രമേ മാതാപിതാക്കൾ അത് വീക്ഷിക്കാറുള്ളൂ.
28. സമൂഹത്തിലെ നന്മ തിന്മകൾ തിരിച്ചറിയാൻ മാതാപിതാക്കൾ സഹായിക്കാറുണ്ട്.
29. എന്റെ പ്രവൃത്തികളിലെ തെന്റുകൾ മാത്രം കണ്ടുപിടിക്കാനാണ് മാതാപിതാക്കൾ ശ്രമിക്കാറുള്ളത്.
30. അവധികാലങ്ങളിൽ ഹൃസ്വകാല കോഴ്സുകൾ പഠിക്കാൻ മാതാപിതാക്കൾ എന്നെ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.

## APPENDIX C3 SCALE OF FAMILY ENVIRONMENT (Draft)

### നിർദ്ദേശങ്ങൾ

പാഠ്യപാഠ്യേതരപ്രവർത്തനങ്ങൾ നന്നായി കൊടുപോകുന്നതിൽ മാതാപിതാക്കളുടെ സ്വഭാവവും ഗൃഹാന്തരീക്ഷവും നിങ്ങൾക്ക് എത്രമാത്രം അനുകൂലമാണെന്നതിനെക്കുറിച്ചുള്ള ചില പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എന്റെ കുടുംബങ്ങൾ എല്ലാവരും തമ്മിൽ നല്ല മാനസിക ഐക്യമുണ്ട്.
2. മാതാപിതാക്കൾ എന്റെ ഏന്ദ്രവും നല്ല കുട്ടുകാരാണ്.
3. ഏതു കാര്യവും മാതാപിതാക്കളോട് തുറന്ന് പറയാൻ എനിക്ക് സ്വാതന്ത്ര്യമുണ്ട്.
4. എനിക്കിഷ്ടമില്ലാത്ത പല കാര്യങ്ങളും മാതാപിതാക്കൾ എന്നിൽ അടിച്ചേൽപ്പിക്കാറുണ്ട്.
5. വീട്ടിൽ ഞങ്ങളെല്ലാവരും ഒരു നേരമെങ്കിലും ഒന്നിച്ചിരുന്ന് ഭക്ഷണം കഴിക്കാറുണ്ട്.
6. ഏതു കാര്യത്തിലെയും തീരുമാനവും ഞങ്ങൾ കുടുംബാംഗങ്ങളെല്ലാവരും ചർച്ച ചെയ്തതിനു ശേഷമേ എടുക്കാറുള്ളൂ.
7. എന്റെ മാതാപിതാക്കൾ എന്നെ മനസ്സിലാക്കുന്നവരാണ്.
8. ചെറിയ കാര്യങ്ങൾക്ക് പോലും എന്റെ കുടുംബാംഗങ്ങൾ തമ്മിൽ കലഹിക്കാറുണ്ട്.
9. വളരെ ഊഷ്മളമായ അന്തരീക്ഷമാണ് എന്റെ വീട്ടിലുള്ളത്.
10. എന്റെ പഠനം കഴിഞ്ഞതിനുശേഷം ഗാർഹിക കാര്യങ്ങളിൽ ഞാൻ മാതാപിതാക്കളെ സഹായിക്കാറുണ്ട്.
11. ഏതു തൊഴിലിനും മഹത്വമുണ്ടെന്ന് മാതാപിതാക്കൾ പറഞ്ഞു തരാറുണ്ട്.
12. എന്റെ കുടുംബാംഗങ്ങൾ എല്ലാവരും ചിട്ടയോടുകൂടിയാണ് അവരവരുടെ ജോലികൾ ചെയ്യുന്നത്.
13. വളരെ ചിട്ടയായ ജീവിതരീതി ഉള്ളതുകൊണ്ട് സമയമില്ല എന്ന പരാതി എന്റെ വീട്ടിലാകാറുണ്ട്.
14. വഴക്കുകൾ ഉണ്ടായാൽ എന്റെ കുടുംബാംഗങ്ങൾ ഒന്നിച്ചിരുന്ന് അത് പരിഹരിക്കാറുണ്ട്.
15. എന്റെയും മാതാപിതാക്കളുടെയും താൽപര്യങ്ങൾ വ്യത്യസ്തമായതുകൊണ്ട് ഞങ്ങൾ തമ്മിൽ എപ്പോഴും വഴക്കുണ്ടാക്കാറുണ്ട്.
16. മാതാപിതാക്കൾ തമ്മിലുള്ള കലഹം എന്റെ മനസ്സിനെയും പഠനത്തെയും പ്രതികൂലമായി ബാധിക്കാറുണ്ട്.
17. പ്രശ്ന പരിഹാരത്തിനായി എന്റെ കുടുംബങ്ങൾ വിട്ടുവീഴ്ച ചെയ്യാറുണ്ട്.
18. എന്റെ പാഠ്യപാഠ്യേതര വിഷയങ്ങളെപ്പറ്റി മാതാപിതാക്കൾ കലഹം ഉണ്ടാക്കാറില്ല.

## APPENDIX C4 SCALE OF AUTHORITATIVE PARENTING (Draft)

### നിർദ്ദേശങ്ങൾ

മാതാപിതാക്കൾ നിങ്ങളെ വളർത്തുന്ന രീതിയുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് :..... ക്ലാസ്സ് :.....

1. വളരെ സ്വാതന്ത്ര്യത്തോടു കൂടിയാണ് മാതാപിതാക്കൾ എന്നെ വളർത്തുന്നത്.
2. എനിക്ക് ഇഷ്ടമില്ലാത്ത കാര്യങ്ങൾ മാതാപിതാക്കൾ എന്നിൽ അടിച്ചേൽപ്പിക്കാറില്ല.
3. ന്യായമായ എന്റെ ആഗ്രഹങ്ങൾ പോലും മാതാപിതാക്കൾ എനിക്ക് സാധിച്ച് തരാറില്ല.
4. മാതാപിതാക്കൾ എന്നിൽ അനാവശ്യ നിയന്ത്രണങ്ങൾ ഏർപ്പെടുത്താറുണ്ട്.
5. എന്റെ അഭിപ്രായങ്ങൾ മാതാപിതാക്കൾ പരിഗണിക്കാറുണ്ട്.
6. എന്റെ പല പ്രശ്നങ്ങളും മാതാപിതാക്കളോട് തുറന്ന് പറയാൻ എനിക്ക് പേടിയാണ്.
7. എന്റെ മാതാപിതാക്കളെ ഞാൻ വളരെയധികം സ്നേഹിക്കുന്നു.
8. പഠിക്കാനാവശ്യമായ നല്ല അന്തരീക്ഷം മാതാപിതാക്കൾ ഒരുക്കി തരാറുണ്ട്.
9. മാതാപിതാക്കളുടെ ആഗ്രഹങ്ങൾ നിറവേറ്റാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.
10. എന്റെ ഒരു കാര്യങ്ങളിലും മാതാപിതാക്കൾ ശ്രദ്ധിക്കാറില്ല.
11. ഞാൻ പറയുന്ന ആവശ്യങ്ങളെല്ലാം മാതാപിതാക്കൾ നിരസിക്കുകയാണ് പതിവ്.
12. മാതാപിതാക്കളുടെ അമിത നിയന്ത്രണം എന്റെ പഠനത്തെ പ്രതികൂലമായി ബാധിക്കുന്നു.
13. ഒഴിവു സമയങ്ങളിൽ ഞാനും മാതാപിതാക്കളും ഒരുമിച്ചിരുന്ന് സംസാരിക്കാറുണ്ട്.

## **APPENDIX C5**

### **SCALE OF FAMILY RESOURCES (Draft)**

#### **Instructions**

The following statements are related with how your parents are providing facilities for you to study. Each statement is provided with 5 answers in the response sheet. Read the statements carefully to decide to what extent they appear true for you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

Name:..... Class: .....

1. I am always provided with delicious food that I like from home.
2. My parents always focus on arranging the things for my life security.
3. My parents always satisfy my reasonable needs.
4. My parents enquire about my interests.
5. Parents take care that I read news paper daily.
6. My parents connect me with persons who can clarify my doubts.
7. Parents buy good books for me (not text books) to read.
8. Parents enquire about safety during my journey to school.
9. My parents prompt me to follow good health habits.
10. I get treatment while sick.
11. My parents arrange media for updating my knowledge.
12. Parents encourage me to watch the educational programmes in television.
13. My parents arrange good learning conditions for me.
14. Parents have arranged separate table and chair for me to study.
15. Parents have to made available a space with fresh air and light for me to study.
16. Parents help me to model good persons.
17. Parents advice me to model the good activities done by others.

## **APPENDIX C6**

### **SCALE OF FAMILY PSYCHOLOGICAL NURTURANCE (Draft)**

#### **Instructions**

The following statements are related with how you are provided with parental support, help and opportunities to nurture the personality and good habits in you. Each statement is provided with 5 answers in the response sheet. Read the statements carefully to decide to what extent they appear right to you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

1. My parents advice me to develop my personality.
2. Parents prompt me to consider the reasonable needs of others.
3. My parents train me to empathize with others.
4. My parents pinpoint strengths and weaknesses of my personality.
5. Parents neglect my opinions.
6. My parents inculcated self-belief in me to perform well in studies.
7. My parents assure me that I can discharge my responsibilities effectively.
8. My parents nurture my self confidence by encouraging me to do some domestic works independently.
9. My parents prompt me to achieve success in studies.
10. My parents encourage me participating in co-scholastic activities.
11. My parents convince me about the necessity of achieving high academic goals.
12. My parents prompt me to manifest good standards in class.
13. Parents demonstrate me merit of securing high score in examinations.
14. Parents provided me with knack of being a good student of my teachers.
15. Parents are silent on me keeping good standards in studies.
16. My parents convince me about the necessity of following moral values.
17. My parents warn and prepare me against hidden traps in society.
18. Control my contact with antisocial persons.
19. Parents prompt me to model good persons.
20. Parents tell my social responsibilities to be carried out.
21. Parents collect educational news and new information for me.
22. My parents prompt me to watch educational and health related programmes in television.

23. Parents take me to attend seminars and educational programmes conducted by various organizations.
24. Parents provide opportunities and encouragement to develop my abilities from home itself.
25. My parents repeat that I am incapable of doing any activities properly.
26. My parents dealing with me make me less confident.
27. My parents see all my actions in a funny way.
28. Parents help me to discriminate social virtues and vices.
29. My parents try to find out only the faults in my actions.
30. My parents encourage me to attend the short term courses during vacation.

## **APPENDIX C7**

### **SCALE OF FAMILY ENVIRONMENT (Draft)**

#### **Instructions**

The following statements are related with to what extent the character of your parents and home environment help you to successfully carryout the curricular and co-curricular activities. Each statement is provided with 5 answers in the response sheet. Read the statements carefully to decide to what extent they appear right to you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

1. Members of my family have emotional oneness.
2. My parents are my best friends.
3. I am free to talk everything to my parents.
4. My parents impose many things on me.
5. All family members dine together at least for a single time everyday.
6. All my family members discuss the matter together before crucial decisions.
7. My parents understand me.
8. My family members quarrel even on silly matters.
9. My home atmosphere is very warm.
10. I render domestic help after my studies.
11. Parents tell me about the dignity of labour.
12. All my family members carry out their duties systematically.
13. None of my family members complain on time because of having systematic life style.
14. All my family members sit together to solve the quarrels and conflicts.
15. Often me and my parents quarrel due to differences in our tastes.
16. Conflict between my parents affects me and my studies.
17. My family members adjust one another to solve family problems.
18. My academic and non-academic matters is not a subject for family problems.

## **APPENDIX C8**

### **SCALE OF AUTHORITATIVE PARENTING (Draft)**

#### **Instructions**

The following statements are related with how your parents are rearing you. Each statement is provided with 5 answers in the response sheet. Read the statements carefully to decide to what extent they appear right to you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

1. My parents rear me with maximum freedom.
2. My parents do not impose things that I do not like on me.
3. My parents neglect even reasonable needs of me.
4. My parents impose unwanted control on me.
5. Parents do consider my opinions.
6. I fear to open up many of my problems to my parents.
7. I love my parents very much.
8. My parents arrange a good atmosphere for me to study.
9. I try to satisfy the desires of my parents.
10. My parents do not care on any of my activities.
11. My parents refuse my needs.
12. Over control of my parents affects my studies negatively.
13. Me and my parents talk together during free time.

**APPENDIX C9**

**SCALE OF FAMILY PROTECTIVE FACTORS  
RESPONSE SHEET**

പേര് :..... ക്ലാസ്സ് :.....

Sl. No.	പൂർണ്ണ മായും ശരി യാണ്	ശരിയാണ്	അറിഞ്ഞു കൂടാ	തെറ്റാണ്	പൂർണ്ണ മായും തെറ്റാണ്
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**APPENDIX C10**  
**ITEM DISCRIMINATION VALUES (t) OF SELECTED ITEMS IN**  
**SCALES OF FAMILY PROTECTIVE FACTORS**

FAMILY RESOURCES		FAMILY PSYCHOLOGICAL NURTURANCE		FAMILY ENVIRONMENT		AUTHORITATIVE PARENTING	
1	8.26	1	7.16	1	6.18	1	5.50
2	10.37	2	8.24	2	7.82	2	9.12
3	11.87	3	10.06	3	7.74	*3	12.16
4	12.77	*4	7.15	4	13.67	*4	9.17
*5	10.57	*5	10.40	5	6.99	5	8.69
6	14.96	6	6.63	6	9.17	*6	13.12
7	12.18	7	8.01	7	8.49	7	3.55
8	12.00	8	7.26	8	11.06	8	5.45
9	9.80	9	6.91	9	9.69	9	5.49
10	7.39	*10	5.75	10	6.46	10	9.82
11	14.57	11	10.95	11	9.15	11	10.98
12	16.05	12	7.29	12	8.52	*12	10.87
13	9.50	13	7.30	13	10.68	13	8.43
14	18.99	14	8.13	14	10.51		
15	9.44	15	9.34	*15	8.39		
16	9.06	16	7.86	*16	7.28		
17	9.38	17	7.53	17	7.97		
		*18	4.71	*18	7.48		
		19	5.06				
		20	9.08				
		21	12.70				
		22	9.62				
		23	9.30				
		24	9.38				
		25	9.98				
		*26	7.45				
		*27	7.40				
		28	9.16				
		*29	10.19				
		30	7.84				

Note : Items with ‘\*’ marks are deleted from the final scale after try out

**APPENDIX C11**  
**FACTORIAL VALIDITY OF SCALE OF FAMILY PROTECTIVE**  
**FACTORS**

Scale of Family Resources		Scale of family psychological nurturance		Scale of family environment		Scale of authoritative parenting	
Item No.	Factor loading*	Item No.	Factor loading*	Item No.	Factor loading*	Item No.	Factor loading*
1	.478	1	.601	1	.502	1	.702
2	.740	2	.424	2	.470	2	.652
3	.655	3	.566	3	.554	3	.716
4	.661	4	.558	4	.468	4	.849
5	.609	5	.588	5	.574	5	.845
6	.638	6	.441	6	.548	6	.763
7	.677	7	.524	7	.507	7	.436
8	.642	8	.679	8	.481	8	.515
9	.677	9	.524	9	.585	9	.756
10	.648	10	.510	10	.510		
11	.656	11	.576	11	.618		
12	.662	12	.392	12	.566		
13	.403	13	.443	13	.539		
14	.486	14	.456	14	.610		
15	.644	15	.459	15	.426		
16	.709	16	.600				
17		17	.639				
		18	.612				
		19	.554				
		20	.627				
		21	.393				
		22	.515				
		23	.448				

\*Extraction method principal component analysis; only one component extracted; N=478

# APPENDIX C12 SCALE OF FAMILY RESOURCES (Final)

## നിർദ്ദേശങ്ങൾ

നിങ്ങളുടെ ശരിയായ വളർച്ചക്കും വികാസത്തിനും ആവശ്യമായ സൗകര്യങ്ങൾ മാതാപിതാക്കൾ എത്രമാത്രം ഒരുക്കിത്തരുന്നു എന്നതുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ അഞ്ച് ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്നത് ഉത്തരസൂചികയിൽ (X) അടയാളം രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എനിക്ക് ഇഷ്ടമുള്ള പോഷകസമൃദ്ധമായ ഭക്ഷണങ്ങൾ വീട്ടിൽ നിന്നും എപ്പോഴും ലഭിക്കാറുണ്ട്.
2. എന്റെ ജീവിത സുരക്ഷക്ക് വേണ്ട കാര്യങ്ങൾ ഒരുക്കി തരുന്നതിൽ മാതാപിതാക്കൾ എപ്പോഴും ശ്രദ്ധിക്കാറുണ്ട്.
3. എന്റെ ന്യായമായ ആവശ്യങ്ങൾ മാതാപിതാക്കൾ എപ്പോഴും നേടിത്തരാറുണ്ട്.
4. മാതാപിതാക്കൾ എന്റെ താൽപര്യം അന്വേഷിക്കാറുണ്ട്.
5. എന്റെ സംശയങ്ങൾ ദുരീകരിക്കാൻ സഹായിക്കുന്ന വ്യക്തികളെ മാതാപിതാക്കൾ പരിചയപ്പെടുത്തി തരാറുണ്ട്.
6. വായിക്കാൻ നല്ല പുസ്തകങ്ങൾ (പാഠപുസ്തകമല്ലാത്തവ) മാതാപിതാക്കൾ വാങ്ങിത്തരാറുണ്ട്.
7. ഞാൻ സുരക്ഷിതമായ വഴിയിലൂടെത്തന്നെയാലേ സ്കൂളിലെത്തുന്നത് എന്ന് മാതാപിതാക്കൾ അന്വേഷിക്കാറുണ്ട്.
8. ആരോഗ്യകരമായ ശീലങ്ങൾ പാലിക്കാൻ മാതാപിതാക്കൾ എന്നെ പ്രേരിപ്പിക്കാറുണ്ട്.
9. അസുഖം വരുമ്പോൾ എനിക്ക് ചികിത്സ കിട്ടാറുണ്ട്.
10. അറിവ് വർദ്ധിപ്പിക്കാനായി വിവിധ മാധ്യമങ്ങൾ മാതാപിതാക്കൾ ലഭ്യമാക്കി തരാറുണ്ട്.
11. ടെലിവിഷനിലെ വിദ്യാഭ്യാസ പരിപാടികൾ കാണാൻ എന്നെ മാതാപിതാക്കൾ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
12. എനിക്ക് നല്ല പഠന സാഹചര്യങ്ങൾ മാതാപിതാക്കൾ ഒരുക്കി തരാറുണ്ട്.
13. മേശ, കസേര, തുടങ്ങിയ പഠന സൗകര്യങ്ങൾ മാതാപിതാക്കൾ എനിക്ക് പ്രത്യേകം ഒരുക്കി തരാറുണ്ട്.
14. കാണും വെളിച്ചവുമുള്ള സ്ഥലം പഠിക്കാനായി മാതാപിതാക്കൾ എനിക്ക് ലഭ്യമാക്കി തന്നിട്ടുണ്ട്.
15. നല്ല വ്യക്തികളെ മാതൃകയാക്കാൻ മാതാപിതാക്കൾ എന്നെ സഹായിക്കാറുണ്ട്.
16. മനുജ്ജവർ ചെയ്യുന്ന നല്ല പ്രവൃത്തികൾ കണ്ടു മനസ്സിലാക്കാൻ മാതാപിതാക്കൾ പറയാറുണ്ട്.

APPENDIX C 13

SCALE OF FAMILY PSYCHOLOGICAL NURTURANCE (Final)

നിർദ്ദേശങ്ങൾ

വ്യക്തിത്വത്തിന്റെ പരിപോഷണത്തിനും നല്ല ശീലങ്ങൾ വളർത്തിയെടുക്കുന്നതിനും വേ 1 മാതാപിതാക്കൾ നിങ്ങളെ എത്രമാത്രം സഹായിക്കുകയും അവസരം നൽകുകയും ചെയ്യുന്നു എന്നതിനെ സംബന്ധിച്ച പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടു . പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. വ്യക്തിത്വം കാത്തുസൂക്ഷിക്കണമെന്ന് മാതാപിതാക്കൾ എന്ന ഉപദേശിക്കാറുണ്ട്.
2. മനുജളവരുടെ ന്യായമായ ആവശ്യങ്ങൾ അംഗീകരിക്കാൻ മാതാപിതാക്കൾ എന്ന പ്രേരിപ്പിക്കാറുണ്ട്.
3. മനുജളവരുടെ സന്തോഷവും സങ്കടവും എന്റേതെന്ന പോലെ കാണാൻ മാതാപിതാക്കൾ എന്ന പരിശീലിപ്പിക്കാറുണ്ട്.
4. പഠനത്തിൽ നല്ല നിലവാരം പുലർത്താൻ കഴിയുമെന്ന വിശ്വാസം മാതാപിതാക്കൾ എന്നിലുണ്ടാക്കിയിട്ടുണ്ട്.
5. കടമകൾ നന്നായി ചെയ്യാൻ കഴിയുമെന്ന ഉറപ്പ് മാതാപിതാക്കൾ എന്നിക്ക് നൽകാറുണ്ട്.
6. ഗാർഹികമായ ചില ജോലികൾ സ്വയം ചെയ്യിക്കുന്നതിലൂടെ എന്റെ ആത്മവിശ്വാസം മാതാപിതാക്കൾ വർദ്ധിപ്പിക്കാറുണ്ട്.
7. പഠനത്തിൽ വിജയംനേടാനുള്ള പ്രേരണ എന്റെ മാതാപിതാക്കൾ എപ്പോഴും നൽകാറുണ്ട്.
8. വിദ്യാഭ്യാസപരമായ നല്ല ലക്ഷ്യങ്ങൾ കൈവരിക്കേണ്ടതിന്റെ ആവശ്യകത മാതാപിതാക്കൾ പറഞ്ഞുതരാറുണ്ട്.
9. ക്ലാസ്സിൽ നല്ല നിലവാരം പുലർത്തണമെന്ന് മാതാപിതാക്കൾ എന്നോട് പറയാറുണ്ട്.
10. പരീക്ഷകളിൽ ഉയർന്ന വിജയം നേടുന്നതിന്റെ ഗുണം മാതാപിതാക്കൾ പറഞ്ഞുതരാറുണ്ട്.
11. അധ്യാപകർ ഇഷ്ടപ്പെടുന്ന വിദ്യാർത്ഥിയായി തീരാനുള്ള ഗുണങ്ങൾ മാതാപിതാക്കൾ പറഞ്ഞു തന്നിട്ടുണ്ട്.
12. പഠനത്തിൽ നല്ല നിലവാരം പുലർത്തണമെന്ന് മാതാപിതാക്കൾ പറയാറില്ല.
13. സാൽമാർഗികതയും സദാചാരബോധവും പാലിക്കേണ്ടതിന്റെ ആവശ്യകത മാതാപിതാക്കൾ മനസ്സിലാക്കി തന്നിട്ടുണ്ട്.
14. സമൂഹത്തിൽ മറഞ്ഞിരിക്കുന്ന ചതികളെയും അവയിൽ അകപ്പെടാതിരിക്കുവാനുള്ള മുൻകരുതലുകളെയും പന്തി മാതാപിതാക്കൾ പറഞ്ഞു തരാറുണ്ട്.
15. നല്ല വ്യക്തികളെ മാതൃകയാക്കാൻ മാതാപിതാക്കൾ പ്രേരിപ്പിക്കാറുണ്ട്.
16. സമൂഹത്തിൽ ഞാൻ ചെയ്യേണ്ട കടമകളെപ്പന്തി മാതാപിതാക്കൾ പറഞ്ഞുതരാറുണ്ട്.

17. വിദ്യാഭ്യാസപരമായ വാർത്തകളും പുതിയ അറിവുകളും എനിക്ക് വേണ്ടി മാതാപിതാക്കൾ ശ്രദ്ധരിക്കാറുണ്ട്.
18. ടി.വി.യിൽ വരുന്ന വിദ്യാഭ്യാസപരവും ആരോഗ്യപരവുമായ പരിപാടികൾ കാണാൻ മാതാപിതാക്കൾ പ്രേരിപ്പിക്കാറുണ്ട്.
19. സന്നദ്ധ സംഘടനകൾ സംഘടിപ്പിക്കുന്ന സെമിനാറുകളും വിദ്യാഭ്യാസ പരിപാടികളും കേൾക്കാൻ മാതാപിതാക്കൾ എന്നെ കൊണ്ടുപോകാറുണ്ട്.
20. വീട്ടിൽ വെച്ച് തന്നെ കഴിവുകൾ വളർത്തിയെടുക്കാനാവശ്യമായ അവസരവും പ്രോത്സാഹനവും മാതാപിതാക്കൾ നൽകാറുണ്ട്.
21. ഒരു പ്രവൃത്തിയും നന്നായി ചെയ്യാൻ എനിക്ക് കഴിവില്ല എന്ന് മാതാപിതാക്കൾ പറയാറുണ്ട്.
22. സമൂഹത്തിലെ നന്മ തിന്മകൾ തിരിച്ചറിയാൻ മാതാപിതാക്കൾ സഹായിക്കാറുണ്ട്.
23. അവധികാലങ്ങളിൽ ഹൃസ്വകാല കോഴ്സുകൾ പഠിക്കാൻ മാതാപിതാക്കൾ എന്നെ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.

**APPENDIX C14**

**SCALE OF FAMILY ENVIRONMENT (Final)**

**നിർദ്ദേശങ്ങൾ**

പാഠ്യപാഠ്യോതരപ്രവർത്തനങ്ങൾ നന്നായി കൊടുപോകുന്നതിൽ മാതാപിതാക്കളുടെ സ്വഭാവവും ഗൃഹാന്തരീക്ഷവും നിങ്ങൾക്ക് എത്രമാത്രം അനുകൂലമാണെന്നതിനെക്കുറിച്ചുള്ള ചില പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എന്റെ കുടുംബങ്ങൾ എല്ലാവരും തമ്മിൽ നല്ല മാനസിക ഐക്യമുണ്ട്.
2. മാതാപിതാക്കൾ എന്റെ ഏതുവുമൊരു നല്ല കൂട്ടുകാരാണ്.
3. ഏതു കാര്യവും മാതാപിതാക്കളോട് തുറന്ന് പറയാൻ എനിക്ക് സ്വാതന്ത്ര്യമുണ്ട്.
4. എനിക്കിഷ്ടമില്ലാത്ത പല കാര്യങ്ങളും മാതാപിതാക്കൾ എന്നിൽ അടിച്ചേൽപ്പിക്കാറുണ്ട്.
5. വീട്ടിൽ ഞങ്ങളെല്ലാവരും ഒരു നേരമെങ്കിലും ഒന്നിച്ചിരുന്ന് ഭക്ഷണം കഴിക്കാറുണ്ട്.
6. ഏതു കാര്യത്തിലെയും തീരുമാനവും ഞങ്ങൾ കുടുംബാംഗങ്ങളെല്ലാവരും ചർച്ചചെയ്തതിനു ശേഷമേ എടുക്കാറുള്ളൂ.
7. എന്റെ മാതാപിതാക്കൾ എന്നെ മനസ്സിലാക്കുന്നവരാണ്.
8. ചെറിയ കാര്യങ്ങൾക്ക്പോലും എന്റെ കുടുംബാംഗങ്ങൾ തമ്മിൽ കലഹിക്കാറുണ്ട്.
9. വളരെ ഉഷ്ണമായ അന്തരീക്ഷമാണ് എന്റെ വീട്ടിലുള്ളത്.
10. എന്റെ പഠനം കഴിഞ്ഞതിനുശേഷം ഗാർഹിക കാര്യങ്ങളിൽ ഞാൻ മാതാപിതാക്കളെ സഹായിക്കാറുണ്ട്.
11. ഏതു തൊഴിലിനും മഹത്വമുണ്ടെന്ന് മാതാപിതാക്കൾ പറഞ്ഞു തരാറുണ്ട്.
12. എന്റെ കുടുംബാംഗങ്ങൾ എല്ലാവരും ചിട്ടയോടുകൂടിയാണ് അവരവരുടെ ജോലികൾ ചെയ്യുന്നത്.
13. വളരെ ചിട്ടയായ ജീവിതരീതി ഉള്ളതുകൊണ്ട് സമയമില്ല എന്ന പരാതി എന്റെ വീട്ടിലാരും പറയാറില്ല.
14. വഴക്കുകൾ ഉണ്ടായാൽ എന്റെ കുടുംബാംഗങ്ങൾ ഒന്നിച്ചിരുന്ന് അത് പരിഹരിക്കാറുണ്ട്.
15. പ്രശ്ന പരിഹാരത്തിനായി എന്റെ കുടുംബങ്ങൾ വിട്ടുവീഴ്ച ചെയ്യാറുണ്ട്.

# APPENDIX C15

## SCALE OF AUTHORITATIVE PARENTING (Final)

### നിർദ്ദേശങ്ങൾ

മാതാപിതാക്കൾ നിങ്ങളെ വളർത്തുന്ന രീതിയുമായി ബന്ധപ്പെട്ട പ്രസ്താവനകളാണ് താഴെ കൊടുത്തിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. വളരെ സ്വതന്ത്ര്യത്തോടുകൂടിയാണ് മാതാപിതാക്കൾ എന്നെ വളർത്തുന്നത്.
2. എനിക്ക് ഇഷ്ടമില്ലാത്ത കാര്യങ്ങൾ മാതാപിതാക്കൾ എന്നിൽ അടിച്ചേൽപ്പിക്കാറില്ല.
3. എന്റെ അഭിപ്രായങ്ങൾ മാതാപിതാക്കൾ പരിഗണിക്കാറുണ്ട്.
4. എന്റെ മാതാപിതാക്കളെ ഞാൻ വളരെയധികം സ്നേഹിക്കുന്നു.
5. പഠിക്കാനാവശ്യമായ നല്ല അന്തരീക്ഷം മാതാപിതാക്കൾ ഒരുക്കി തരാറുണ്ട്.
6. മാതാപിതാക്കളുടെ ആഗ്രഹങ്ങൾ നിറവേറാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്.
7. എന്റെ ഒരു കാര്യങ്ങളിലും മാതാപിതാക്കൾ ശ്രദ്ധിക്കാറില്ല.
8. ഞാൻ പറയുന്ന ആവശ്യങ്ങളെല്ലാം മാതാപിതാക്കൾ നിരസിക്കുകയാണ് പതിവ്.
9. ഒഴിവു സമയങ്ങളിൽ ഞാനും മാതാപിതാക്കളും ഒരുമിച്ചിരുന്ന് സംസാരിക്കാറുണ്ട്.



**DEPARTMENT OF EDUCATION  
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**SCALE OF SCHOOL PROTECTIVE  
FACTORS**

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കുട്ടികളുടെ വ്യത്യസ്തങ്ങളായി ആവശ്യങ്ങളെ എത്രമാത്രം തൃപ്തിപ്പെടുത്തുന്നതാണ് പാഠ്യപദ്ധതി എന്നും അധ്യാപകർ കുട്ടികളുടെ പാഠ്യേതര കാര്യങ്ങളിൽ എത്രമാത്രം ശ്രദ്ധിക്കുന്നു എന്നുമുള്ള കാര്യങ്ങൾ അളക്കുന്നതിനുള്ള ഒരു മാനകമാണിത്. മേൽപറഞ്ഞ രണ്ട് മേഖലകൾക്കും പ്രത്യേകം ഉപമാനകങ്ങളും ഉത്തരസൂചികകളും നൽകിയിട്ടുണ്ട്. ഓരോ മേഖലയെയും അളക്കുന്നതിന് ഉപമാനകങ്ങൾ പ്രത്യേകം പ്രത്യേകമായോ, ഇവ രണ്ടും ഒന്നിച്ചോ ഉപയോഗിക്കാവുന്നതാണ്. ഓരോ മേഖലയിലെയും കാര്യങ്ങൾക്ക് പ്രത്യേകം മാർക്ക് നൽകേണ്ടതാണ്. ഇവ ക്ലാസിൽ നടത്തുന്നതിന് 10 മുതൽ 20 മിനുട്ട് വരെ നൽകാവുന്നതാണ്.

Scale of school protective factors is meant for measuring the 'curriculum adaptation to student diversity' and 'caring teachers'. In order to measure each area, separate scale is provided with appropriate response sheets. To measure each area, one can administer the scale separately or in combination and should provide separate score to each area. 10 to 20 minutes can be given for classroom administration.

**APPENDIX D1**

**SCALE OF CURRICULUM ADAPTATION TO STUDENT DIVERSITY (Draft)**

**നിർദ്ദേശങ്ങൾ**

നിങ്ങൾ ഓരോരുത്തരുടെയും സ്വഭാവത്തെയും സംസ്കാരത്തെയും എത്രമാത്രം പരിഗണിച്ചുകൊണ്ട് അധ്യാപകർ പഠിപ്പിക്കുന്നത് എന്നതിനെ സംബന്ധിച്ച പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എന്റെ സംസ്കാരത്തെയും സ്വഭാവത്തെയും പരിഗണിച്ചുകൊണ്ടാണ് അധ്യാപകർ പാഠഭാഗങ്ങൾ അവതരിപ്പിക്കാറുള്ളത്.
2. എന്റെ സംസ്കാര രീതിയെ അധ്യാപകർ മനസ്സിലാക്കുകയും ബഹുമാനിക്കുകയും ചെയ്യുന്നു.
3. പാഠഭാഗങ്ങളിൽ പ്രതിപാദിക്കുന്ന സംസ്കാരരീതികളെ എന്റേതുമായി താരതമ്യം ചെയ്യാൻ അധ്യാപകർ അവസരം നൽകാറുണ്ട്.
4. ഞങ്ങളുടെ സംസ്കാര രീതികളെ അധ്യാപകർ പരിഹസിക്കാറില്ല.
5. എനിക്ക് മനസ്സിലാക്കാൻ പറ്റുന്ന തരത്തിൽ അധ്യാപകർ പാഠഭാഗങ്ങൾ പറഞ്ഞു തരാറുണ്ട്.
6. പാഠഭാഗങ്ങൾ വ്യക്തമായി മനസ്സിലാവാൻ വേണ്ടി നിരവധി ഉദാഹരണങ്ങളും വിശദീകരണങ്ങളും അധ്യാപകർ നൽകാറുണ്ട്.
7. പാഠഭാഗം നന്നായി മനസ്സിലാക്കാനാവശ്യമായ മുന്നറിവുകൾ അധ്യാപകർ പറഞ്ഞു തരാറുണ്ട്.
8. എനിക്ക് അനുയോജ്യമായ പഠന തന്ത്രം ഉപയോഗിച്ചാണ് അധ്യാപകർ ക്ലാസ്സെടുക്കാറുള്ളത്.
9. പാഠഭാഗം പഠിക്കാനാവശ്യമായ മുന്നറിവ് എനിക്കുണ്ടെന്ന് അധ്യാപകർ ഉറപ്പുവരുത്താറുണ്ട്.
10. പാഠഭാഗവുമായി ബന്ധപ്പെട്ട് വിദ്യാർത്ഥികളെകൊണ്ട് അധ്യാപകർ സംഘടിപ്പിക്കുന്ന പ്രശ്നോത്തരികളിൽ പങ്കെടുക്കാൻ എനിക്ക് അവസരം ലഭിക്കാറുണ്ട്.
11. പാഠഭാഗവുമായി ബന്ധപ്പെട്ട കൂടുതൽ വിവരങ്ങൾ ശേഖരിക്കാൻ അധ്യാപകർ ആവശ്യപ്പെടാറുണ്ട്.
12. പത്രമാധ്യമങ്ങളിൽ വരുന്ന പുതിയ അറിവുകൾ ക്ലാസ്സിൽ പ്രദർശിപ്പിക്കാൻ അധ്യാപകർ പറയാറുണ്ട്.

### APPENDIX D2

### SCALE OF CARING TEACHERS (Draft)

#### നിർദ്ദേശങ്ങൾ

നിങ്ങളുടെ പാഠ്യപാഠ്യേതര പ്രവർത്തനങ്ങളിൽ അധ്യാപകർ എത്രമാത്രം ശ്രദ്ധയും താൽപര്യവും കാണിക്കുന്നു എന്നതിനെക്കുറിച്ചുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്നത് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് :..... ക്ലാസ്സ് :.....

1. എന്റെ അധ്യാപകരും ഞാനും തമ്മിൽ വളരെ നല്ല ബന്ധമുണ്ട്.
2. സ്കൂളിലേക്കുള്ള യാത്രയിൽ എനിക്ക് എന്തെങ്കിലും ബുദ്ധിമുട്ടുകൾ ഉണ്ടാകാറുണ്ടോ എന്ന് അധ്യാപകർ അന്വേഷിക്കാറുണ്ട്.
3. എന്റെ ഭക്ഷണ കാര്യങ്ങളെപ്പറ്റി അധ്യാപകർ ചോദിക്കാറുണ്ട്.
4. വ്യക്തിപരവും പഠനപരവുമായ പ്രശ്നങ്ങൾ അധ്യാപകരോട് പറയാൻ എനിക്ക് സ്വാതന്ത്ര്യമുണ്ട്.
5. എന്റെ പ്രശ്നങ്ങൾ മനസ്സിലാക്കി അനുയോജ്യമായ ഉപദേശങ്ങൾ അധ്യാപകർ നൽകാറുണ്ട്.
6. എന്റെ അധ്യാപകരെ കുടുംബത്തിലെ ഒരംഗത്തെപ്പോലെ ഞാൻ സ്നേഹിക്കുന്നു.
7. എന്റെ നല്ല ഗുണങ്ങളെ അധ്യാപകർ മാനിക്കാറുണ്ട്.
8. എന്റെ കഴിവുകളെ അധ്യാപകർ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
9. എന്റെ കുടുംബാംഗങ്ങളുടെ ക്ഷേമത്തെപ്പറ്റി അധ്യാപകർ അന്വേഷിക്കാറുണ്ട്.
10. അധ്യാപകർ എന്നെ ഉത്തരവാദിത്വങ്ങൾ ഏൽപ്പിക്കാറുണ്ട്.
11. എനിക്ക് ശാരീരികമോ മാനസികമോ ആയ ബുദ്ധിമുട്ടുകൾ ഉള്ളപ്പോൾ അധ്യാപകർ എന്നെ പ്രത്യേകം ശ്രദ്ധിക്കാറുണ്ട്.
12. എന്റെ അധ്യാപകർ പക്ഷപാതം കാണിക്കാറില്ല.
13. എന്നെ അധ്യാപകർ അവഗണിക്കാറുണ്ട്.
14. ഞാൻ ഏത് ചുമട്ടുപാടിൽ നിന്ന് വരുന്നു എന്നതിനെ ആശ്രയിക്കാതെ അധ്യാപകർ എന്നെ സ്നേഹിക്കുന്നു.
15. ഞങ്ങളെല്ലാവരും നല്ല കുട്ടികളാണെന്ന് അധ്യാപകർ അഭിപ്രായപ്പെടാറുണ്ട്.
16. പരീക്ഷകളിൽ ഞങ്ങളെല്ലാവരും നല്ല നിലവാരം പുലർത്തുമെന്ന പ്രതീക്ഷ അധ്യാപകർക്കുണ്ട്.
17. പാഠ്യപാഠ്യേതര വിഷയങ്ങളിലുള്ള എന്റെ വിജയങ്ങളെ അധ്യാപകർ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
18. പാഠഭാഗവുമായി ബന്ധപ്പെട്ട അനുബന്ധ വിവരങ്ങൾ അധ്യാപകർ നൽകാറുണ്ട്.
19. പാഠഭാഗങ്ങൾ പഠിപ്പിച്ചശേഷം അതിനെക്കുറിച്ച് കൂടുതൽ വിവരങ്ങൾ ശേഖരിക്കാൻ അധ്യാപകർ ആവശ്യപ്പെടാറുണ്ട്.
20. പാഠ്യവസ്തു മനസ്സിലാക്കാനാവശ്യമായ നിരവധി പാഠാനുഭവങ്ങൾ അധ്യാപകർ നൽകാറുണ്ട്.
21. ശാസ്ത്ര വിഷയങ്ങളിൽ പരീക്ഷണങ്ങൾ ചെയ്യാനാവശ്യമായ നിർദ്ദേശങ്ങൾ അധ്യാപകർ നൽകാറുണ്ട്.
22. ശാസ്ത്ര പരീക്ഷണങ്ങൾ അധ്യാപകർ ക്ലാസ്സിൽ ചെയ്ത് കാണിക്കാറുണ്ട്.
23. പാഠഭാഗത്തെക്കുറിച്ച് വിവിധ സ്രോതസ്സുകളിൽ നിന്ന് വിവരങ്ങൾ ശേഖരിച്ച് ക്ലാസ്സിൽ അവതരിപ്പിക്കാൻ അധ്യാപകർ സഹായിക്കാറുണ്ട്.
24. പാഠഭാഗവുമായി ബന്ധമുള്ള പ്രകൃതിയിലെ പ്രതിഭാസങ്ങൾ നിരീക്ഷിക്കാനും കുറിപ്പ് തയ്യാറാക്കാനും അധ്യാപകർ നിർദ്ദേശിക്കാറുണ്ട്.
25. പാഠഭാഗത്തെക്കുറിച്ച് പുതിയ അറിവുകൾ ശേഖരിക്കുന്നതിന്റെ പ്രയോജനത്തെക്കുറിച്ച് അധ്യാപകർ പറഞ്ഞുതരാറുണ്ട്.
26. എന്റെ കഴിവുകളും കഴിവില്ലായ്മകളും തിരിച്ചറിയാൻ അധ്യാപകർ സഹായിക്കാറുണ്ട്.

## **APPENDIX D3**

### **SCALE OF CURRICULUM ADAPTATION TO STUDENT DIVERSITY (Draft)**

#### **Instructions**

The following statements are related with extent your teachers consider your character and culture while teaching. Each statement is provided with 5 answers in the response sheet. Read the statements carefully to decide to what extent they appear right to you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

1. Teachers present the contents with due consideration to my culture and behaviours.
2. Teachers understand and respect my cultural styles.
3. Teachers provide opportunities to compare my culture to that prescribed in the text book.
4. Teachers do not tease our cultural styles.
5. Teachers transact the contents in a way which can be assimilated by me easily.
6. Teachers provide a number of examples and explanations to clearly understand the content area.
7. Teachers relate the content with the previous knowledge to assimilate the idea clearly.
8. Teachers use the teaching strategies suitable to me.
9. Teachers provide pre-requisites essential for learning the given content.
10. I get opportunities to participate in the quiz programmes organized by students under the supervision of teachers.
11. Teachers instruct to collect further information connected with given content.
12. Teachers encourage exhibiting news reports in the class.

## **APPENDIX D4**

### **SCALE OF CARING TEACHERS (Draft)**

#### **Instructions**

The following statements are related with the care and interest extended by your teachers in your curricular and co-curricular activities. Each statement is provided with 5 answers in the response sheet. Read the statements carefully to decide to what extent they appear right to you and mark your answer using (X) sign in the appropriate column provided in the response sheet.

1. There is a very good relationship between me and my teachers.
2. Teachers do enquire about difficulties in my journey to school.
3. Teachers do enquire about my diet.
4. I have the freedom to open up my personal and academic problems to my teachers.
5. Teachers suitably advice me by understanding my problems.
6. I love my teachers as I do my family members.
7. Teachers respect my qualities.
8. Teachers encourage my abilities.
9. Teachers enquire about the welfare of my family members.
10. Teachers assign responsibilities to me.
11. Teachers provide special care when I suffer physically or mentally.
12. My teachers do not practice partiality.
13. Teachers avoid me.
14. My teachers love me irrespective of my background.
15. Teachers have an opinion that we all are good children.
16. My teachers have expectation that all of us will perform well in the examinations.
17. Teachers encourage my success on both academic and non-academic subjects.
18. Teachers provide additional knowledge connected on the topic.
19. Teacher's advice to collect more information related with the topic.
20. Teachers provide a number of learning experiences in order to assimilate the content.
21. Teachers provide proper instructions for experiments in science subjects.
22. Teachers demonstrate scientific experiments in the classroom.
23. Teachers help to collect the information from different sources and present the same in the class room.
24. Teachers instruct to observe and make notes on the natural phenomena related with the content.
25. Teachers exhort collecting new information related with the learning content.
26. Teachers help to realize my potentialities and weaknesses.

**APPENDIX D5**

**SCALE OF SCHOOL PROTECTIVE FACTORS**

**RESPONSE SHEET**

പേര് : ..... ക്ലാസ്സ് : .....

നമ്പർ	പൂർണ്ണ മായും ശരി യാണ്	ഏറെകുറെ ശരിയാണ്	അറിഞ്ഞു കൂട	തെറ്റാണ്	പൂർണ്ണ മായും തെറ്റാണ്
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**APPENDIX D6**  
**ITEM DISCRIMINATION VALUES ( $\alpha$ ) OF SELECTED**  
**ITEMS IN SCALE OF SCHOOL PROTECTIVE FACTORS**

Curriculum Adaptation to Student Diversity		Caring Teachers	
1	11.47	1	9.09
2	11.67	2	11.19
3	11.00	3	11.44
4	8.33	4	11.14
5	11.98	5	12.92
6	10.02	6	11.71
7	10.34	7	13.03
8	11.13	8	11.54
9	12.19	9	10.28
10	11.60	10	13.06
11	9.76	11	12.75
12	11.07	12	10.05
		*13	6.33
		14	12.97
		15	9.13
		16	8.78
		17	10.54
		18	11.14
		19	8.73
		20	9.35
		21	8.43
		22	6.87
		23	8.94
		24	8.51
		25	9.21
		26	12.79

Note : Items with ‘\*’ marks are deleted from the final scale after try out

**APPENDIX D7****FACTORIAL VALIDITY OF SCALES OF SCHOOL PROTECTIVE FACTORS**

Scale of curriculum adaptation of student diversity	Factor loading*	Scale of caring teachers	Factor loading*
1	.461	1	.516
2	.664	2	.531
3	.569	3	.507
4	.489	4	.594
5	.610	5	.643
6	.606	6	.542
7	.611	7	.687
8	.586	8	.637
		9	.540
9	.597	10	.634
10	.423	11	.660
11	.588	12	.550
12	.535	13	.633
		14	.498
		15	.499
		16	.672
		17	.626
		18	.533
		19	.609
		20	.599
		21	.441
		22	.593
		23	.467
		24	.566
		25	.655

\*Extraction method principal component analysis; only one component extracted; N=478

## APPENDIX D8 SCALE OF CURRICULUM ADAPTATION TO STUDENT DIVERSITY (Final)

**നിർദ്ദേശങ്ങൾ**

നിങ്ങൾ ഓരോരുത്തരുടെയും സ്വഭാവത്തെയും സംസ്കാരത്തെയും എത്രമാത്രം പരിഗണിച്ചുകൊണ്ട് അധ്യാപകർ പഠിപ്പിക്കുന്നത് എന്നതിനെ സംബന്ധിച്ച പ്രസ്താവനകളാണ് താഴെ തന്നിട്ടുള്ളത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്നത് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എന്റെ സംസ്കാരത്തെയും സ്വഭാവത്തെയും പരിഗണിച്ചുകൊണ്ടാണ് അധ്യാപകർ പാഠഭാഗങ്ങൾ അവതരിപ്പിക്കാറുള്ളത്.
2. എന്റെ സംസ്കാര രീതിയെ അധ്യാപകർ മനസ്സിലാക്കുകയും ബഹുമാനിക്കുകയും ചെയ്യുന്നു.
3. പാഠഭാഗങ്ങളിൽ പ്രതിപാദിക്കുന്ന സംസ്കാര രീതികളെ എന്റേതുമായി താരതമ്യം ചെയ്യാൻ അധ്യാപകർ അവസരം നൽകാറുണ്ട്.
4. ഞങ്ങളുടെ സംസ്കാര രീതികളെ അധ്യാപകർ പരിഹസിക്കാറില്ല.
5. എനിക്ക് മനസ്സിലാക്കാൻ പറ്റുന്ന തരത്തിൽ അധ്യാപകർ പാഠഭാഗങ്ങൾ പറഞ്ഞു തരാറുണ്ട്.
6. പാഠഭാഗങ്ങൾ വ്യക്തമായി മനസ്സിലാവാൻ വേണ്ടി നിരവധി ഉദാഹരണങ്ങളും വിശദീകരണങ്ങളും അധ്യാപകർ നൽകാറുണ്ട്.
7. പാഠഭാഗം നന്നായി മനസ്സിലാക്കാനാവശ്യമായ മുന്നറിവുകൾ അധ്യാപകർ പറഞ്ഞു തരാറുണ്ട്.
8. എനിക്ക് അനുയോജ്യമായ പഠനതന്ത്രം ഉപയോഗിച്ചാണ് അധ്യാപകർ ക്ലാസ്സെടുക്കാറുള്ളത്.
9. പാഠഭാഗം പഠിക്കാനാവശ്യമായ മുന്നറിവ് എനിക്കുണ്ടെന്ന് അധ്യാപകർ ഉറപ്പുവരുത്താറുണ്ട്.
10. പാഠഭാഗവുമായി ബന്ധപ്പെട്ട് വിദ്യാർത്ഥികളെക്കൊണ്ട് അധ്യാപകർ സംഘടിപ്പിക്കുന്ന പ്രശ്നോത്തരികളിൽ പങ്കെടുക്കാൻ എനിക്ക് അവസരം ലഭിക്കാറുണ്ട്.
11. പാഠഭാഗവുമായി ബന്ധപ്പെട്ട കൂടുതൽ വിവരങ്ങൾ ശേഖരിക്കാൻ അധ്യാപകർ ആവശ്യപ്പെടാറുണ്ട്.
12. പത്രമാധ്യമങ്ങളിൽ വരുന്ന പുതിയ അറിവുകൾ ക്ലാസ്സിൽ പ്രദർശിപ്പിക്കാൻ അധ്യാപകർ പറയാറുണ്ട്.

## APPENDIX D9 SCALE OF CARING TEACHERS (Final)

### നിർദ്ദേശങ്ങൾ

നിങ്ങളുടെ പാഠ്യപാഠ്യേതര പ്രവർത്തനങ്ങളിൽ അധ്യാപകർ എത്രമാത്രം ശ്രദ്ധയും താൽപര്യവും കാണിക്കുന്നു എന്നതിനെക്കുറിച്ചുള്ള പ്രസ്താവനകളാണ് താഴെ തന്നിരിക്കുന്നത്. ഓരോ പ്രസ്താവനയ്ക്കും ഉത്തരസൂചികയിൽ 5 ഉത്തരങ്ങൾ തന്നിട്ടുണ്ട്. പ്രസ്താവനകളോരോന്നും ശ്രദ്ധാപൂർവ്വം വായിച്ച് അവ നിങ്ങളെ സംബന്ധിച്ചിടത്തോളം എത്രമാത്രം ശരിയാണെന്ന് ഉത്തരസൂചികയിൽ (X) അടയാളം ഉപയോഗിച്ച് രേഖപ്പെടുത്തുക.

പേര് : ..... ക്ലാസ്സ് : .....

1. എന്റെ അധ്യാപകരും ഞാനും തമ്മിൽ വളരെ നല്ല ബന്ധമുണ്ട്.
2. സ്കൂളിലേക്കുള്ള യാത്രയിൽ എനിക്ക് എന്തെങ്കിലും ബുദ്ധിമുട്ടുകൾ ഉണ്ടാകാറുണ്ടോ എന്ന് അധ്യാപകർ അന്വേഷിക്കാറുണ്ട്.
3. എന്റെ ഭക്ഷണ കാര്യങ്ങളെപ്പറ്റി അധ്യാപകർ ചോദിക്കാറുണ്ട്.
4. വ്യക്തിപരവും പഠനപരവുമായ പ്രശ്നങ്ങൾ അധ്യാപകരോട് പറയാൻ എനിക്ക് സ്വാതന്ത്ര്യമുണ്ട്.
5. എന്റെ പ്രശ്നങ്ങൾ മനസ്സിലാക്കി അനുയോജ്യമായ ഉപദേശങ്ങൾ അധ്യാപകർ നൽകാറുണ്ട്.
6. എന്റെ അധ്യാപകരെ കുടുംബത്തിലെ ഒരംഗത്തെപ്പോലെ ഞാൻ സ്നേഹിക്കുന്നു.
7. എന്റെ നല്ല ഗുണങ്ങളെ അധ്യാപകർ മാനിക്കാറുണ്ട്.
8. എന്റെ കഴിവുകളെ അധ്യാപകർ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
9. എന്റെ കുടുംബാംഗങ്ങളുടെ ക്ഷേമത്തെപ്പറ്റി അധ്യാപകർ അന്വേഷിക്കാറുണ്ട്.
10. അധ്യാപകർ എന്നെ ഉത്തരവാദിത്വങ്ങൾ ഏൽപ്പിക്കാറുണ്ട്.
11. എനിക്ക് ശാരീരികമോ മാനസികമോ ആയ ബുദ്ധിമുട്ടുകൾ ഉള്ളപ്പോൾ അധ്യാപകർ എന്നെ പ്രത്യേകം ശ്രദ്ധിക്കാറുണ്ട്.
12. എന്റെ അധ്യാപകർ പക്ഷപാതം കാണിക്കാറില്ല.
13. ഞാൻ ഏത് ചുരുപാടിൽ നിന്ന് വരുന്നു എന്നതിനെ ആശ്രയിക്കാതെ അധ്യാപകർ എന്നെ സ്നേഹിക്കുന്നു.
14. ഞങ്ങളെല്ലാവരും നല്ല കുട്ടികളാണെന്ന് അധ്യാപകർ അഭിപ്രായപ്പെടാറുണ്ട്.
15. പരീക്ഷകളിൽ ഞങ്ങളെല്ലാവരും നല്ല നിലവാരം പുലർത്തുമെന്ന പ്രതീക്ഷ അധ്യാപകർക്കുണ്ട്.
16. പാഠ്യപാഠ്യേതര വിഷയങ്ങളിലുള്ള എന്റെ വിജയങ്ങളെ അധ്യാപകർ പ്രോത്സാഹിപ്പിക്കാറുണ്ട്.
17. പാഠഭാഗവുമായി ബന്ധപ്പെട്ട അനുബന്ധ വിവരങ്ങൾ അധ്യാപകർ നൽകാറുണ്ട്.
18. പാഠഭാഗങ്ങൾ പഠിപ്പിച്ചശേഷം അതിനെക്കുറിച്ച് കൂടുതൽ വിവരങ്ങൾ ശേഖരിക്കാൻ അധ്യാപകർ ആവശ്യപ്പെടാറുണ്ട്.
19. പാഠ്യവസ്തു മനസ്സിലാക്കാനാവശ്യമായ നിരവധി പാഠാനുഭവങ്ങൾ അധ്യാപകർ നൽകാറുണ്ട്.
20. ശാസ്ത്ര വിഷയങ്ങളിൽ പരീക്ഷണങ്ങൾ ചെയ്യാനാവശ്യമായ നിർദ്ദേശങ്ങൾ അധ്യാപകർ നൽകാറുണ്ട്.
21. ശാസ്ത്ര പരീക്ഷണങ്ങൾ അധ്യാപകർ ക്ലാസ്സിൽ ചെയ്ത് കാണിക്കാറുണ്ട്.
22. പാഠഭാഗത്തെക്കുറിച്ച് വിവിധ സ്രോതസ്സുകളിൽ നിന്ന് വിവരങ്ങൾ ശേഖരിച്ച് ക്ലാസ്സിൽ അവതരിപ്പിക്കാൻ അധ്യാപകർ സഹായിക്കാറുണ്ട്.
23. പാഠഭാഗവുമായി ബന്ധമുള്ള പ്രകൃതിയിലെ പ്രതിഭാസങ്ങൾ നിരീക്ഷിക്കാനും കുറിപ്പ് തയ്യാറാക്കാനും അധ്യാപകർ നിർദ്ദേശിക്കാറുണ്ട്.
24. പാഠഭാഗത്തെക്കുറിച്ച് പുതിയ അറിവുകൾ ശേഖരിക്കുന്നതിന്റെ പ്രയോജനത്തെക്കുറിച്ച് അധ്യാപകർ പറഞ്ഞുതരാറുണ്ട്.

25. എന്റെ കഴിവുകളും കഴിവില്ലായ്മകളും തിരിച്ചറിയാൻ അധ്യാപകർ സഹായിക്കുന്നുണ്ട്.

## **APPENDIX E1 BATTERY OF TEACHER MADE TESTS OF ACHIEVEMENT**

എട്ടാം ക്ലാസ്സിന്റെ ആരംഭത്തിൽ വിദ്യാർത്ഥികൾക്ക് മലയാളം, ഇംഗ്ലീഷ്, അടിസ്ഥാന ശാസ്ത്രം, സാമൂഹ്യശാസ്ത്രം, ഗണിതം എന്നീ വിഷയങ്ങളിൽ നിലവിലുള്ള അറിവ് പരിശോധിക്കുന്നതിനുള്ള ഒരു ശോധകമാണിത്. മേൽ പറഞ്ഞ ഓരോ വിഷയത്തിനും വെച്ചേറെയായി ഭാഗങ്ങൾ നൽകിയിട്ടുണ്ട്. ഈ ഓരോ ഭാഗവും ഒരു ക്ലാസ്സ് പീരിയഡിൽ (45 മിനുട്ട്) കുട്ടികൾക്ക് പൂർത്തിയാക്കാവുന്നതാണ്. നിർദ്ദേശം നൽകുന്നതിന് 5 മിനുട്ട് ഉപയോഗിക്കാം. ഓരോ ഭാഗത്തിന്റെയും മാർക്ക് അതാതുഭാഗത്ത് സൂചിപ്പിച്ചിട്ടുണ്ട്.

ഭാഗം 1 - മലയാളം

ഭാഗം 2 - ഇംഗ്ലീഷ്

ഭാഗം 3 - അടിസ്ഥാനശാസ്ത്രം

ഭാഗം 4 - സാമൂഹ്യശാസ്ത്രം

ഭാഗം 5 - ഗണിതം

## APPENDIX E1

### ACHIEVEMENT TEST IN MALAYALAM

Time : 45 Minutes

Total Marks : 20

നിർദ്ദേശം: 1 മുതൽ 14 വരെയുള്ള ചോദ്യങ്ങൾക്ക് ഒറ്റ വാക്കിൽ ഉത്തരമെഴുതുക. 16, 17 ചോദ്യങ്ങളിൽ 3 കവികളുടെയും പേര് ഉൾപ്പെടുത്തേണ്ടതാണ്. പതിനെട്ടാമത്തെ ചോദ്യത്തിൽ 4 സാഹിത്യകാരന്മാരുടെ പേര് ഉൾപ്പെടുത്തണം. പത്തൊൻപതാമത്തെ ചോദ്യത്തിന് ഒരു ഖണ്ഡികയിൽ ഓണത്തെക്കുറിച്ച് വിവരണം തയ്യാറാക്കുക.

1. ലോക ഫുട്ബോളിന്റെ ഇതിഹാസം?
2. പയ്യോളി എക്സ്പ്രസ്?
3. കുചേലവൃത്തം വഞ്ചിപ്പാട്ട് എഴുതിയതാര്?
4. ഭാഗവതം ദശമസ്കന്ധത്തെ ആസ്പദമാക്കി ചെറുശ്ലോരി രചിച്ച കൃതി?
5. മഴമുകിൽ പെൺകൊടി എഴുതിയതാര്?
6. ശാന്തയുടെ കർത്താവ്?
7. നീർമാതളം പൂത്തകാലം ആരുടെ കൃതി?
8. ഭുവനക്ക് ഒന്നാം സ്ഥാനം നേടിക്കൊടുത്ത ചിത്രത്തിന്റെ പേര്?
9. പൊക്കമില്ലായ്മയാണെന്റെ പൊക്കം എന്ന് പാടിയ കവി?
10. ലോകത്തെ കാണാൻ മൂന്നുദിനങ്ങൾ ആരുടെ ആത്മകഥയിലെ ഭാഗമാണ്?
11. പി. എന്ന ചുരുക്കപ്പേരിലറിയപ്പെടുന്ന മഹാകവി?
12. മഹാകാവ്യമെഴുതാതെ മഹാകവിയായി അറിയപ്പെടുന്നതാര്?
13. ഭൂമിയുടെ അവകാശികൾ എഴുതിയതാര്?
14. പരീക്കുട്ടി ഏത് കൃതിയിലെ കഥാപാത്രമാണ്?
15. ഭീമനെ കേന്ദ്രകഥാപാത്രമാക്കി എഴുതിയ നോവൽ? ( $\frac{1}{2} \times 15 = 7\frac{1}{2}$ )
16. ആധുനിക കവിത്രയം ആരെല്ലാം? (3 x 1 = 3)
17. പ്രാചീന കവിത്രയം ആരെല്ലാം? (3 x 1 = 3)
18. ജ്ഞാനപീഠപുരസ്കാരം നേടിയ സാഹിത്യകാരന്മാര്? ( $1\frac{1}{2} \times 1 = 1\frac{1}{2}$ )
19. ഓണത്തെക്കുറിച്ച് ചെറുവിവരണം തയ്യാറാക്കുക. (5 x 1 = 5)

**ACHIEVEMENT TEST IN ENGLISH**

Time : 45 Minutes

Total Marks : 20

**Instructions: Read the questions carefully and fill up the blanks using the correct word provided in brackets. For 11<sup>th</sup> question prepare a self description in 5 sentences**

1. The police questioned many people  
Begin the sentence with 'many people'
2. There was a quarrel ..... Raju and Ramu  
(with, between, among). Fill up the blank with the correct one.
3. You can read this .....  
(easy, easily, easier). Complete the sentence with correct word. (1 x 3 = 3)
4. Sajith is ten year old. Vijay is eight year old.  
Combine the sentence using 'young'. (2 x 1 = 2)
5. Principal ordered. You must pay the fees tomorrow. So we \_\_\_\_\_  
pay it tomorrow. (2 x 1 = 2)  
(should, must, have to)
6. Mahatma Gandhi ..... in 1869.  
(was born, born, had born). (1 ½ x 1 = 1 ½)  
**Use the correct verb form to fill up the blank.** (2 x 1 = 2)
7. There are two ..... in bag. One knife is sharper than the other.  
Complete the sentence with plural form of knife. (1 x 1 = 1)
8. a/ vast/ India/ country/ is  
Make a meaningful sentence (2 x 1 = 2)
9. Ravi got a lottery. He wish to buy a new car.  
Change the sentence using 'going to'. (2½ x 1 = 2½)
10. He cries. They .....  
Use the correct form of verb in the blank space. (1 x 1 = 1)
11. Write five sentences about yourself. (5 x 1 = 5)

**ACHIEVEMENT TEST IN BASIC SCIENCE**

Time 45 minutes

Total Marks: 20

നിർദ്ദേശം: 1 മുതൽ 8 വരെയുള്ള ചോദ്യങ്ങൾക്ക് അനുയോജ്യമായ പദം ഉപയോഗിച്ച് വിട്ടഭാഗം പൂരിപ്പിക്കുക.

1. ടാൽകം പൗഡറിൽ അടങ്ങിയിരിക്കുന്ന പ്രധാന ഘടകം \_\_\_\_\_ ആണ്.
2. സ്വർണ്ണത്തിന്റെ ശുദ്ധത അളക്കുന്ന യൂണിറ്റ് \_\_\_\_\_
3. വിനാമിൻ A യുടെ അഭാവം മൂലമുണ്ടാകുന്ന രോഗം \_\_\_\_\_ ആണ്
4. ശുദ്ധജലത്തിന്റെ pH മൂല്യം \_\_\_\_\_
5. ഒരു വസ്തുവിന്റെ ചലനത്തെ പ്രതിരോധിക്കുന്ന ബലമാണ് \_\_\_\_\_
6. കൃത്രിമമായി പഴങ്ങൾ പഴുപ്പിക്കാൻ ഉപയോഗിക്കുന്ന പദാർത്ഥം \_\_\_\_\_ ആകുന്നു.
7. ചുവന്ന ലിന്മസിനെ നീലനിറമാക്കുന്ന വഴുവഴുപ്പുള്ള പദാർത്ഥം \_\_\_\_\_ ആണ്.
8. നമ്മുടെ ശരീരത്തിലെ ഏതൊരു വലിയ ജ്ഞാനേന്ദ്രിയം \_\_\_\_\_ ആണ്.

(1/2 X 8 = 4)

9 മുതൽ 14 വരെയുള്ള ചോദ്യങ്ങൾക്ക് ഒറ്റവാക്കിൽ ഉത്തരം എഴുതുക

9. ഹൈഡ്രജൻ കണ്ടുപിടിച്ചതാര്?
10. വിസരണം എന്നാലെന്ത്?
11. പാലിലെ വെള്ളത്തിന്റെ സാന്നിധ്യം കണ്ടുപിടിക്കാനുപയോഗിക്കുന്ന ഉപകരണം ഏത്?
12. വിനാമിൻ B യുടെ കുറവ് കൊണ്ടുണ്ടാകുന്ന ഒരു രോഗം?
13. ഊർജ്ജം അളക്കുന്ന യൂണിറ്റ് ഏത്?
14. സൂര്യപ്രകാശത്തിന്റെ സാന്നിധ്യത്തിൽ താക്കിൽ ഉൽപാദിപ്പിക്കപ്പെടുന്ന വിനാമിൻ ഏത്?

(1/2 X 6 = 3)

15 മുതൽ 18 വരെയുള്ള ചോദ്യങ്ങൾക്ക് കുറിപ്പ് തയ്യാറാക്കുക.

15. വിനാമിൻ A, B, C, K എന്നിവയുടെ ഓരോ ധർമ്മം എഴുതുക.
16. ജഡത്വം എന്നാലെന്ത്? ഉദാഹരണം എഴുതുക.
17. ഇലക്ട്രോ സ്ക്രീനിംഗ് എന്നാലെന്ത്?
18. ഉപ്പിലിട്ട മാങ്ങ ചുളുങ്ങുന്നു. കാരണം എന്ത്?

(2 X 4 = 8)

വിശദമാക്കുക

19. ചാലനം, സംവഹനം, വികിരണം എന്നിവ ഉദാഹരണ സഹിതം വിശദമാക്കുക.

(5 X 1 = 5)

## ACHIEVEMENT TEST IN SOCIAL SCIENCE

Time : 45 Minutes

Total Marks : 20

നിർദ്ദേശം: 1 മുതൽ 5 വരെയുള്ള ചോദ്യങ്ങൾക്ക് ഒറ്റവാക്കിൽ ഉത്തരമെഴുതുക. 6 മുതൽ 10 വരെയുള്ള ചോദ്യങ്ങൾക്ക് അനുയോജ്യമായ കുറിപ്പ് തയ്യാറാക്കുക.

1. സ്വാതന്ത്രസമരത്തിൽ പങ്കെടുത്ത് വീരചരമം പ്രാപിച്ച വനിത?
2. കേരളഗാന്ധി എന്നറിയപ്പെടുന്നതാര്?
3. ഗാന്ധിജി ജനിച്ച വർഷം ഏത്?
4. സാക്ഷരതയിൽ ഏറ്റവും പിന്നോക്കം നിൽക്കുന്ന രാജ്യം ഏത്?
5. നൈലിന്റെ ദാനം എന്നറിയപ്പെടുന്ന രാജ്യം ഏത്? (1 x 5 = 5)
6. ജന്മി-കുടിയാൻ ബന്ധം വിശദമാക്കുക. (3 x 1 = 3)
7. നദികൾ നേരിടുന്ന ഭീഷണികൾ എന്തെല്ലാം? (2 x 1 = 2)
8. രാജഭരണവും ജനാധിപത്യഭരണവും താരതമ്യം ചെയ്യുക. (3 x 1 = 3)
9. ജലഗതാഗതത്തിന് കരമാർഗത്തേക്കാൾ മെച്ചമുണ്ടോ? ഉണ്ടെങ്കിൽ എന്തെല്ലാം? (2 x 1 = 2)
10. കടൽക്കാറ്റും കരക്കാറ്റും താരതമ്യം ചെയ്യുക. (5 x 1 = 5)

### ACHIEVEMENT TEST IN MATHEMATICS

Time : 45 Minutes

Total Marks : 20

നിർദ്ദേശം: താഴെതന്നിട്ടുള്ള ചോദ്യങ്ങൾ ശ്രദ്ധയോടെ വായിച്ച് തന്നിട്ടുള്ള ഉദാഹരണങ്ങളുടെ സഹായത്തോടുകൂടി ഉത്തരങ്ങൾ കണ്ടെത്തുക.

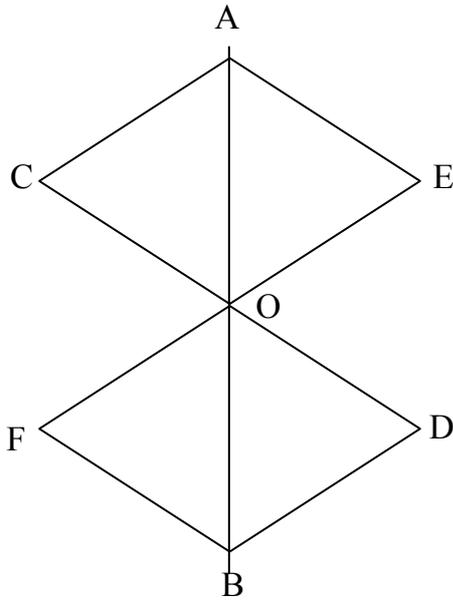
1.  $I \times I = 1$   
 $II \times II = 121$   
 $III \times III = \dots\dots\dots$   
 $IIII \times IIII = \dots\dots\dots$   
 $IIII \times IIII = \dots\dots\dots$   
 തന്നിട്ടുള്ള ഉദാഹരണം ശ്രദ്ധിച്ച് വിട്ടഭാഗം പൂരിപ്പിക്കുക. ഗുണനഫലത്തിന്റെ പ്രത്യേകത എന്ത്? (4x1=4)

2.  $2^1 \ 2^2 \ 2^3 \ 2^4 \ 2^5 \ 2^6 \ 2^7 \ 2^8 \ 2^9 \ 2^{10} \ 2^{11}$   
 $2 \ 4 \ 8 \ 16 \ 32 \ 64 \ 128 \ 256 \ 512 \ 1024 \ 2048$   
 മുകളിൽ തന്നിട്ടുള്ള പട്ടിക ഉപയോഗിച്ച് താഴെ തന്നിരിക്കുന്നവയുടെ ഉത്തരം കണ്ടുപിടിക്കുക  

1. $4 \times 32$	4. $512 \div 32$
2. $8 \times 256$	5. $2048 \div 256$
3. $32 \times 64$	6. $1024 \div 28$

(6x1=6)

3. രണ്ട് ജോടി എതിർകോണുകൾ കണ്ടെത്തുക  
 ഉദാഹരണം  $\angle COA = \angle BOD$



(3x1=3)

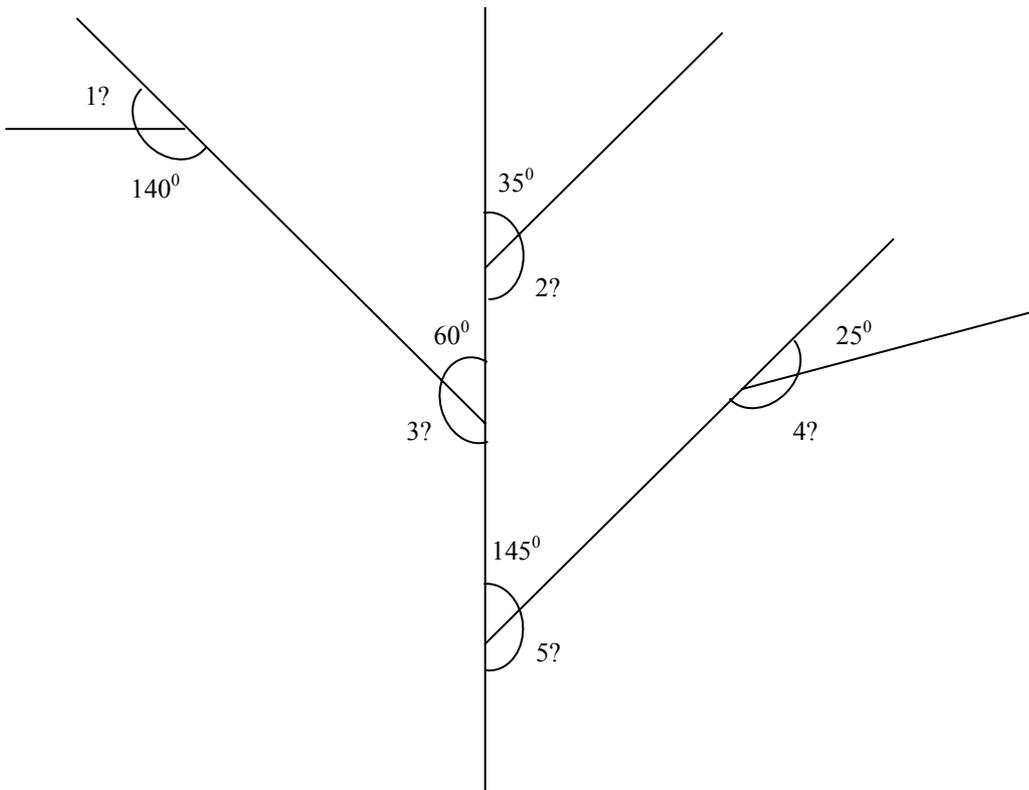
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4. താഴെ തന്നിട്ടുള്ള ബീജഗണിത വാചകത്തെ ഭാഷാവാചകമായും ഭാഷാവാചകത്തെ ബീജഗണിതവാചകമായും മാറ്റി എഴുതുക.

1.  $5x + 3$

2. ഒരു സംഖ്യയുടെ ഏഴ് മടങ്ങിൽ നിന്ന് രണ്ട് കുറച്ചത്  $(2 \times 1 = 2)$

5. അനീഷിന് ടീച്ചർ കൊടുത്ത ഗൃഹപാഠത്തിന്റെ പകുതി ഭാഗം അവൻ ചെയ്തു. ബാക്കി പകുതി നിങ്ങൾക്ക് കണ്ടെത്താമോ?  $(5 \times 1 = 5)$



**APPENDIX E2  
BATTERY OF TEACHER MADE TESTS OF  
ACHIEVEMENT**

**ANSWER KEY AND MARKING SCHEME**

**MALAYALAM**

1. പെലെ
2. പി.ടി. ഉഷ
3. രാമപുരത്തുവാരിയർ
4. കൃഷ്ണഗാഥ
5. കടമ്മനിട്ട രാമകൃഷ്ണൻ
6. പി. ഭാസ്കരൻ
7. കമലാസുരയ്യ
8. അമ്മ കോയ്യന്നു
9. കുഞ്ഞുണ്ണിമാഷ്
10. ഹെലൻ കെല്ലർ
11. പി. കുഞ്ഞിരാമൻ നായർ
12. കുമാരനാശാൻ
13. വൈക്കം മുഹമ്മദ് ബഷീർ
14. ചമ്മീൻ
15. രണ്ടാംമുഴം
16. ആശാൻ, ഉള്ളൂർ, വള്ളത്തോൾ
17. ചെറുശ്ശേരി, എഴുത്തച്ഛൻ, കുഞ്ചൻ നമ്പ്യാർ
18. ജി. ശങ്കരകുറുപ്പ്, എസ്. കെ. പൊന്നക്കാട്, തക്ഷി ശിവശങ്കരപിള്ള, എം. ടി. വാസുദേവൻ നായർ
19. ദേശീയോത്സവം, മഹാബലിയും വാമനനും, അത്തചമയം, പൂക്കളം, സദ്യ, കലാപരിപാടികൾ.

**ANSWER KEY AND MARKING SCHEME  
ENGLISH**

1. Many people were questioned by the police.
2. between
3. easily
4. Vijay is younger than Sajith
5. have to
6. was born
7. Knives
8. India is a vast country
9. Ravi got a lottery and he is going to buy a car.

- 10. Cried
- 11. Name, family members, occupation, hobbies

**ANSWER KEY AND MARKING SCHEME**  
**BASIC SCIENCE**

- 1. മഗ്നീഷ്യം സിലിക്കേറ്റ്
- 2. കാരറ്റ്
- 3. നിശാസത
- 4. 7
- 5. ഘർഷണം
- 6. കാൽസ്യം കാർബൈഡ്
- 7. ആൽക്കലി
- 8. താക്ക്
- 9. കാവൻഡിഷ്
- 10. പ്രകാശം വസ്തുക്കളിൽ തട്ടി ചിതറിത്തരിക്കുന്നത്
- 11. ലാക്ടോമീറ്റർ
- 12. ബെറിബെറി
- 13. ജൂൾ/കലോറി
- 14. വിറ്റാമിൻ D
- 15. വിറ്റാമിൻ A - കാഴ്ചശക്തി  
 വിറ്റാമിൻ B - രോഗപ്രതിരോധശേഷി  
 വിറ്റാമിൻ C - ത്വക്കിന്റെ സംരക്ഷണം  
 വിറ്റാമിൻ D - രക്തം കട്ടപിടിക്കൽ
- 16. അസന്തുലിതമായ ബാഹ്യബലം പ്രയോഗിക്കുന്നത്വരെ സ്ഥിരാവസ്ഥയിലുള്ള വസ്തു സ്ഥിരാവസ്ഥയിലും നേർരേഖയിൽ ചലിക്കുന്ന വസ്തു നേർരേഖയിലും തുടരുന്ന അവസ്ഥ.  
 ഉദാ: ഓടിക്കൊ റിക്കുന്ന ബസിൽ നിൽക്കുന്നയാൾ ബസ് നിർത്തുമ്പോൾ മുന്നോട്ടായുന്നത്.
- 17. വൈദ്യുതിയുടെ സഹായത്തോടെ ഒരു വസ്തുവിൽ മറ്റൊരു ലോഹം പുശു ന്നത്.
- 18. എക്സോസ്മോസിസ്, ജലം, അതിന്റെ ഗാഢത കൂടിയ ഭാഗത്ത് നിന്നും ഗാഢത കുറഞ്ഞ ഭാഗത്തേക്ക് അർദ്ധതാര്യ സ്തരത്തിലൂടെ പ്രവഹിക്കുന്നു.
- 19. ചാലനം - തന്മാത്രാ ചലനമില്ലാതെ താപപ്രവാഹം  
 ഉദാ: - ഇരുമ്പ് ദണ്ഡ് ചൂടാക്കുന്നത്  
 സംവഹനം - തന്മാത്രാചലനത്തോടെ താപപ്രവാഹം  
 ഉദാ: - വെള്ളം തിളക്കുന്നത്  
 വികിരണം - മാധ്യമത്തിന്റെ സഹായമില്ലാതെ താപപ്രവാഹം  
 ഉദാ: - സൂര്യപ്രകാശം ഭൂമിയിലെത്തുന്നത്

**ANSWER KEY AND MARKING SCHEME  
SOCIAL SCIENCE**

1. ഡോൺസീ റാണി
2. ഗാസിജി
3. 1869
4. ഈജിപ്ത്
5. ബീഹാർ
6. **ജന്മിമാർ**

അക്കാലത്ത് ജന്മിമാർ ആഡംബരപൂർണ്ണമായ ജീവിതമാണ് നയിച്ചിരുന്നത്. ഭൂമിയുടെ ഉടമസ്ഥാവകാശം ജന്മിമാർക്കായിരുന്നു. പാട്ടം, മിച്ചവാരം തുടങ്ങിയ നികുതികൾ കർഷകരിൽ നിന്നും പിരിച്ചെടുത്തിരുന്നു.

**കർഷകൻ**

ദാരിദ്ര്യപൂർണ്ണമായ ജീവിതമാണ് നയിച്ചിരുന്നത്. പകലന്തിയോളം പാടത്ത് പണിയെടുക്കുന്ന കർഷകന് കയറിക്കിടക്കാൻ സ്വന്തമായി ഒരു കൂര പോലും ഉണ്ടായിരുന്നില്ല. ജന്മിമാരിൽ നിന്ന് കടുത്ത ശിക്ഷാനടപടികളെ നേരിടേണ്ടി വന്നിരുന്നു.

7. ജലമലിനീകരണം, നിർമ്മാണ പ്രവർത്തനങ്ങൾ, മണൽവാരൽ
8. ജനങ്ങൾക്ക് പരിപൂർണ്ണ അധികാരമുള്ള ഭരണസംവിധാനമാണ് ജനാധിപത്യം. ഭരണാധികാരികളെ തിരഞ്ഞെടുക്കാനുള്ള സ്വാതന്ത്ര്യം ജനങ്ങൾക്കാണ്. ജനാധിപത്യത്തിൽ ജനങ്ങളുടെ അഭിപ്രായങ്ങളെ മാനിക്കുന്നു.

രാജഭരണത്തിൽ പൂർണ്ണ അധികാരം രാജാവിനാണ്. ജനങ്ങളുടെ അഭിപ്രായങ്ങളെ മാനിക്കുന്നില്ല. രാജഭരണം പരമ്പരാഗതമാണ്.

9.
  1. ചെലവ് കുറവ്
  2. കൂടുതൽ ചരക്കുകൾ (ഭാരം) കയറ്റാം
  3. താരതമ്യേന മലിനീകരണം കുറഞ്ഞ സംവിധാനമാണ് ജലഗതാഗതം
10. പകൽ കര വേഗത്തിൽ ചൂടാകുന്നു. അതിനാൽ കരയിലെ വായു ചൂട് പിടിച്ച് വികസിക്കുന്നു. അപ്പോൾ കടലിന് മുകളിലെ വായുമർദ്ദം കരയിലുള്ളതിനേക്കാൾ കൂടുതലായിരിക്കും. കടലിൽ നിന്നും കരയിലേക്ക് വീശുന്ന കാറ്റാണ് കടൽക്കാറ്റ്.

രാത്രിസമയത്ത് കര വേഗം തണുക്കുന്നു. കരക്ക് മുകളിലുള്ള വായുമർദ്ദം കടലിനുമുകളിലുള്ളതിനേക്കാൾ കൂടുതലായിരിക്കും. കരയിൽ നിന്ന് കടലിലേക്ക് വീശുന്ന കാറ്റ് കരക്കാറ്റ്.

**ANSWER KEY AND MARKING SCHEME  
MATHEMATICS**

**1. പ്രവർത്തനം I**

$111 \times 111 = 12321$

$1111 \times 1111 = 1234321$

$1111 \times 11111 = 123454321$

**തുക**

9

16

25

ഗുണനഫലത്തിന്റെ അക്കങ്ങളുടെ തുക ഗുണനഫലത്തിന്റെ നടുവിൽ വരുന്ന സംഖ്യയുടെ വർഗ്ഗമാണ്.

**2. പ്രവർത്തനം II**

(a)  $4 \times 32 = 2^2 \times 2^5 = 2^7 = 128$

(b)  $8 \times 256 = 2^3 \times 2^8 = 2^{11} = 2048$

(c)  $32 \times 64 = 2^5 \times 2^6 = 2^{11} = 2048$

(d)  $512 \div 32 = 2^9 \div 2^5 = 2^{9-5} = 2^4 = 16$

(e)  $2048 \div 256 = 2^{11} \div 2^8 = 2^{11-8} = 2^3 = 8$

(f)  $1024 \div 128 = 2^{10} \div 2^7 = 2^{10-7} = 2^3 = 8$

**3. പ്രവർത്തനം III**

(a)  $\angle AOE, \angle BOF$

(b)  $\angle COF, \angle EOD$

**4. പ്രവർത്തനം IV**

ഒരു സംഖ്യയുടെ 5 മടങ്ങിനോട് 3 കൂട്ടിയത്.

$7x - 2$

**5. പ്രവർത്തനം V**

1)  $180^\circ - 140^\circ = 40^\circ$

2)  $180^\circ - 35^\circ = 145^\circ$

3)  $180^\circ - 60^\circ = 120^\circ$

4)  $180^\circ - 25^\circ = 155^\circ$

5)  $180^\circ - 145^\circ = 35^\circ$



**APPENDIX F1**

**DEPARTMENT OF EDUCATION  
UNIVERSITY OF CALICUT**

**LESSON TRANSCRIPTS FOR FOSTERING ACADEMIC  
RESILIENCE  
(English Translation)**

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(Research Scholar)

**Introduction**

The programme consisted of twelve activity units and two to four lessons under each of them. As in any other programme, logical and sequential arrangement of phases was heart of effective implementation of the resilience fostering programme. As in other classroom instructional practices, lessons on resilience also has pre-teaching, teaching, and post-teaching phases. Each lesson was completed within forty minutes. In all lessons, emphasis was given to one or more protective factors which led to the development of academic resilience in students.

**Organization of the lesson**

Objective familiarizes the learner about the protective factors that have to be inculcated in them to achieve the general objective. Statement of objective also indicates the components that constitute the protective factor. In a single lesson, more than one protective factor is included. For e.g.; in a lesson, “Eliciting Information from Others through Interview” one objective was stated as, to develop” social competence” in students through improving their communication skills. Focus restates the specific objectives of the lesson from a process perspective; focusing the participants attention to the specific abilities and behaviours that the learners are going to acquire in order to develop the protective factors. Feature indicates the special characteristics of the given learning activity. The most important observable aspects of the classroom activity are highlighted. Characteristics of the student’s behaviour and that of learning activity may be different during a single lesson in order to achieve the objective.

Readiness stage creates the set. Although students are intrinsically motivated to learn and do the work related to their schooling, an extrinsic motivation is necessary to maintain the energy level and aspirations to complete the actions. Facilitator incorporates some interesting techniques to ignite both the mental and physical readiness in children, to make the students get ready to start the work. Orientating students about the activity is much significant in successful completion of the activity, because they will get a direction and idea about the work they are going to do. Students become self-disciplined and start to plan something in their mind about how to behave during the lesson. Organization clarifies whether the

activity is a group work or individual work and also indicates whether the activity is an indoor or outdoor one. Task gives a detailed description of the activity that is to be carried out in the classroom. It visualizes all the activities the students are doing to secure the goal they formulated prior to starting of the activity. Unique phases of each learning activity are described under self-descriptive headings. It also includes how the Facilitator is positively interfering the students to promote their “I have”; “I can”; and “I am” qualities that constitutes the language of resilience.

Shared reflections give opportunity for self-evaluation and appraisal of the students and are useful in assimilating the outcomes of the activity. During shared reflections every student in the classroom will be benefitted from the understanding shared by other students. Students will realize that their “I am” qualities have improved; indicating their successful adaptation and improved self-image. Questions by the Facilitator will be the platform for conducting shared reflections. Students in groups discuss and arrive at their own conclusions and record the same in work book as the abilities gained by them. Post-script included in all lessons is a Facilitator perspective on shared reflections; tracing how the students are walking along the path of resilience. This concluding element of the lesson comment on the feasibility, practical problems, and Facilitator’s own reflection about the activity operationally.

Physical arrangement of the classroom was changed into horse shoe shape in order to attain maximum flexibility which is a characteristic of resilience promoting classrooms.

## **1. A NEW BEGINNING TO MAKE THE STUDENTS FLEXIBLE**

### **Objectives**

1. To develop social competence in students by improving their flexibility, empathy and communication skills.
2. To develop problem solving skill in students by helping them to think critically and reflectively.
3. To develop autonomy in students through improving their internal locus of control and self-efficacy beliefs.
4. To develop sense of purpose in students by promoting their goal direction, educational aspiration, achievement motivation and spiritual connectedness.

### **Features**

1. Organisation of groups in class.
2. Selection of a recorder in each group.
3. Conduction of discussion on the points provided by Facilitator.
4. Presentation of findings by each group.
5. Consolidation of the findings.

### **Organization**

1. Organization of group work in the class to conduct discussions on the provided points.
2. Consolidation of the findings as a whole class activity.

## **Lesson 1. Education, Faith and Parents**

### **Specific objectives**

1. To develop the ability to move between cultures.
2. To develop an ability to empathize with others.
3. To promote the communication skill in students.
4. To develop an ability to view things critically and creatively.
5. To develop an ability to modify the situations and persons to meet the needs.
6. To foster self-efficacy in students.
7. To develop a positive attitude towards goal direction, educational aspiration, achievement motivation and spiritual connectedness.

### **Focus**

1. Development of an ability to move between sub-cultures in order to foster social competence in students.
2. Development of an ability to understand the emotions and feelings of other persons to boost social competence in students.
3. Development of an ability to analyze things critically and reflectively to promote problem solving skill in students.
4. Development of an ability to modify the situations and behavior of the persons to satisfy one's needs and the development of self-efficacy beliefs in students to instill autonomy in students.
5. Development of a positive outlook about educational aspiration, achievement motivation, and spiritual connectedness in students to promote sense of purpose in students.

### **Orientation to students**

After a general introduction about the programme, its goals and activities facilitator came to the specific lesson.

Today we are going to do an valuable and interesting activity.. For the fruitful completion of the activity we have to show patience and co - operation. We have to be respectful to our friends' response and behaviours while doing the job. It may be good to understand the emotions of our friends. Please try to avoid

unnecessary talks. Doing this job will help you to widen your thoughts about studies and about your beliefs. Also you will be informed about the essence of all religions in the world.

### **Creating the set**

Facilitator conducted a quiz competition in class based on Indian history. Students were very much enthusiastic and co-operated well during the competition. Each bench of students in class was considered as a group and Facilitator herself played the role of quiz master. With these activity students was intellectually motivated to do an activity.

In presence of Facilitator, students divided themselves into different groups by counting 1 to 5. All the students who count one were assembled in one group and two in the second group and like that. Each group gathered at different places in the classroom. In each group with the help of the Facilitator, students selected a recorder to record their views. Then Facilitator provided some questions to all groups for discussion.

Questions are given below.

What is the significance of education?

What is the attitude of your parents on education?

What is my religious belief?

Students wrote the goals of their activity in advance in relation with the questions provided by Facilitator. Students started discussion. In groups, every student expressed their views about different aspects under discussion. Facilitator encouraged and helped students to carry out the activity effectively. Recorder in each group also expressed their views and recorded all the points.

### **Significance of Education**

Ideas presented by students for the first question i.e., what is the significance of education? are presented below.

*It will help to improve our life standards. We can learn different languages. Education is necessary to carry out the jobs in foreign countries. Through education we can acquire a lot of knowledge about which we are ignorant. We can reach heights. Education is an important part of our life.*

## 501 Fostering Academic Resilience

*Without education we cannot live in this era. Education helps us to go ahead. Education helps to discriminate virtues and evils, and right and wrong. Education improves our awareness about the world. To acquire a good job education is necessary. Education helps to understand the social issues. We can avoid bad habits with education. Education helps to teach others. Conceive the concept of education as our mother. We can develop good habits. We can understand how to behave in the society. We can acquire general knowledge. We can develop fine arts and sports abilities. Good habits like punctuality, discipline, and good character can be acquired through schooling. Education is the foundation of our development. Education helps to understand the world. Education helps to familiar with how to behave in society and about the way of living. We can become good human beings with the help of education. Education is the sea of knowledge.*

### **Attitude of Parents' on Education**

Ideas presented by students for the second question i.e., what is the attitude of your parents on education? are presented below.

*Parents provide all facilities for learning without considering their financial problems. They enquire about our studies and encourage us properly. Parents have good expectations about us. We will consider our parents. Parents suffer a lot for our well being. They will be happy if we reach at heights. Parents have a desire that we should learn than that of our parents. Parents expect that I will be provided with a good job in future. Parents always pray for our welfare. Parents buy good books for me to develop my knowledge. Parents arrange transportation facilities for us to reach school. Parents are happy about our studies. Parents positively interfere with our studies.*

**My Religious Belief**

Ideas presented by students for the third question i.e., what is my religious belief? are presented below.

*We have strong faith in all religious beliefs. Religious belief helps us to go ahead through education. In our class, students are from different religions. But we know that e should not show any discrimination on the basis of caste and religion. We will pray to God before starting any activity. Religions direct us to right way. We should follow the rituals of our religion. We are following the habit of daily prayer. Religious beliefs help us to overcome the difficulties. We should go to Mosque or to Temple once in a month. Essence of all religions is same. We should pray for everyone. Mere outward expressions are not the right belief, but it is the strong faith in God. Virtues, truth, patience, and purity are closely related to faith in God. We should respect all religions. We should pray for the welfare of the world.*

<p><u>ദ്രുവർത്തിയ അർപ്പണം</u></p> <p>വിദ്യാഭ്യാസത്തിന്റെ ലാഭം നേടാനും വിദ്യാഭ്യാസകാര്യങ്ങളിൽ കർമ്മങ്ങൾ ചെയ്യാനും ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്. വിദ്യാഭ്യാസം ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്. വിദ്യാഭ്യാസം ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്. വിദ്യാഭ്യാസം ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്.</p>	<p>വിദ്യാഭ്യാസകാര്യങ്ങളിൽ ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്. വിദ്യാഭ്യാസം ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്. വിദ്യാഭ്യാസം ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്.</p> <p>3. ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്. വിദ്യാഭ്യാസം ഏതെങ്കിലും മതപരമായ വിശ്വാസം നമുക്കുണ്ട്.</p>
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Important points emerged out of the discussion on religious faith was that *“if we have faith in religion we can extend our support to poor people, and can live with co-operation”*. Students concluded the discussion by highlighting the following dictums. *Matha Pitha Guru Daivam, and Mathamethayalum manushyan nanayal mathi*

## **Lesson 2. Widening the horizons**

### **Focus**

1. Development of an ability to understand the emotions and feelings of other persons to boost social competence in students.
2. Development of an ability to analyze things critically and reflectively to promote problem solving skill in students.
3. Development of an ability to modify the situations and behavior of the persons to satisfy one’s needs and the development of self-efficacy beliefs in students to instill autonomy in students.
4. Development of an ability to formulate a goal before starting an activity in order to foster sense of purpose in students.
5. Development of a positive outlook about educational aspiration, achievement motivation, and spiritual connectedness in students to promote sense of purpose in students.

Following completion of the discussion in lesson 1, each recorder read the collected points in class. All other students interacted with the recorder and with other group members on what is being read. After the presentation of findings by all groups, students analyzed the commonalities of their views. These common features also were recorded. Each recorder read aloud their conclusions to the whole class. Facilitator recorded these common features. If there was any controversy Facilitator helped them to negotiate this.

### **Shared reflections**

Each student is encouraged to make a self evaluation based on the common points they have identified after the activity. They analyzed whether they have achieved their pre formulated goals or not and reported that they have identified the



Students discussed these questions in groups and recorded their views in the work book and a model of the product of discussion is exhibited above. Facilitator moderated their discussion. All students were welcomed to express their views to the whole class.

*Considering the feelings and beliefs of others will help to develop understanding mentality, love, affection, service mindedness, good habits, cooperation, unity, and humility. Society became good with this. We can avoid conflicts in the society. We can lead a peaceful life. We should follow the fact, give respect and take respect. We should behave in a way that we expect from others. It will help to avoid the problems. Students reported that if we are respecting other persons' beliefs and emotions we can avoid problems and conflicts in life, and this attitude will help to adjust with the difficulties in life.*

*Students quoted the words of Tree Narayana Guru i.e., Oru Jathi, Oru Matham, Oru Daivam Manushyanu and they quoted Holy Bible with the words Sanmanasullavark samadanam while presenting their views.*

Facilitator consolidated views of students using the points viz., through education we can learn a number of languages, we will be able to acquire good jobs, we can help others with our knowledge, parents arrange all the facilities for learning, parents support in the learning processes, and all students have faith in religion, to wind up the lesson. Students are encouraged to practice the common aspects emerged out of discussion.

#### **Post-script**

The activity was very effective and really widened the views of students about education and religious faith. They have got a chance to analyze their parents' attitude towards their studies. This activity helped them to experience the happiness and satisfaction in accomplishing the pre-determined goal of an activity. Some of the responses regarding the religious belief were appreciated in the P.T.A meeting conducted in the school. This provided positive feedback to me and to my students. The activity was really fruitful.

## **2. PREPARING NORMS-HOW CAN WE DIRECT OUR LIFE?**

### **Objectives**

1. To develop social competence in students by giving them a chance to communicate with their friends.
2. To develop problem solving skill in students by encouraging them to think critically.
3. To develop autonomy in students by improving their self-efficacy.
4. To develop sense of purpose in students by building up their goal direction.
5. To develop personal characteristics in students to lead a good life.

### **Features**

1. Organization of dynamic groups in class.
2. Organization of group work to prepare norms.
3. Selection of recorder in each group.
4. Whole class activity to finalize the norms prepared by students.
5. Facilitator and students unanimously select a student to write the finalized norms on a paper and display in the class.
6. Discussion of the merits of following norms in life.

### **Organization**

Group activity meant for preparing norms.

Class activity for finalizing the norms prepared by students.

## **Lesson 3. Preparing Norms**

### **Specific objectives**

1. To develop ability in preparing norms for their life.
2. To develop ability to communicate effectively in groups.
3. To develop ability to think critically about their life.
4. To improve the self-efficacy belief of students.
5. To develop an ability to direct the life.
6. To develop sense of responsibility, dedication, and self-discipline in students.

### **Focus**

1. Improving the social competence in students by development of skill of effective communication to deal unfamiliar situations smoothly.
2. Fostering problem solving skill in students by development of critical thinking in students to find out something valuable to them.
3. Inculcating autonomy in students by development of self-efficacy in students to make aware them about their abilities.
4. Improving the sense of purpose in students by development of goal oriented outlook in students.

### **Orientation to students**

If we observe some persons and their life, we can see that they are very systematic, good tempered, punctual, and dedicated and so on in their life. Such good qualities help them to reduce their tensions and to lead a successful life. We can model them through out our life. This is not only the capability of the so called good people but we can also become like that. For that we have to follow some good qualities and values in our life. Today we are going to prepare the norms that we should follow in our life. Get ready to become law makers.

### **Creating the set**

Facilitator gave a news paper cutting to one of the students in class and asked him to read it aloud in the class. The report was about Mr. Padmanabhan who used

to provide awareness classes about Gandhism with particular emphasis on punctuality, respect, truth, love, non-violence, sacrifice, and prayer.

After reading the paper cutting, facilitator gave a brief description about the service rendered by the person and the importance of the values in life. Through this Facilitator conveyed the importance of following values and norms in life.

Facilitator divides the students into different groups based on mode of travelling to school. From the primary groups, secondary groups were formed through counting numbers from 1 to 5. Facilitator addressed the **law makers** and encouraged them to prepare norms that they have to follow in their classroom and at home. Students discussed in groups and clarified their doubts from Facilitator while preparing norms. Students raised a doubt that whether they can include the norms related to their personal and familial life in addition to academic life. Facilitator accepted the suggestion. Recorders in each group note down the norms prepared by their group members.

#### **Lesson 4. Finalizing and displaying the norms**

##### **Focus**

1. Improving the sense of purpose in students by developing goal oriented outlook in them.
2. Nurturing good personal characteristics in students by developing some personal factors in them.

After completing the preparation of norms, each group presents the prepared norms in class. Unanimously the students selected a recorder to write all the norms presented by the groups. Duplicated items were removed with the help of Facilitator. Students finalized the norms and recorder with the help of others, wrote down the finalized norms on two A4 sheets and displayed the same on the wall.

##### **The following is the list of finalized norms**

*Be disciplined*

*Clean the classroom and premises*

*Behave properly to Facilitators and friends*

*Concentrate on studies*

*Try our level best to improve the standard of curricular and extra-curricular activities*

*Do the home work properly and regularly*

*Keep the learning aids neatly*

*Be at the school on time*

*Follow the policies of school*

*Wear uniform neatly*

*Clarify the doubts*

*Extend our help to peers in learning subjects in which we have expertise*

*Attend the class regularly*

*Avoid the nuisance in the classroom*

*Follow truthfulness in life*

*Stay inside the compound wall of the school during interval*

*Help others*

*Respect elder people*

*Clean the hands before and after food*

*Drink boiled water only*

*Do not go to outside of the school without the permission of Facilitators*

*Go home without any delay after school time*

The whole class decided to follow the prepared norms in their daily life.

### **Shared reflections**

Facilitator provided questions for analyzing the completed activity.

Is this activity a valuable one?

What is the role of norms in reducing our risks in day to day life?

Students reported that they have achieved one goal of the activity viz., to find out the norms to be followed. The second goal i.e., to provide awareness to others will be carried out in coming days. Students reported that the activity was very much useful to them because following these norms will help

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them to lead a successful life. Some of these norms were familiar to them even before writing in the work book, but this activity helped them to realize the importance of these norms in life.

### **Post script**

The activity was very useful to the students. They opined that they will be able to do their work more systematically than before. The activity was appreciated in the school general body meeting too. Now, the whole school is following it. Willingness to follow the rules and being systematic is an indication of developing resilient characteristics in students.

### **3. ELICITING INFORMATION FROM OTHERS THROUGH INTERVIEW**

#### **Objectives**

1. To develop social competence in students by improving their communication skills and responsiveness.
2. To develop autonomy in students by enhancing their self-esteem and self-efficacy.
3. To inculcate personal and academic behaviours in students by encouraging them to do the activities.

#### **Features**

1. Organization of dynamic groups in the class.
2. Preparation of interview schedule by students themselves in groups.
3. Conduction of interview by students in real social settings.
4. Presentation and discussion of the collected information in the class.
5. Discussion of merits of the activity and the abilities gained by the students.

#### **Organization**

Group work in the classroom for selecting the theme and for preparing interview schedules.

Individual activity for conducting interview in real social settings.

## **Lesson 5. Identifying the local theme**

### **Specific objectives**

1. To develop the skill in conducting an interview.
2. To develop ability to communicate clearly and effectively.
3. To develop ability to change the persons to meet and satisfy one's needs.
4. To develop self-dependence in students to carry out the activities.
5. To develop self-confidence in students by conducting an activity in the real social setting.
6. To develop desirable personal and academic behaviours by conducting an activity independently.
7. To develop responsiveness in students.

### **Focus**

1. Development of ability to communicate clearly and effectively, to foster social competence in students.
2. Development of ability to change the persons to meet the demands required by students.
3. Development of self-dependence and self-confidence to foster autonomy in students.
4. Development of dedication, determination, hard work and time management.

### **Orientation to the students**

Friends, in our day to day life, we are speaking and communicating a lot in very many situations. Sometimes, knowingly or unknowingly we create problems due to the lack of ability of effective communication. All of us should develop the ability to communicate effectively and to elicit information from others. When we are facing unfamiliar situations in life, ability of effective communication will help us to handle the situation smoothly and to satisfy our needs. Correctly framed questions and good language are essential requirements to elicit information from others. Right information at the right time is very much useful to lead a successful life. Today, let us have training in eliciting information from others.

### **Creating the set**

Facilitator and students discussed about interviews students have witnessed from the television and radio. Facilitator elicited features of the interview from the students. Facilitator motivated students to conduct a mock interview. Two students came forward, one student acted as the interviewer and other student as the interviewee. They demonstrated an interview on some familial issues.

After winding up the interview, the class discussed how to conduct an interview and how to draw out the information from others. Facilitator explained that this ability is very much important in our daily and academic life, and when we are facing problems or unfamiliar situations. Facilitator prompted the students to conduct an interview in real social settings.

Facilitator : We all are enjoying the television and radio programmes in our daily life. What programmes are you interested in?

Students : Cinema, serials, songs, and cartoons.

Facilitator : OK, all these programmes provide enjoyment and entertainment. We are watching television and radio programmes with a motive of enriching our knowledge as well.

Students : Yes, we used to watch news programmes

Facilitator : Very good. Have you ever watched a person coming as a guest during the news programme and news reader asking questions to them to know something about the person and his/her activities?

Students : Yes. We have watched it many times.

Facilitator : What name can be given to such a programme in which one person asking questions to another one and eliciting information from the latter?

Students : Interview. We have watched the interview of film stars.

Facilitator : OK. I too am interested in watching such programmes. Now you think about an interview that you have watched and speak about its features.

Students : Two persons will be there. One person will ask questions and other one will reply to the questions.

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- Facilitator : Correct. What is the purpose of asking questions?
- Students : To know about the person.
- Facilitator : Good. If I am interested to know about Shahala and her whereabouts I should ask questions to Shahala Isn't it?
- Students : Yes.
- Facilitator : We can ask questions to persons to collect information from them. What will be the nature of the questions?
- Students : We should ask good questions.
- Facilitator : Very good. We should ask good questions. I will explain what "good" stands for in the context of an interview. I think all of you are familiar with some of them.
- Questions should be well structured. It should be specific and precise. Questions should be well worded in order to get the answer that we want. Do you follow such things in daily life?
- Students : Yes. We have used such questions while talking to Facilitators and friends.
- Facilitator : We have completed a discussion on how to conduct an interview. Now, is any one of you interested to demonstrate a mock interview in our class?

Two students come forward and conducted an interview. Questions were based on family matters.

- Facilitator : Good. You have conducted the interview well.
- Like this, we are talking lot about and communicate many things in our routine life. We are creating lot of problems in our life due to lack of ability to communicate effectively. Have you ever faced such situations in your life?
- Students : Yes. Parents will scold us due to our absurd questions.
- Facilitator : So all of us should develop an ability to communicate effectively and elicit information that we want from others. This will help us to easily manage the unfamiliar situations. Like your suggestion, we should ask well structured questions using appropriate language.

Right information at the right time is a blessing and this will help to win our life both in smooth and tough situations. It is an inevitable capacity that all of us should acquire during our life. Today we are going to train ourselves in eliciting information from others.

Facilitator told the students that before starting training in eliciting information from others, we have to divide the whole class members into different groups. Students divided into five groups based on their membership in various clubs organized in the school.

Facilitator addressed all the groups and helped them recollect how their friends have conducted an interview and how one person elicited information from the other. Facilitator is provided with the answer that “good “questions and language are essential to elicit correct information. Facilitator asked the students about their interesting area on which they ready to conduct the interview. Students indicated the names of different areas.

**Name of the themes**

1. Farmers and agriculture
2. Construction workers and their problems
3. Electricians and misuse of electricity
4. Military persons and their service
5. Youth co-ordinators and their work
6. Personal details of any one person in their village and his or her views about education and environmental pollution.

Facilitator accepted the answers and asked them to think about the practicability of interviewing those persons. Each group discussed the theme they have selected and arrived at the conclusion given below.

<b>Sl No.</b>	<b>Theme</b>	<b>Interview hints</b>
1	Farmers	Agronomic practices, types of fertilizers, type of seeds.
2	Construction workers	Risks faced by construction workers and types of building units.
3	Electricians	Tools used by electricians, and misuse of electricity.
4	Military persons	Service rendered by military persons and risks in their life.
5	Youth co-ordinator	Duties performed by youth co-ordinators.
6	A person in the village	Personal details, opinion about agriculture, education, and environmental pollution.

## **Lesson 6. Preparing the interview schedule**

### **Focus**

1. Fostering social competence in students by developing ability to communicate clearly and effectively.

Facilitator encouraged all the groups to prepare the interview schedule based on the theme they have selected. Students discussed in groups and prepared the questions suitable to elicit information from their target group. Facilitator provided positive suggestions and helped them to prepare well structured questions. All the questions were recorded in the work book. All groups prepared sufficient number of questions. Facilitator checked the schedule prepared by each group. A model of the interview shedule prepared by students is presented below

## അഭിപ്രായം

### ലക്ഷ്യം

അഭിപ്രായം സംഭാവന നൽകുന്നവരുടെ കൂട്ടായ്മ വഴി അഭിപ്രായം ഉൾപ്പെടുത്തുക.

മുൻ നമ്മുടെ ഉടമസ്ഥർ അഭിപ്രായം നൽകാൻ പോകുന്നതിന് മുമ്പേ തുടങ്ങിക്കൊടുക്കണം. നമ്മുടെ അഭിപ്രായം പരിചയപ്പെടണം.

- നിങ്ങളുടെ പേരടങ്ങിയത്?
- നിങ്ങളുടെ ജനനം?
- നിങ്ങളുടെ വിദ്യാഭ്യാസം <sup>പേരും എങ്ങനെ?</sup> ~~അതിന്റെ കാരണം?~~
- സാക്ഷരത്വം എത്ര വയസ്സായി?
- നിങ്ങളുടെ ഹൈസ്കൂൾ പേര്? കൃഷി ചെയ്യാൻ തുടങ്ങിയത്?

### വിദ്യാഭ്യാസപരമായ തിരുത്തലുകൾ

- സാക്ഷരത വിദ്യാഭ്യാസം ലഭിച്ചിട്ടുണ്ടോ എത്ര വയസ്സായി?
- വിദ്യാഭ്യാസം നൽകിയത് സാക്ഷരത അഭിപ്രായം?

### പരിഷ്കരിച്ച വിലയിരുത്തലിനെ തുടർച്ചയായി വിലയിരുത്തൽ

ഉപയോഗ്യമായ സാമഗ്രികളെല്ലാം ഉൾപ്പെടുത്തിയിട്ടുള്ളതായി അനുഭവിക്കാൻ അതിനുശേഷം പരിഷ്കരിച്ച വിലയിരുത്തലിൽ ഉൾപ്പെടുത്തിയിട്ടുള്ള ഉപയോഗ്യമായ വസ്തുക്കളുടെ പട്ടികയെ ഉപയോഗിച്ച് വിലയിരുത്തലിനെ പരിഷ്കരിക്കാൻ ഉപയോഗിക്കുക. തുടർച്ചയായി വിലയിരുത്തൽ അഭിപ്രായം ഉൾപ്പെടുത്തുക.

### പരിഷ്കരിച്ച

- നിങ്ങളുടെ ഹൈസ്കൂൾ വിഭാഗത്തിൽപ്പെട്ടത് കൃഷി ചെയ്യാൻ ഉപയോഗിക്കുക.
- തുടർച്ചയായി വിലയിരുത്തൽ സാക്ഷരത്വം നൽകുന്നതിന് ഉപയോഗിക്കുക.
- സാക്ഷരത്വം ഉൾപ്പെടുത്തിയിട്ടുണ്ടോ?

### സാക്ഷരത്വ പാഠ്യപുസ്തകം ഉപയോഗിക്കുന്നതിനുള്ള തിരുത്തലുകൾ

- സാക്ഷരത്വ പാഠ്യപുസ്തകം ഉപയോഗിക്കുന്നതിനുള്ള തിരുത്തലുകൾ
- ഉപയോഗ്യമായ കൃഷി ഉൾപ്പെടുത്തിയിട്ടുള്ളതായി ഉപയോഗിക്കുക. ഉപയോഗ്യമായ കൃഷി തിരുത്തലുകൾ അഭിപ്രായം ഉൾപ്പെടുത്തുക.
- ഉപയോഗ്യമായ കൃഷി ഉൾപ്പെടുത്തിയിട്ടുള്ളതായി ഉപയോഗിക്കുക. ഉപയോഗ്യമായ കൃഷി തിരുത്തലുകൾ അഭിപ്രായം ഉൾപ്പെടുത്തുക.
- ഉപയോഗ്യമായ കൃഷി ഉൾപ്പെടുത്തിയിട്ടുള്ളതായി ഉപയോഗിക്കുക. ഉപയോഗ്യമായ കൃഷി തിരുത്തലുകൾ അഭിപ്രായം ഉൾപ്പെടുത്തുക.

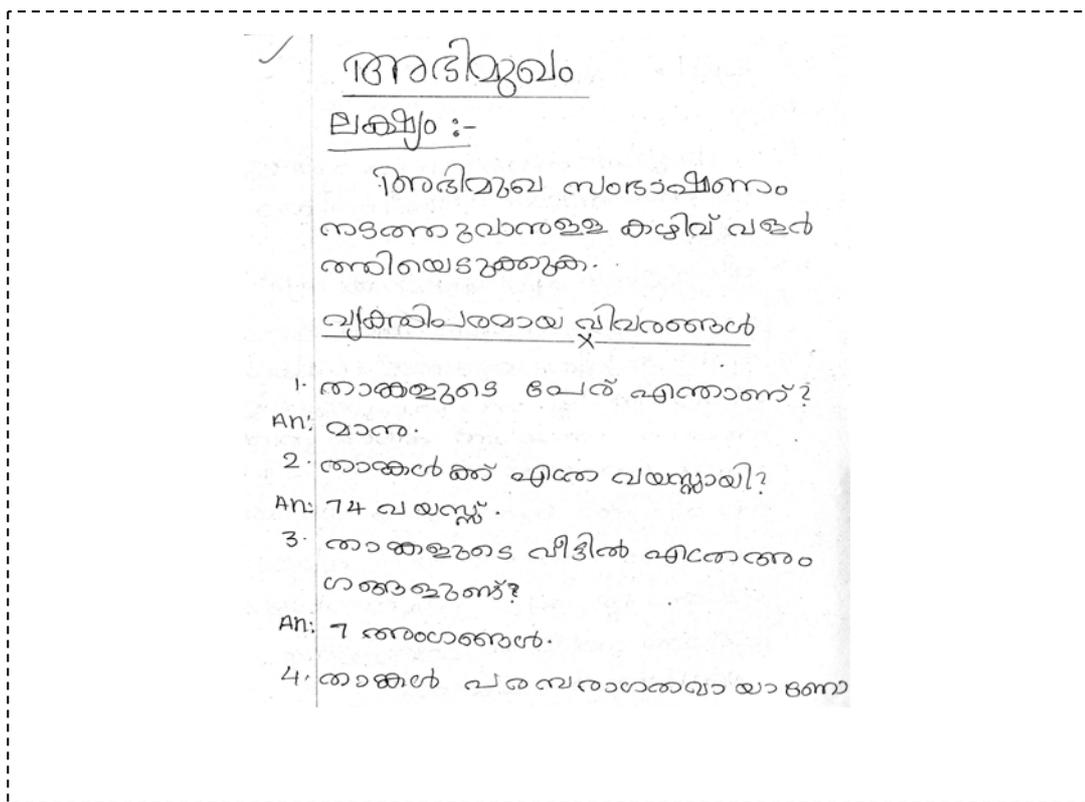
In the following lesson, the students conducted interview with various persons in the community using the prepared interview schedule.

### Lesson 7. Eliciting information on how they adapt-interface

#### Focus

1. Fostering social competence in students by developing ability to communicate clearly and effectively.
2. Development of an ability to modify the persons to meet the demands required by students, and development of self-dependence and self-confidence in order to foster autonomy in students.
3. Development of dedication, determination, hard work and time management.

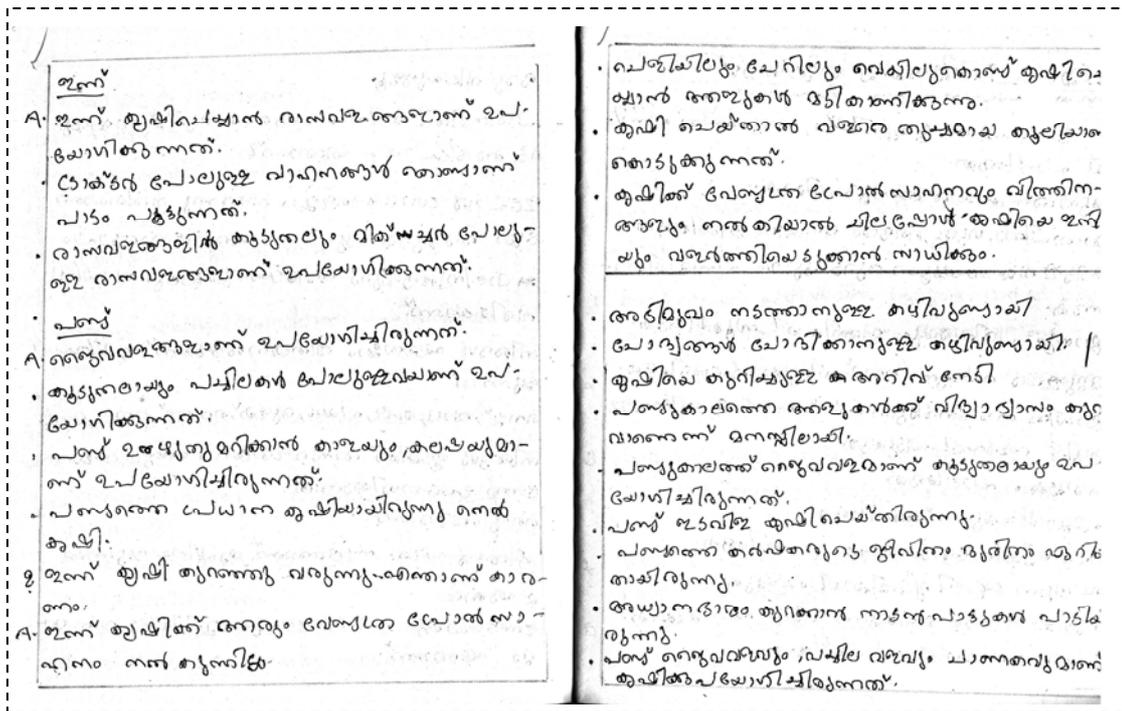
One week was allotted to all groups to conduct interview. Facilitator instructed the students that everyone should conduct the interview and bring their findings.











The products and conclusions from the interview, illustrated above, shows that students have conducted the interview with commitment and it helped them to gain self-confidence self-dependence, determination and time management.

**Lesson 8. Reporting the interview**

**Focus**

1. Fostering social competence in students by development of ability to communicate clearly and effectively.

One week after the planning phase, students bought their findings and presented the same in the class. Findings of one group are given below for a model.

Sl No.	Theme	Collected information
1	Farmers	Both ordinary and modern equipments, mostly biofertilizers, seeds like Jaya Annapoorna, Aryan, Chempav, Thavalakkannan, Vellari, Vellakkoli, and Chama, used to sing song for entertainment while working, and educational status is low.
2	Construction workers	Students reported that construction workers are suffering a lot of problems while working. They focused the falling off workers from buildings. Materials used are different types of stones, sand, and cement.

Sl No.	Theme	Collected information
3	Electricians	Here also students focused the hazards to life during work. We should conserve electricity by keeping modesty in its use. Emphasized switching off lights and fans when not needed.
4	Military person	Student reported that military persons are suffering a lot for our country and we should respect them.
5	Youth co-ordinator	Students reported that youth co-ordinators are doing a number of activities for the welfare of the panchayath.
6	Person around	Students interviewed house wives, madrassa Facilitator, and aged persons in their village and collected information on education, and environmental pollution. All the persons have positive attitude towards education and everyone was against pollution.

Whole class and Facilitator discussed about the information presented by the students. Students clarified their doubts while presenting the findings.

### Shared reflections

Facilitator provided questions to students for analysis.

How do you feel now after conducting an interview independently?

Is there any merit in achieving self-confidence in life?

Is there any merit in eliciting information from others?

Each group analyzed these questions and discussed it and recorded the points in the work book. All students were encouraged by the Facilitator to present their views. Students reported that

*they could realize and develop their communication skill and self-confidence after conducting interview and they got a chance to use appropriate questions to elicit the information from others. Increased self-confidence will help to lead a good life. If we have acquired an ability to elicit information from others it will help to handle unfamiliar situations and can clear doubts from*

*Facilitators. They also reported that it was a novel experience for them to realize their abilities by conducting the interview.*

**Post-script**

Transaction of the lesson “Eliciting Information from Others through Interview” was a fruitful and commendable activity. Students were very good at preparing interview schedules and conducting interface. Information gathered from different groups was very much useful to others in the class. Students were very much enthusiastic while presenting their collected information. These were indication of their improved communication skills, confidence, dedication and hard work. Four periods and an outdoor activity was required to complete the lesson. In routine school schedules, time allotment was a constraint.

#### **4. DEVELOPING THE ABILITIES TO PLAN THE LIFE**

##### **Objectives**

1. To develop ability to plan the activities in order to inculcate problem solving skill in students.
2. To develop ability of critical thinking in students to promote problem solving skill.
3. To develop a sense of task mastery and self-efficacy to promote autonomy in students.
4. To inculcate goal direction in students to develop sense of purpose in students.
5. To develop sense of responsibility, achievement oriented outlook, determination, self-discipline, and time management in students to pound personal and academic behaviours in students.

##### **Features**

1. Analysis of the previous week's work.
2. Discussion about the problem related with lack of planning.
3. Planning curricular, extra-curricular and domestic work one week in advance.
4. Evaluation of the scheduled programme for upcoming week.
5. Discussion and reflection about the merits of effective planning.

##### **Organization**

1. Individual work for analyzing the previous day's work.
2. Group work to discuss about the merits of planning.
3. Group work to prepare the plan for coming week.
4. Group work for analyzing the work completed in scheduled week.
5. Whole class activity for reflections.

## **Lesson 9. Analysis of previous week's work**

### **Specific objectives**

1. To develop an ability to plan the curricular, extra-curricular and domestic activities for leading a smooth life.
2. To develop an ability to critically analyze the merits of systematic planning and demerits of unordered activities.
3. To promote self-efficacy beliefs of students through planning and evaluating a task up to 100% independently.
4. To develop a positive attitude in students towards goal direction by setting and achieving a goal related to their work.
5. To develop responsibility, achievement oriented outlook, determination, self-discipline, and time management in students by planning their life by themselves.

### **Focus**

1. Development of the ability to plan the activities promote to problem solving skill in students.
2. Development of the ability to critically analyze the things to foster problem solving skill in students.
3. Development of self-efficacy in students by encouraging them to plan, implement and evaluate a programme independently in order to boost autonomy in them.
4. Development of the ability of goal setting and accomplishment to foster sense of purpose in students.
5. Development of an ability of planning and executing a programme independently to inculcate good personal and academic behaviours in students.

### **Orientation to students**

Friends, we are familiar with persons who frequently complain that "I am busy, I have no time to complete my work, oh God, what can I do?" Such kinds of people are always at-risk and they have no time to relax. What is the root reason behind this complaint? When we are observing such a person, we can understand that they are very poor in planning their work. Without proper thinking and planning, they will start many works and will not be able to complete any one effectively. It will trouble their life and inhibit their development. So everyone must learn to plan our life, academic works and other activities effectively. It will lead us to success. Today we are going to learn the usefulness of effective planning. You have the freedom to discuss, think and analyze your activities. Record your products in your work book.

### **Creating the set**

Facilitator energized the students by providing different Malayalam word puzzles to students. Facilitator motivated the students to solve the puzzle. Students very interestingly tried to complete the puzzle in groups.

Students co-operatively divided into five groups by themselves. Facilitator encouraged students to analyze their curricular, extra curricular and household activities in the previous week. In case of curricular and extra-curricular activities they can discuss and check their time table. Each student recorded it in the work book. Students are encouraged to discuss the time they had allotted for each activity.

Facilitator provided questions to all groups for analysis.

Have you felt any problem or hurry because of the absence of planning?

Any proposed activity left incomplete due to lack of planning?

Each group conducted a discussion the questions and recorded their answers whatever it may be in the workbook. All students were welcomed to present their views. Students reported that they had to face lot of problems due to lack of planning in life, particularly in academics like problem with half completed homework, inadequate time to prepare for test papers, scolding by Facilitators and like that. During such situations they were very much tensed and sad. Facilitator

consolidated the views by focusing on the problems of lack of planning in day to day life and invited the attention of students to prepare a plan.

### **Lesson 10. Preparing a plan of action for upcoming week**

#### **Focus**

1. Development of the abilities to plan the activities to promote problem solving skill in students.
2. Development of the ability to critically analyze the things to foster problem solving skill in students.
3. Development of self-efficacy in students by encouraging them to plan, implement and evaluate a programme independently to boost autonomy in them.
4. Development of the ability of goal setting and accomplishment to foster sense of purpose in students.
5. Development of ability to plan and execute a programme independently to inculcate good personal and academic behaviours in students.

After discussion Facilitator motivated each group to prepare a time schedule for their next week's activities including curricular, extra curricular and household activities with date and time.

Format is provided by Facilitator.

<b>Day</b>	<b>Time</b>	<b>Activities</b>			<b>Evaluation</b>
		Curricular	Extra-curricular	Domestic	

Students in groups prepared the plan from the class with the help of their school time table. Follow up of the activity will be continued in next week. Examples of worked out sheets prepared by students are given below.

രതസൂത്രണം വെച്ചുനടക്കുക			തീയതി	സമയം	പ്രവർത്തനങ്ങൾ	വിലയിരുത്തൽ
രതസൂത്രണം വെച്ചുനടക്കുക			12/20/09	9:30	സ്മാർട്ട് ലോഗിൻ ചെയ്തുകൊടുക്കുക	✓
തീയതി	സമയം	പ്രവർത്തനങ്ങൾ	വിലയിരുത്തൽ			
12/8/2009	6 AM	എത്തിച്ചേർന്നു. പ്രവർത്തനങ്ങൾ ചെയ്തുകൊടുക്കുക	✓	10 AM	പ്രവർത്തനം ചെയ്തുകൊടുക്കുക	
	6:15 AM	നിന്നിറങ്ങിപ്പോകുക	✓	10:15	പ്രവർത്തനം ചെയ്തുകൊടുക്കുക	
	6:30 AM	മുൻപായിച്ചേർന്നു	✓			
	7 AM	പ്രവർത്തനങ്ങൾ ചെയ്തുകൊടുക്കുക	✓			
	7:15 AM	പ്രവർത്തനങ്ങൾ ചെയ്തുകൊടുക്കുക	✓			
	8 AM	പ്രവർത്തനങ്ങൾ ചെയ്തുകൊടുക്കുക	✓			
	8:15	പ്രവർത്തനങ്ങൾ ചെയ്തുകൊടുക്കുക	✓			
	8:30	സ്മാർട്ട് ലോഗിൻ ചെയ്തുകൊടുക്കുക	✓			
	9:40	സ്മാർട്ട് ലോഗിൻ ചെയ്തുകൊടുക്കുക	✓			

തീയതി	സമയം	പ്രവർത്തനങ്ങൾ	വിലയിരുത്തൽ	തീയതി	സമയം	പ്രവർത്തനങ്ങൾ	വിലയിരുത്തൽ
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		പ്രവർത്തനങ്ങൾ ചെയ്തുകൊടുക്കുക			7 PM	പ്രവർത്തനങ്ങൾ ചെയ്തുകൊടുക്കുക	✓

നിലയി	സമയം	പ്രവർത്തനങ്ങൾ			നില ജോണൽ	നിലയി	സമയം	പ്രവർത്തനങ്ങൾ			നില ജോണൽ	
		സ്മിതി	പഠനം	പാഠ്യ തരം				സ്മിതി	പഠനം	പാഠ്യ തരം		
2	8.00	6.30-7.00	പുസ്തകം		4.30	6.30-7.00	പുസ്തകം		4.30	6.30-7.00	പുസ്തകം	
		6.45	പുസ്തകം		5.00	6.45	പുസ്തകം		5.00	6.45	പുസ്തകം	
		7.00	സ്മിതി		5.30	7.00	സ്മിതി		5.30	7.00	സ്മിതി	
		7.30	പഠനം	പഠനം	✓	7.30	പഠനം	പഠനം	✓	7.30	പഠനം	പഠനം
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Students decided to implement the prepared plan in their daily life and to modify it after 1 week..

### Lesson 11. Follow up and evaluation

**Focus**

1. Development of the ability to critically personal behaviours to foster problem solving skill in students.
2. Development of self-efficacy in students by encouraging them to plan, implement and evaluate a programme independently to boost autonomy in them.
3. Development of the ability of goal setting and accomplishment to foster sense of purpose in students.
4. Development of an ability of planning and executing a programme independently to inculcate good personal and academic behaviours in students.

For evaluating the plan same groups were reconstituted. Each group member evaluated how much they are successful in following the prepared schedule. Students were encouraged to compare the difference between their activities in the unplanned previous week and that in the very last week with a plan. Students in

groups discussed about these points. Findings were recorded in the work book. Every student was provided with chance to present their views.

Students reported that after completing the activity they became realized that lack of planning have caused lots of problems in their life especially in academics. They had to leave the activities incomplete due to the absence of planning in life.

### **Shared reflections**

Students were motivated to evaluate the significance of planning in their life.

Is there any merit in such planning?

What is the importance of planning in day to day life?

Are you able to save your time and energy and reduce your tension due to the planning?

Students discussed the questions in group. After that each student presented own views before the whole class. The class concluded that acquiring the ability of planning is very much useful in leading a successful life. Students discovered that planning has vital role in day to day life. They have

*got a chance to plan the activities in advance and this ignited punctuality in them. Unanimously the students opined that they can avoid tensions in life with the help of planning.*

*Students commented that we will be able to complete our activities systematically with perfection. We avoid the blame on time. We will have a tendency to complete each activity in time. We will get peace in life with the ability of planning. Planning will help to save valuable time in life. We will be able to develop the ability to do things independently. We can increase our accuracy in doing things.*

### **Post-script**

The activity was very effective. Students really assimilated the usefulness of planning in leading a smooth life. Many students started to prepare time table to study their subjects. Feedback collected after one year from the students revealed that students are very effectively using the planning in their academic life.

An interim self-evaluation of the activities for preparing norms – how can be direct our life, a new beginning to make the students flexible, and developing the abilities to plan the life was conducted by students with the help of the guidance provided by the facilitator.

ക്രമ നം	ലക്ഷ്യങ്ങൾ	പരിഷ്കാരങ്ങൾ	വിശദീകരണം
1	നിയമപാലികളുടെ ശീലങ്ങൾ	* നല്ല ശീലങ്ങൾ കണ്ടെത്തുക * ശീലങ്ങൾ വർദ്ധിപ്പിക്കുക	* ശീലങ്ങൾ നന്നായി കണ്ടെത്തി * ശീലങ്ങൾ പാലിക്കുന്നുണ്ട്
2	ഔദ്യോഗിക സുഹൃത്തുക്കൾ	* വിദ്യാഭ്യാസത്തിന്റെ പാലായനം കണ്ടെത്തുക * വിദ്യാഭ്യാസ കാര്യങ്ങളിൽ കുറഞ്ഞ അളവിലെ കണ്ടെത്തൽ * മതപരം വിശ്വാസത്തെ കുറിച്ചുള്ള അറിവ്	* ഫലപ്രസാദി കണ്ടെത്തി * നല്ല മനോഭാവമുള്ള കണ്ടെത്തി * നല്ല മനോഭാവം കുറിച്ചുള്ള വിശ്വാസം
3	അനുഭവങ്ങൾ ബഹുമാനപ്പെട്ട കൃഷി	* ഔദ്യോഗിക കണ്ടെത്തൽ * മനോഭാവം കുറിച്ചുള്ള അറിവ്	* മനോഭാവം കുറിച്ചുള്ള അറിവ് നല്ലവണ്ണം ഉണ്ട്

## **5. UNDERSTANDING AND CONSIDERING OTHERS**

### **Objectives**

1. To develop empathy and flexibility in students in order to boost social competence.

### **Features**

1. Students individually analyzing the situations provided by the Facilitator.
2. Students giving justifications for their classification of situations.
3. Students enacting the situations in class.
4. Students make reflections on the activity.

### **Organization**

1. Individual activity for classifying the events.
2. Group work for enacting the situations.
3. Group work for analyzing the activity.

## **Lesson 12. Analyzing the situations**

### **Specific objectives**

1. To understand how to consider other peoples' emotions as ours.
2. To develop ability to move between sub-cultures.
3. To develop skill in enacting the situations.

### **Focus**

Development of an ability to understand others' feelings and emotions and to make aware the students about the need for moving between sub-cultures in life in order to foster social competence in students.

### **Orientation to the students**

Friends, today we are assimilating this value of understanding and considering the emotions of others for a better living of everyone in the society. All of us are susceptible to problems in life and we should develop an attitude to help others while they are in trouble. Many times all of us thought that if my parents or my friends understand me, I can solve that problem or I will be able to lead a better life. It will have immense value in your future life. If you are assimilating this value, you will be the curators of other's problems. After learning this lesson, a chance is waiting for you to become a director of a drama.

### **Creating the set**

Facilitator invited one student to sing a song. One student came forward and sang a song. After the song, Facilitator appreciated the student who sang the song and asked the students what was going on in your mind while she sang? Students replied that they were thinking about the scene in the film to which the song belongs to. Facilitator told that the scene was very touching to our mind. What kind of feeling that song evoked in your mind? Students replied that they felt sad about the girl. Facilitator replied that if everyone is behaving like, this our society will become a peaceful one.

Facilitator provided some situations for students to classify. Students take down the situations in their work book. After analyzing the situations, classification title is elicited from the students. Situations are provided below.

1. I feel happy when my friend score high marks in examination.
2. I avoid my friend when he / she is sad.
3. I wish to present a gift to my friends when they secure first place in competitive examination.
4. I hear the problems of my friends when they open it up.
5. I feel happy when others are sad.
6. I share drinking water with my friends.
7. I avoid my friends when they approach me to tell something very happily.
8. I help my neighbours when they are in trouble.

Students analyzed all the situations and classified them. Facilitator encouraged the students to propose titles to their classified groups. Students name their classified groups. The suggestion to have good and bad habits was accepted unanimously.

Each student presented their classification. Facilitator asked the students to give justifications for their classification while presenting the same. Students clarified the criterion of their classification. Facilitator checked whether there is any odd one in any one's findings.

### **Lesson 13. Enacting/ role playing the situations**

#### **Focus**

Development of an ability to understand other's feelings and emotions and to make aware the students about the need for moving between sub-cultures in life by role playing the situations in order to foster social competence in students.

Facilitator encouraged students to enact the situations that contain the element of empathy and flexibility. Students in groups discussed about how to select the theme and how to enact it. Facilitator gave appropriate suggestions to students. From different groups two or more students came forward and presented a skit based on theme of empathy. After seeing the skit, Facilitator motivated the students to critically evaluate the situations. Students in groups analyzed the situations and presented their findings. One skit was about the conversation between two friends. One boy very happily approaching the other one and says that my father came from gulf yesterday. The boy who is hearing the words replied that it is none of my

business. The boy whose father reached from gulf became sad by hearing this. Students watched it and commented that we should share the happiness and pains of others.

**Shared reflections**

Facilitator prompted the students to give reflections about the activity conducted by them. Facilitator provided some questions for analysis.

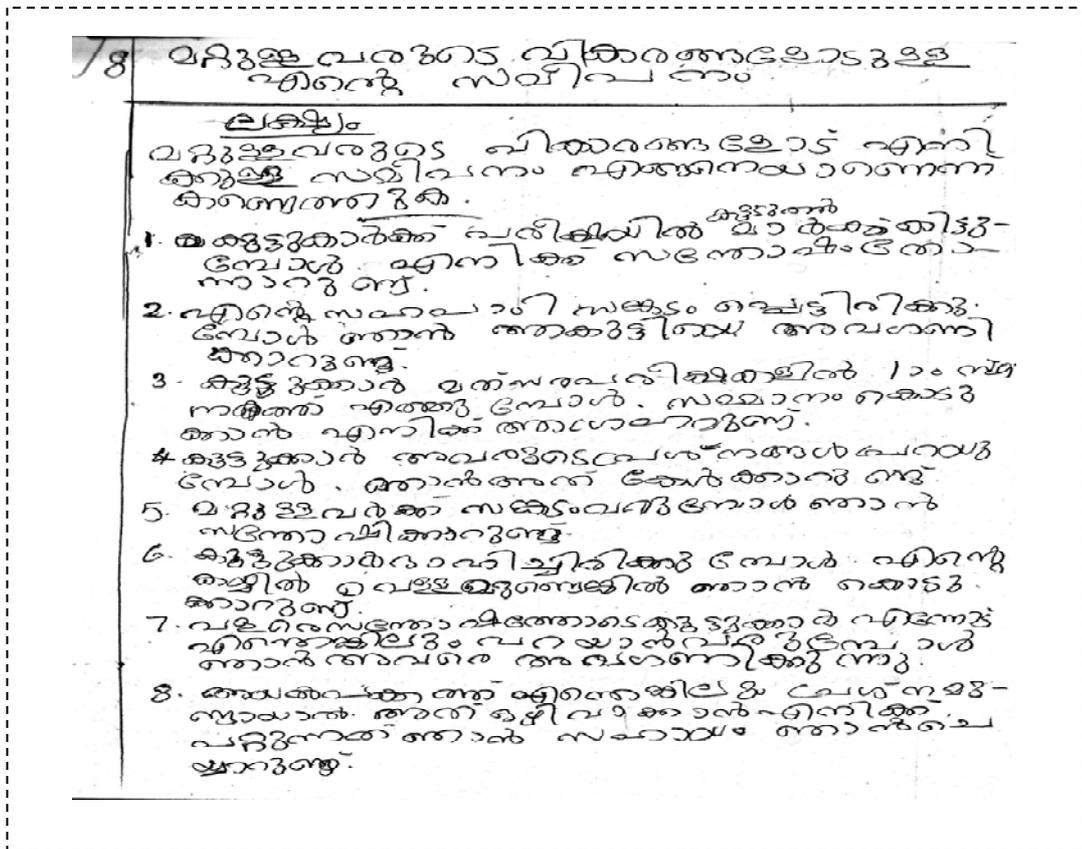
Is this activity useful to you?

What is the significance of empathy and flexibility in our life?

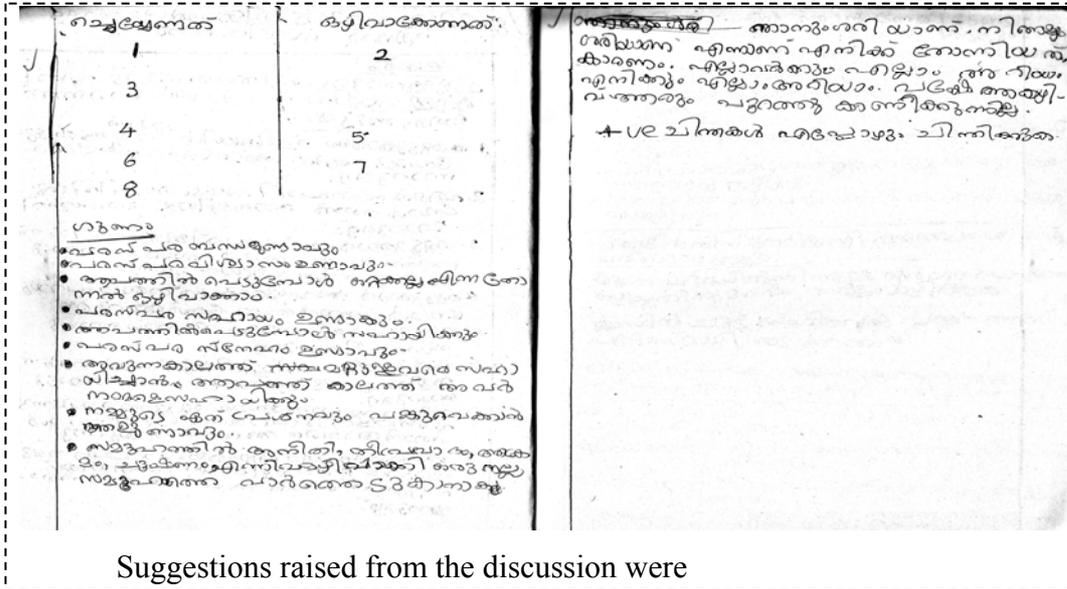
Is enacting the situations helped you to follow these values in life?

Students discussed the questions in groups and presented their findings. After presentation both Facilitator and students made a discussion on how the values like empathy and flexibility help to build a peaceful society.

The situations provided for the students to analyze the importance of considering the feelings and emotions of others were comprehended by students and restated by them in their own language. An illustration is given below.



Students conducted analysis and discussion based on the situations provided by the facilitator. A model of the product of analysis and discussion is presented below.



Suggestions raised from the discussion were

*we should show kindness to others, help the people when they are in trouble, and extend our help to needy people. They reported that if we are following the values like empathy and flexibility our society will be free from many problems. Students reported that enacting the situations helped them to concretize the idea and could develop helping mentality and good characters and helped to avoid bad characters. The activity helped to develop an ability to behave in accordance with other persons' feelings and also helped to discriminate virtues and evils. It will increase our ability to handle problems, thinking ability, helping mentality, and cooperation.*

**Post-script**

Students were interested to enact the situations. Enacting the situations helped them more to imbibe the values. Students whole heartedly participated in the concluding discussion and presented their personal experiences. They assured that they will follow these values throughout their life. It was a very good output of the activity.

## **6. DEVELOPING HOPEFULNESS**

### **Objectives**

1. To develop social competence in students by promoting communication skills.
2. To inculcate sense of purpose in students by developing their hopes and expectations.
3. To develop sense of purpose in students by instilling persistence and optimism.
4. To inculcate personal and academic behaviours in students by helping them to develop dedication, determination, hard work and studying hard.

### **Features**

1. Students listing their hopes and expectations.
2. Students presenting their hopes and expectations.
3. Discussing about the importance of hopes and expectations in life.

### **Organization**

1. Individual activity to list out the hopes and expectations.
2. Individual activity to present the listed hopes and expectations.
3. Group activity to discuss about the role of hopes and expectations in life.

## **Lesson 14. Listing out the hopes and expectations**

### **Specific objectives**

1. To list out the future expectations and hopes.
2. To speak about the expectations and hopes.
3. To discuss about how to accomplish the expectations in life.
4. To discuss about how these hopes and expectations guide our life.

### **Focus**

1. Development of sense of purpose in students by listing, communicating and discussing about their future expectations and hopes.
2. Development of personal and academic behaviours in students by helping them to think about their present and future life.

### **Orientation to the students**

Dear friends, all of us have only one life. We have to lead this life smoothly, without hurting others' hopes and expectations and at the same time fulfilling our own hopes and ambitions. Each one should have hopes and expectations about future. This will make our life more fruitful and systematic. So, today all of you are going to write down your hopes and expectations in your work book. All of you should think clearly about yourself and make real and truthful hopes about your life and about your future.

### **Creating the set**

By playing a song (aadi vaa kaate, paadi vaa kate- a Malayalam film song) in the class, Facilitator made the students happy and energetic. After listening to song, Facilitator and students discussed about the theme of the song. Students identified that it's only an expectation of a person and this expectations have some role to play in our life. Students became ready to do something with their expectations.

After discussing the theme of the song, Facilitator encouraged students to write down their hopes and expectations in the workbook. All students sat in their own positions. After understanding the instructions, they started to think about their

future hopes and expectations. Students were encouraged to write down all their hopes and expectations whatever it may be. Facilitator monitored the work of the students.

### **Lesson 15. Presenting the hopes and expectations**

#### **Focus**

1. Development of social competence in students by communicating and sharing their hopes and expectations to their classmates.
2. Development of sense of purpose in students by communicating and discussing about their future expectations and hopes.

After completing their work, all students presented their hopes and expectations in the class. While one student presenting the hopes and expectations, all others listened to that student and appreciated his or her views. If necessary, Facilitator helped them to correct their views. All students were encouraged to analyze and evaluate their hopes and expectations.

*Children variously opined that they have an ambition to become a Facilitator, doctor, police officer etc. According to them parents of all of them have expectation that their children will secure a good job in future and arrange all earning conditions for them. Facilitators expect that their students will become good persons in future. If we have expectation we can go ahead in accordance with our expectation. We can concentrate on studies. Expectations will prompt and encourage us to study well. It will help to lead a good family life and to discharge the societal functions properly. If we keep an expectation that we will get a good job in future, we will try to achieve it. Securing the dream job will be easier. If students realized that an expectation will be able to go ahead in presence of hurdles. We have developed an ability to keep an expectation in mind and satisfy it.*

**Shared reflections**

After the presentations, Facilitator provided some questions to the students to discuss.

What is the importance of hopefulness in life?

Do you feel any difference in your thoughts before and after this activity?

How do hopes and expectations help a person to lead a happy life?

Students sitting in the same bench constituted a group and conducted discussion on the questions and constructed their own answers. Each group presented their views. Based on their conclusions, Facilitator emphasized the importance of having hopefulness in life and encouraged them to fulfill their hopes.

*Students reported that keeping good hopes in mind have some positive effect in life; we will become motivated to achieve it. If the hopes are about the studies we can achieve high scores in examinations. If we have good expectations about the future we will work hard to achieve it. This hard working will help to lead our life successfully. Students opined that expectations will help to overcome the negative life situations.*

**Post-script**

This activity helped the students to hold some good expectations in their life. This will help them to concentrate on their studies. Such a kind of activity will help the students to wholeheartedly carryout their work and to lead a successful life.

## **7. DEVELOPING COMPETENCE IN STUDENTS TO EFFECTIVELY COMMUNICATE THEIR INDIVIDUAL ASPIRATIONS AND PERSONAL FACTORS**

### **Objectives**

1. To develop social competence in students by fostering their communication skills.
2. To develop problem solving skill in students by promoting their resourcefulness in seeking help from others and the ability to think creatively.
3. To develop autonomy in students by helping them to realize their self-efficacy.
4. To develop personal characteristics in students by inculcating aspirations and personal factors.

### **Features**

1. Students listening to the story read by their classmate.
2. Students thinking about the characters in the story to find out their qualities, values and aspirations.
3. Recorder records the qualities, values and aspirations of the characters found out by the students.
4. Students thinking about their own qualities and aspirations in life and listing them in the workbook.
5. Students writing story based on the qualities, values and aspirations recorded on the black board and based on their own qualities and aspirations.
6. Students presenting their qualities and aspirations and the stories written by them in the class.
7. Students discuss about keeping good values and aspirations in both day to day and academic life.

### **Organization**

1. Whole class activity for reading and listing the qualities, values and aspirations exhibited by the characters in the story.
2. Individual activity for listing their own qualities and aspirations.
3. Individual activity for writing stories and presenting the qualities and values in class.
4. Group activity for discussion.

## **Lesson 16. Listening to the story and finding the qualities**

### **Specific objectives**

1. To develop skill in writing stories.
2. To develop skill in narrating stories.
3. To develop skill in seeking help from others.
4. To develop skill in imagination.
5. To develop an awareness about one's own abilities through doing a task independently.
6. To develop a positive attitude towards good aspirations and personal factors.

### **Focus**

1. Development of an ability to communicate effectively to foster social competence in students.
2. Development of help seeking behaviour and power of imagination in students to inculcate problem solving skill.
3. Development of awareness in students about their own self-efficacy to instill autonomy in students.
4. Inculcation of individual aspirations and personal factors.

### **Orientation to the students**

Friends, today we are going to do an interesting activity. All of you can freely interact each other and share your ideas. It will be better if you follow self control and self discipline during the activity. It will be more helpful to you, if you recollect the good stories that you have read from the books or heard from parents. This activity will help you to realize that you are a good writer.

### **Creating the set**

Facilitator made the students to hear a part of the interview in English between a novelist and an interviewer using a tape recorder. They were very fluently

communicating with each other. Novelist was very metaphorically talking about his novel. Through this Facilitator ignited the students' desire to imagine, speak and communicate well.

One student read aloud a story in the class depicting individual aspirations and good personal values (collected from magazine, Vanitha). All students carefully listened to the story. After hearing the story, students organized themselves as circle in the class. One student voluntarily took the position of a recorder. The whole class appreciated the student who took the position of recorder for his willingness to accept the duty. Facilitator encouraged students to think about the characters in the story and to find out the qualities and aspirations exhibited by the characters. When students find out qualities and values, recorder records it on the black board. Most of the students found out the qualities and values shown by the characters in the story. Repeated ones were avoided. Students copied the matter on the black board in their workbook. After recording many good values and aspirations of the characters in the story, students are encouraged to find out their own individual aspirations and personal factors. The identified qualities and negative behaviours are presented below.

<b>Qualities identified by students</b>	<b>Negative behaviours identified by students</b>
<i>Love, friendship, compassion, patience, humility, service mindedness.</i>	<i>Teasing, cheating, jealousy, pride, violence</i>

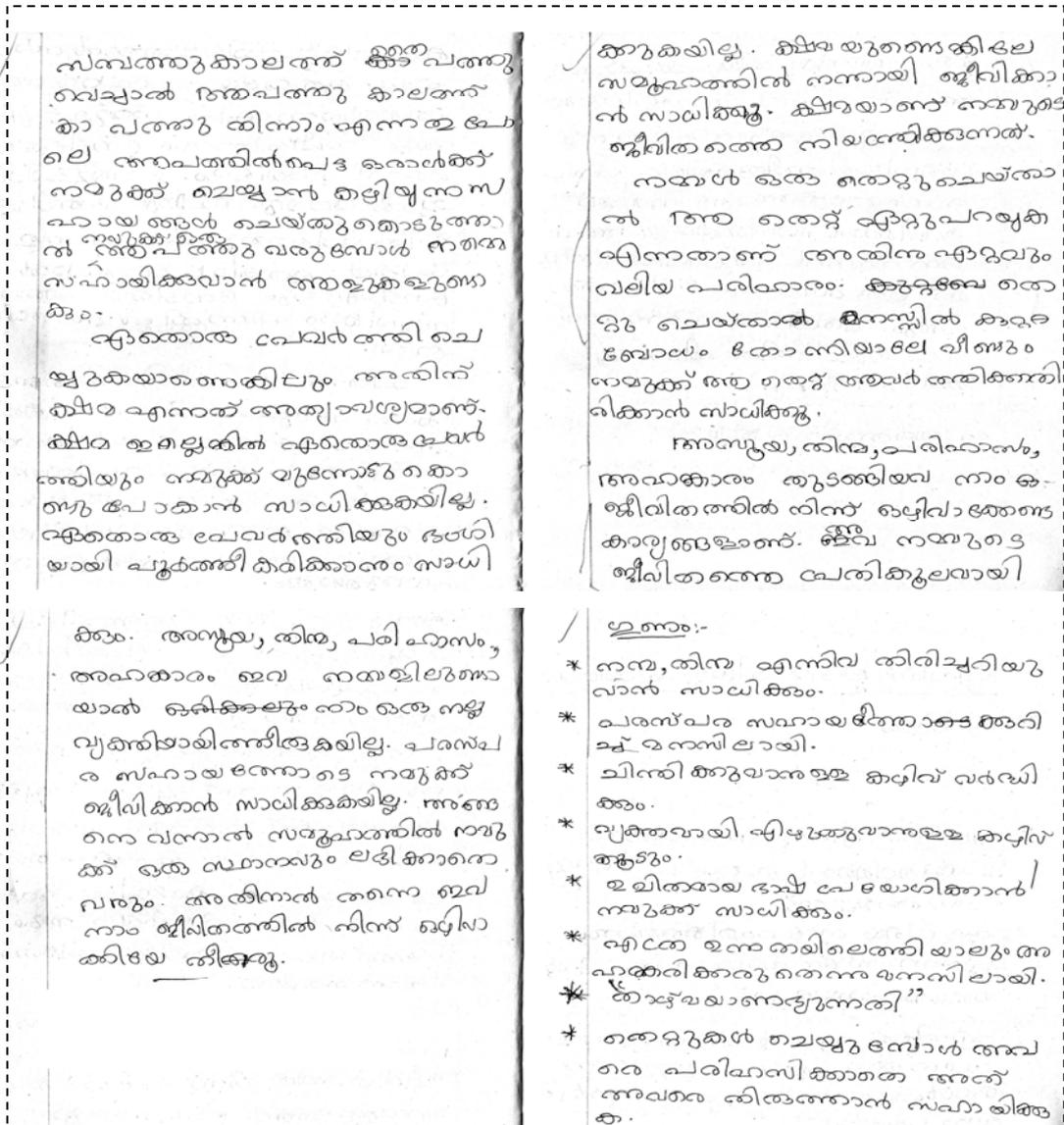
## **Lesson 17. Becoming a writer**

### **Focus**

1. Development of help seeking behaviour and power of imagination in student to inculcate problem solving skill.
2. Development of awareness in students about their own self-efficacy to instill autonomy in students.

Students thought about their own qualities and aspirations in life and wrote down in the workbook. Facilitator encouraged students to write stories based the qualities, values, and aspirations they have identified from the story and also based





Most students wrote stories and some of them prepared a brief description based on the identified qualities.

### Lesson 18. Presenting the story

**Focus**

1. Development of an ability to communicate effectively in order to foster social competence in students.
2. Inculcation of individual aspirations and personal factors.

Class assembled to hear the stories and to share the qualities and aspirations. Facilitator invited all students to present their views and aspirations. Each student came forward and talked about their views and narrated the story written by them.

Facilitator motivated the students speak well and to narrate the story melodiously. Students got chance to positively criticize the views of their friends. Facilitator appreciated the creative nature of the students.

### **Shared reflections**

Students assembled themselves into small groups under the supervision of the Facilitator. Facilitator provided some questions for analysis.

What is the importance of effective communication in life?

Have you ever realized that lack of effective communication has put you in trouble?

Explain the importance of keeping individual aspirations and good personal values in your day to day life and academic life?

Each group discussed about the aspects in the questions and found out the answers. Each group presented their reflections in the class. Students displayed values on the bulletin board. Students reported that writing stories based on the qualities recorded on the blackboard was a new experience to them, and many of them reported that they are unaware of their ability of story writing till then.

*Story writing and its narration helped them to use the language effectively and appropriately and narrating the story helped them to reduce the stage fear. They opined that healthy communication is very much important in life. Some students reported that inability to speak well and fear was a problem when Facilitators ask questions. Students reported that keeping aspirations and following values will help them to lead a better life, and it will help them to keep away from harmful activities. Students reported that they realized their ability to think and imagine. They have developed a tendency to do things independently. Students reported that they could understand that not to tease others while others are doing faults instead we should help them to correct it. Students opined that story writing and listening to stories helped them to inculcate good habits in them.*

**Post-script**

Hearing stories have some impact in all people especially in children. If the Facilitators are transacting the contents through stories children can assimilate it well and also they will show more dedication and commitment to the work assigned by the Facilitator. There are very creative students in our school population and Facilitators should find out time to identify and promote it. This activity helped the students to find out the hidden values and qualities in them and they are encouraged to follow these in life. Story writing and reading helped them to use the language beautifully. While reading the story they got an opportunity to face the whole class. This helped many students to reduce their stage fear.

## **8. STARTING A GOAL ORIENTED LIFE FOR A BETTER FUTURE**

### **Objectives**

1. To develop social competence in students by improving their communication skills and responsiveness.
2. To develop problem solving skill in students by improving their ability to plan and the ability to think critically and reflectively.
3. To develop sense of purpose in students by inculcating goal direction, educational aspirations, achievement motivation, persistence, hopefulness, and optimism.
4. To develop personal and academic behaviours in students by instilling sense of responsibility, achievement oriented outlook, dedication, determination, hard work, self-discipline, time-management, and studying hard.

### **Features**

1. Students thinking about goals they had set in the past.
2. Students thinking about whether they had achieved the same.
3. Students setting goals in both day to day and academic life.
4. Students discussing about the importance of having a goal in life.

### **Organization**

1. Group activity for thinking about goals set in past and its accomplishment.
2. Both individual and group activity for setting goals related with academic and day to day life.

**Lesson 19. Whether I had set any goals in past and what are  
my future goals**

**Specific objectives**

1. To develop skill in writing, reading and transacting ideas.
2. To develop skill in eliciting suitable responses from others.
3. To develop ability to plan things.
4. To develop ability to think about the goals formulated in the past and about the same in future.
5. To develop skill in formulating goals in daily and academic life.
6. To create a positive attitude towards the significance of educational achievement in life.
7. To develop ability to continuously engaging in an activity.
8. To develop ability to think positively about the future.
9. To develop a positive attitude towards fruitful completion of a work sincerely and wholeheartedly.
10. To create an awareness about the effective use of time in life.

**Focus**

1. Development of ability to communicate effectively and the skill in eliciting positive responses from others to promote social competence in students.
2. Development of ability to plan the future and critical and reflective thinking to advance problem solving skill in students.
3. Development of goal direction, educational aspirations, achievement motivation, persistence, hopefulness, and optimism to inculcate sense of purpose in students.

### **Orientation to students**

Dear students, with our life we have to contribute a lot of good things to the society and to the nation. You are the citizens of tomorrow. You have to face lots of problems in your academic and day to day life but you have to withstand and win over this. For that all of us should have clear goals and aims in our life. Our today's activity will help you to realize the importance of goal setting in both academic and day to day life. You have the freedom to discuss in your group. You have to consciously think about your past and future life. Check yourselves whether you have set any goals in your past life. Think about your future academic and day to day life and set appropriate goals.

### **Creating the set**

Facilitator realized the students about the importance of a having a goal in life and the effort of a person to achieve it through the story of a person having clear goals in his life and his achievements and that of lazy, aimless person and his failures( story of appu and achu). Through the story Facilitator made the students aware about the importance goals and hard work in life.

Based on their interest in different sports and games, students were divided into different groups. Each group sat at different places in classroom. Facilitator encouraged them to think about their past life and goals they had formulated and attained during that time. In groups students thought about whether they had set any goals and attained it. But majority of the students were not aware of setting a goal in life. When Facilitator asked whether they had an ambition to score more marks in examinations, many students replied positively. Positive remarks were appreciated by the Facilitator. Then Facilitator encouraged them to formulate goals about their academic and day to day life.

They thought individually and discussed in groups and set goals. Each student presented their goals before the class and others analyzed the relevance of the formulated goals.

*Goals formulated by students include become a good person in the society, love all human beings, secure a good job to help my parents, do hard work to score high in exams, whatever problems may happen to my studies, i will suffer all of*



The identification of goals helped the students to formulate clear goals in relation with their life.

### **Lesson 20. Experiences in setting and attaining goals**

#### **Focus**

1. Development of ability to communicate effectively and the skill in eliciting positive responses from others to promote social competence in students.
2. Development of ability to plan the future and critical and reflective thinking to advance problem solving skill in students.
3. Development of goal direction, educational aspirations, achievement motivation, persistence, hopefulness, and optimism to inculcate sense of purpose in students.
4. Development of sense of responsibility, achievement oriented outlook, dedication, determination, hard work, self-discipline, time-management, and studying hard to inculcate personal and academic behaviours in students.

Students are again motivated to formulate academic goals that have to be attained in the present week itself, both individually and group wise. For setting goals Facilitator gave freedom to students to check their subject notes and allowed them to consult with their group members. Attainment of this goal will be evaluated. All students recorded their goals in their own work book. Facilitator monitored the work and checked the goals formulated by students. After three days, all students conducted self-evaluation to find out whether they have achieved the pre-determined goals using their work book and subject notes. Facilitator appreciated the commitment, hard work and dedication manifested by the students in accomplishing the self-set goals.

Whole class discussed about the socially relevant goals which can be completed by them. Students identified many areas and goals like cleaning the public places, giving awareness to their neighbours about communicable diseases, and helping their friends. Facilitator appreciated all suggestions and motivated them

to carry out the goals. Follow up was conducted by enquiring to the students about the accomplishment of goals.

### **Shared reflections**

Students were encouraged to conduct a discussion on the questions provided by Facilitator related with importance of goal direction in all fields of their life.

Explain the importance of goal direction in the academic life?

Goals will improve the standard of our life. Critically evaluate.

*Students reassembled into their basic groups and discussed about the questions. All groups recorded their conclusions and presented in the class.*

*Students reported that having a goal in life has significant effect in life, especially in academic life. We can live in accordance with the set goals. We will have a mentality o help others. They opined that if we set a goal to secure high marks in examination, the goal will motivate us to study hard. Setting goals related with all aspects of life will improve the quality of our life.*

*Students reported that we have developed an attitude to secure the goal set in advance. If we secure our dream job, it will help to achieve the goals related with that job. Goals will encourage and prompt to do the work properly. Each stage of our life has its own goals. If these goals are unaccomplished; we cannot go ahead in our life. It is a very good character to try hard for achieving a pre-set goal. Goals and expectations provide a direction to a successful life. Future will be bright.*

*Nervazhiyilude sancharikuka, Aadarsam mathram pora, yadharthyavm venam*

### **Post-script**

Secondary school children are unaware of the importance of goal direction and factors associated with accomplishing the set goals. If the Facilitators are providing guidance in connection with this, students will follow it easily. Setting and attainment of goals formulated by the students themselves in this activity had ignited a lamp of goal oriented life in them; it was clear to me from their feed back after completing the activity.

## **9. MY CAREGIVERS' EXPECTATIONS ON ME**

### **Objectives**

1. To develop sense of purpose in students through inculcating goal direction, achievement motivation, persistence, hopefulness, optimism in students.
2. To strengthen the personal and academic behaviours in students by instilling sense of responsibility, achievement oriented outlook, dedication, determination, hard work, self-discipline, studying hard, doing home work and attending classes.
3. To develop social competence in students by fostering empathy and flexibility.

### **Features**

1. Students listing the expectations of their parents and Facilitators about them.
2. Students analyzing the written matter individually.

### **Organization**

1. Individual activity for listing the expectations of parents and Facilitators about them.
2. Group activity for discussing the use of knowing the expectations of others about them.

## **Lesson 21. Try to understand the parents and Teachers**

### **Specific objectives**

1. To identify the expectations of their parents and Facilitators about their children.
2. To develop goal oriented behaviour in students.
3. To develop good characters related with academic life.
4. To develop positive attitude towards emotional oneness.

### **Focus**

1. Development of a positive feeling in students towards the expectations and hopes of parents and Teacher about them in order to infuse sense of purpose in students.
2. Inculcation of good characteristics and academic behaviours in students in order to develop personal and academic behaviours in them.
3. Development of an ability to understand the emotions and feelings of other persons in order to boost social competence in students.

### **Orientation to students**

Friends, today you are going to understand your parents and teachers and their hopes and expectations about you. You have to recollect the conversations and interactions between you and your parents and teachers, and draw out the expectations of them about you. Discussion is not needed for this activity. In order to analyze the merits of this activity, we have to conduct whole class discussion at the end of the lesson.

### **Creating the set**

Facilitator invited the national anthem singers in the school who are studying in the select class to sing a song (thaamarakannanurangenam-a Malayalam film song) in the class. Facilitator instructed students to carefully listen to song.

After hearing song, the class discussed the meaning of song. Facilitator said that few years back, we all are depended on our parents for each and every need

satisfaction. Likewise, when a child is born, from that moment itself the parents dream and expect a lot of good behaviours from their children and when the child enters to the school, teacher also have high expectations about their students. From this discussion students realized that the parents and teachers have good expectations about their children. Facilitator advised students that it is your duty to fulfill the expectations of your parents and teachers and through this your life become more worthy.

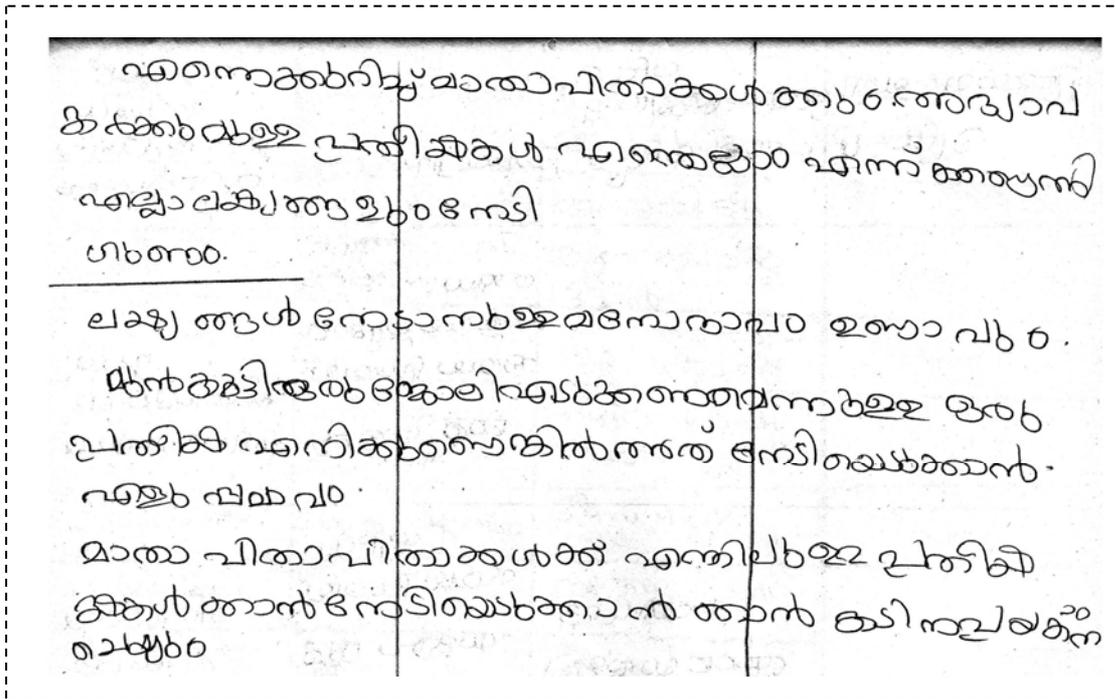
Facilitator clearly explained features of the work and encouraged all students to list out their parents' and teachers' expectations and hopes about them. Each one should recollect the experiences and sayings of your parents and teachers and list those in your book. Here discussion is not needed. Let us examine to what extent your parents and teacher consider you and guide you to the future. Now your duty is to list out the expectations and hopes of your parents and teachers about you. Facilitator instructed students to write the expectations of parents in one column and those of teachers in the second column.

Regarding the expectations and hopes of parents, students should write the things under two headings, i.e., as a son/ daughter and as a student.

Regarding the teachers' expectations the headings are as a student and as a responsible citizen.

Students started to think, recollect and record the hopes and expectations of their parents and teachers about them.





Students completed the work with maximum commitment.

### Lesson 22. Analyzing the relationships

**Focus**

1. Development of a positive feeling in students towards the expectations and hopes of parents and Facilitators about them to infuse sense of purpose in students.
2. Inculcation of good characteristics and academic behaviours in students to develop personal and academic behaviours in them.
3. Development of an ability to understand the emotions and feelings of other persons to boost social competence in students.

After completing the work, Facilitator instructed students to analyze the relationship existing between them and their parents and Facilitators based on their findings. Students analyzed whether there is any relation between expectations of their findings and that of their parents and Facilitators. Facilitator advised students to conduct a self-evaluation to find out whether their behaviour and activities are in tune with the expectations of their parents and Facilitators. Students conducted self-evaluation and recorded it in the work book.

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*Students found out that they have to work more to keep a harmony between expectations of them and their parents and Facilitators. But the students are conscious about the expectations of their parents and Facilitators. They reported that if there is harmony it will provide peace and happiness to them.*

### **Shared reflections**

Facilitator provided some questions for discussion.

What is the importance of knowing the expectations and hopes of parents and Facilitators about them?

Did this activity help you to develop any good qualities in you?

Students and Facilitator discussed about the questions. Also students discussed in groups, and presented their conclusion. Based on their conclusion Facilitator inferred a spirit of responsibility, hard work, and dedication in students.

*Students opined that their parents and Facilitators have good expectations about them. If they are clearly conveying it to them it will motivate them to satisfy the expectations of parents and Facilitators. Students opined that obeying parents and Facilitators have some good impact in their life. Students assured that they will try hard to satisfy the expectations of their Facilitators and parents.*

### **Post-script**

This activity helped the students to realize that their parents and Facilitators are really supporting them to be a good person. Students understood that irrespective of anything, all parents and Facilitators are expecting only good behaviour from them. Every student got an opportunity to examine their relationship with parents and Facilitators. Realization of the expectation of parents and Facilitators developed a sense of dedication in them to satisfy the expectations. Activity also ignited a spirit of responsibility and hard work in students.

## **10. MY RESOURCES**

### **Objectives**

1. To develop problem solving skill in students by improving the resourcefulness of students in seeking help from others.

### **Features**

1. Students identifying the persons in school, family and community who can help them.
2. Students discussing about the importance of identifying the resources in their surroundings.

### **Organization**

1. Individual activity for identifying the persons in their surroundings who can help them.
2. Whole class activity for discussing about the importance of identifying the persons who can support them.

## **Lesson 23. Identifying the persons who can help me**

### **Specific objective**

1. To develop an awareness about the significant role played by other persons in one's life.

### **Focus**

1. Development of resourcefulness in seeking help from others in students to strengthen problem solving skill.

### **Orientation to students**

Dear students, all of us are aware that all the living beings in this world are depend up on each other to lead a happy life. All the plants, animals and human beings are examples of this interdependence. When we face any familial, academic or societal problems all of us seek the help of somebody to solve this. All of you should be aware of members in your family, school and community who can extend their hands to support you. This will make you more resourceful in solving your problems and achieving success.

### **Creating the set**

Facilitator encouraged students to conduct a quiz competition in class. For that each bench of students prepared questions and Facilitator played the role of scorer. Questions were asked by students themselves. This competition energized and motivated students to start another activity.

Facilitator gave the format for writing the things that are identified by students. Students take down it in the work book. Facilitator encouraged students to think and recollect the names and importance of persons in their home, school and community who can make your life more successful. Whenever there is a difficulty, freedom was provided to students to discuss with Facilitator.

Facilitator also encouraged students to think about the persons in their family, school and community who are helpful to them whenever they face any academic and personal problems.

Facilitator also motivated the students to write the names of the persons, their relationship to students, and how they are helpful in solving the academic and personal problems faced by students.

<b>Personal problems</b>	<b>Family</b>	<b>School</b>	<b>Society</b>

All students completed the chart. Facilitator observed each student's chart and appreciated them. Model of the chart prepared by students is presented below.

No: 5 എറണാകുളം/കൊച്ചി			
വ്യക്തിപരമായ പ്രശ്നങ്ങൾ	വിദ്	സ്കൂൾ	സമൂഹം
പതി അസ്വസ്ഥത	ഉമ്മ പേട്ടൻ [അമ്മ, അമ്മ മാലിക്]	ജോൺ മാക് ക്ലിഫ് മാക്	
അപ്രസന്നത നിറവേൽക്കൽ	മേടൻ, ഉമ്മ [അമ്മ, അമ്മ മാലിക് അക്സൻ ഫിസോസ് നെർ]		
ഘർഷണപരമായ പരിഷ്കരണങ്ങൾ	മേടൻ അക്സൻ	ക്ലിഫ് മാക് ക്ലിഫ് മാക് മാലിക്	പാക്കിദ് [അക്സൻ അക്സൻ]
ഉഷ്ണിഷ്.	മേടൻ അക്സൻ	ജോൺ മാക് ജോൺ മാക്	അക്സൻ അക്സൻ പാക്കിദ്
കിരാനി	മേടൻ അക്സൻ	അക്സൻ ക്ലിഫ് മാക് കിരാനി ക്ലിഫ് മാക് കിരാനി അക്സൻ	
പിന്നി		ക്ലിഫ് മാക് അക്സൻ പിന്നി ക്ലിഫ് മാക്	
സോഷ്യൽ	അക്സൻ അക്സൻ	ക്ലിഫ് മാക് അക്സൻ	
സഹായം		അക്സൻ ക്ലിഫ് മാക്	
പിന്നി		അക്സൻ അക്സൻ ക്ലിഫ് മാക്	അക്സൻ അക്സൻ കിരാനി
കിരാനി	അക്സൻ ക്ലിഫ് മാക്	അക്സൻ ക്ലിഫ് മാക് അക്സൻ ക്ലിഫ് മാക്	





മുഖ്യപ്രശ്നം	വിദ്	സ്തുത	വരുഹം
നിത്യ	ഭരണ, സഹോദരി (+മു)	രണ്ടി (ദീച്ചൻ)	
തെളിപ്പെടു	സഹോദരി (പ്ര-വിന, ഭരണ)	തസ്തി (ദീച്ചൻ)	
സഹോദരി	സഹോദരി	സുനന്ദ (ദീച്ചൻ)	
സോഷ്യൽ	മാതാപിതാക്കൾ സഹോദരി	സുധ (ദീച്ചൻ)	
വിസിസ്സ്	സഹോദരി	ജോഷി (ദീച്ചൻ) പരിഷ്കരണം.	
തന്നെ	ഭരണമാതാപിതാക്കൾ സഹോദരി സഹോദരി	ഭരണി (ദീച്ചൻ)	
തസ്തി 15	ഭരണ, സഹോദരി	ശ്യാമ (പ്രോഫ്)	
മലയാളം	മാതാപിതാക്കൾ സഹോദരി	വിജയകുമാരി (ദീച്ചൻ)	

### ലക്ഷ്യങ്ങൾ

- നമ്മുടെ സഹായിക്കുന്ന ഒരു വ്യക്തിയുടെ കണ്ടെത്തൽ.
- നമ്മുടെ സഹായിക്കുന്ന വ്യക്തിയോട് ബന്ധമാനം പുലർത്തുക.
- നമ്മുടെ സഹായിക്കുന്നവരെ ഫിനാൻസ് രാജ്യം വ്യക്തിപരമായും പഠനപരമായും വരുന്ന പ്രശ്നങ്ങൾ കണ്ടെത്തുക.

The work sheets demonstrate that students attained the goals of the activity and located the persons to whom they can approach in solving problems confronted in various situations.

### Lesson 24. Discussing the importance of identifying the persons

**Focus**

1. Development of communication skill in students in order to boost social competence in students.

Facilitator asked students to select their own support star from among the listed persons and to speak about them. Students identified the support star from their chart and talked about how that person is helpful to them. Students reported the importance of identifying the persons as given below.

*Develop attitude to remember the persons who help me.*

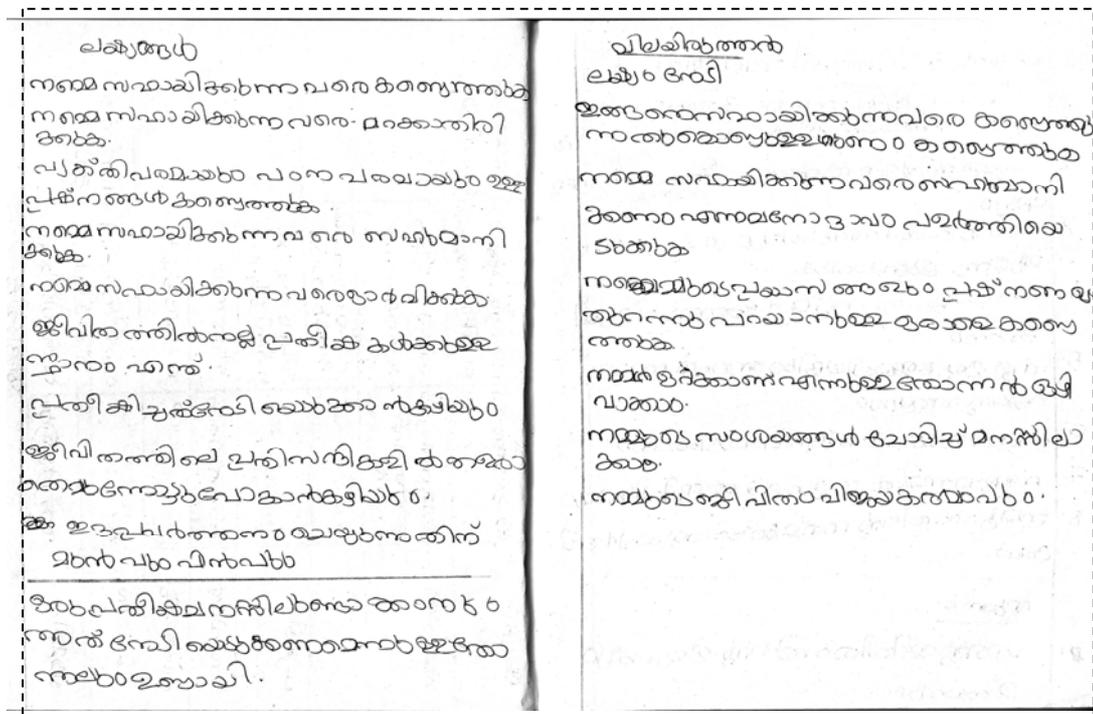
*Develop attitude of respect the persons who helped us.*

*Develop attitude to behave properly to those who helped us.*

*Develop ability to locate the persons who can help us in advance.*

*Locate the persons to whom we can open up our problems.*

vannavazhi marakkathirikkuka



Students identified the importance of locating the persons in their life who can support them in manifesting success in presence of problems and they attained the goals formulated before starting the activity.

### **Shared reflections**

The class discussed about the importance of identifying the persons in family, school and community to help them whenever necessary.

What is the importance in identifying the significant persons in your life?

How does this identification help one to lead a successful life?

Students discussed these questions in groups. Each group presented their conclusion.

*Students reported that this activity was very much useful to them because knowing the persons who can help and support them will help them avoid risks in their life. They opined that the activity helped to find out many persons in their life who are close to them but they are not aware of such persons' importance in their life. If we have any problem in life, the identified persons in our life will help us. We clarify our doubts from the identified persons. We can avoid a feeling that we are alone. Our life will become a success.*

### **Post-script**

Being in the teenage, secondary school students have a view that they are very much self-dependent and they are enough grown up to do everything. This activity provided an opportunity to analyze the importance of other persons in their life. This activity also helped students to seek and demand help from appropriate persons. Activity developed awareness in students that to what extent they are resourceful in seeking help from others, how much they are dependent on others and how other persons can make their life more successful.

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An interim self-evaluation of the activities for preparing norms – how can be direct our life, a new beginning to make the students flexible, and developing the abilities to plan the life, my resources, and my caregivers' expectations on me was conducted by students with the help of the guidance provided by the facilitator.

No I	പ്രവർത്തനങ്ങൾ	ചർച്ചകൾ	വിലയിരുത്തൽ
1.	നമ്മൾ പാലിഭരണർ ശീലങ്ങൾ	<ul style="list-style-type: none"> <li>• നല്ല ശീലങ്ങൾ അർത്ഥം</li> <li>• ശീലങ്ങൾ വളർത്തി കൊടുക്കുക</li> </ul>	<ul style="list-style-type: none"> <li>• ശീലങ്ങൾ നന്നായിട്ടുണ്ടെന്ന്</li> <li>• ശീലങ്ങൾ പാലിഭരണർക്ക്</li> </ul>
2.	രക്തപുനിക തുടങ്ങി	<ul style="list-style-type: none"> <li>• വിദ്യാഭ്യാസത്തിന്റെ പ്രാധാന്യം അറിയുക</li> <li>• വിദ്യാഭ്യാസ കേന്ദ്രങ്ങളിൽ ആർജ്ജവം കാണിക്കുക</li> <li>• ഉന്നത വിദ്യാഭ്യാസം നേടാനുള്ള തയ്യാറെടുപ്പ്</li> <li>• അറിവ് കൈമാറുക</li> <li>• അറിവ് കൈമാറുക</li> <li>• അറിവ് കൈമാറുക</li> </ul>	<ul style="list-style-type: none"> <li>• വളരെ മലപ്പുറം അറിയുക</li> <li>• നല്ല വിദ്യാഭ്യാസം നേടാനുള്ള തയ്യാറെടുപ്പ്</li> </ul>
3.	അഭ്യർത്ഥന ചെയ്യാൻ ഉള്ള കഴിവ്	<ul style="list-style-type: none"> <li>• അഭ്യർത്ഥന ചെയ്യാൻ കഴിവ്</li> <li>• അഭ്യർത്ഥന ചെയ്യാൻ കഴിവ്</li> </ul>	<ul style="list-style-type: none"> <li>• സമയം അറിയുക</li> <li>• അഭ്യർത്ഥന ചെയ്യാൻ കഴിവ്</li> <li>• അഭ്യർത്ഥന ചെയ്യാൻ കഴിവ്</li> </ul>
4.	എന്നെ സഹായിക്കേണമെന്ന്	<ul style="list-style-type: none"> <li>• എന്റെ സഹായം</li> <li>• എന്റെ സഹായം</li> </ul>	<ul style="list-style-type: none"> <li>• ചർച്ചകൾ നേടി</li> <li>• എന്റെ സഹായം</li> <li>• എന്റെ സഹായം</li> </ul>
5.	പ്രതിഫലം	<ul style="list-style-type: none"> <li>• പ്രതിഫലം നേടാനുള്ള തയ്യാറെടുപ്പ്</li> <li>• പ്രതിഫലം നേടാനുള്ള തയ്യാറെടുപ്പ്</li> </ul>	<ul style="list-style-type: none"> <li>• പ്രതിഫലം നേടാനുള്ള തയ്യാറെടുപ്പ്</li> <li>• പ്രതിഫലം നേടാനുള്ള തയ്യാറെടുപ്പ്</li> </ul>

## 11. GRAPES TECHNIQUE

### Objectives

1. To develop social competence in students by improving the communication skills.
2. To develop problem solving skill in students by boosting the ability to think critically and creatively.
3. To develop autonomy in students by helping them to understand about their self-efficacy.
4. To develop sense of purpose in students by improving the goal direction and optimism.
5. To develop personal and academic behaviours in students by inculcating personal factors and academic behaviours.

### Features

1. Students identifying I HAVE factors.
2. Students identifying I CAN activities.
3. Students identifying I AM images.
4. Students presenting the findings about themselves.
5. Students discussing about the importance of activity done by them.

### Organization

1. Individual activity for listing the things and presenting it before the class.
2. Group activity for discussion.

## **Lesson 25. Identifying and presenting I HAVE factors**

### **Specific objectives**

1. To develop an ability to identify the resources available to students.
2. To develop awareness in students about the duties and activities that can be done by them independently.
3. To develop an awareness in students about their own self-image.
4. To develop the skill to communicate effectively.
5. To develop an awareness in students about one's own efficacy.
6. To develop goal oriented behaviours in students.
7. To develop good personal and academic behaviours in students.
8. To reduce the stage fear of students.

### **Focus**

1. Development of communication skills in students to improve social competence in students.
2. Development of critical and creative thinking ability in students to foster problem solving skill.
3. Development of self-efficacy beliefs in students to strengthen autonomy.
4. Development of goal directive behaviour and optimism in students to inculcate sense of purpose.
5. Inculcation of good personal and study related characters in students to strengthen personal and academic behaviours.

### **Orientation to students**

Dear friends, today we are going to play a new game. But this is not a simple game. This game will help you to understand how many persons, materials and resources are available to you directly or indirectly, how many activities can be completed by you alone, and what is your self-image from your own perspective. This will help you to win over adversities and to go ahead more fruitfully.

Like other games, it has also some guidelines that you should strictly follow. In this game, each one of you is going to talk to the whole class.

First of all, you should get ready to talk. You should use language of resilience, i.e., each of your sentences must start with either I HAVE, I CAN or I AM.

Your sentences should be authentic and credible. Your own experiences are also essential. Your Facilitator will encourage you to talk and communicate your ideas to whole class and your friends support you.

**G**et ready to talk.

**R**esilience language is necessary.

**A**uthenticity is needed.

**P**ersonal experience is a must.

**E**ncouragement by the Facilitator.

**S**tudents' support and involvement

### **Creating the set**

Facilitator asked students to tell the names of different fruits. While students are telling the names, one student recorded the same on black board. After writing the names of 15 fruits, Facilitator told to students that she is going to explain some aspects of a fruit and students should try to identify the fruit. Facilitator gave the clues and finally students identified that the fruit is grape. Facilitator invited the recorder to write Grapes technique on black board. After identifying the name of fruit, Facilitator and students discussed about the importance of fruits in healthy diet.

After giving clear instructions to the students, Facilitator provided examples on how to write this.

I have very caring and loving parents.

I have a good collection of books.

Facilitator provided adequate time to students to understand the nature of examples. Facilitator encouraged the students to think and write like this. Facilitator

randomly selected the students to share his/ her resources to the whole class. Facilitator encouraged and appreciated the ability of students to face the class and communicate. Facilitator encouraged other students to support the student who is communicating and also to clear the doubts if any regarding the resources. Systematically all students communicated to the class. Examples of **I HAVE** sentences are presented below.

*I have a lot of friends to share my experiences and problems.*

*I have loving parents and family members.*

*I have good Facilitators to clarify my doubts.*

*I have parents to satisfy my reasonable needs.*

*I have books to read.*

*I have television to watch various programmes.*

Students were good at finding the resources available to them.

## **Lesson 26. Identifying and presenting I CAN activities**

### **Focus**

1. Development of communication skills in students to improve social competence in students.
2. Development of critical and creative thinking ability in students to foster problem solving skill.
3. Development of self-efficacy beliefs in students to strengthen autonomy.
4. Development of goal directive behaviour and optimism in students to inculcate sense of purpose.
5. Inculcation of good personal and study related characters in students to strengthen personal and academic behaviours.

Facilitator explained about I CAN aspect and provided examples to this.

I can cook the food.

I can dance.

Facilitator motivated students to find out the activities that can be completed by them independently.

Students started to think and record their abilities in the work book. After completing it, all students presented an account on their abilities before the class. Facilitator appreciated their abilities. Examples of **I CAN** sentences are presented below.

*I can draw.*

*I can cycle.*

*I can sing.*

*I can think.*

*I can come forward and do the things.*

*I can foster my abilities.*

*I can transfer my abilities to other fields and to other persons.*

*I can invest my abilities in studies.*

*I can make a good garden.*

*I can swim.*

*I can do fabric painting.*

Writing the I CAN sentences provided an opportunity for students to realise their abilities.

## **Lesson 27. Identifying and presenting I AM images**

### **Focus**

1. Development of communication skills in students to improve social competence in students.
2. Development of critical and creative thinking ability in students to foster problem solving skill.
3. Development of self-efficacy beliefs in students to strengthen autonomy.
4. Development of goal directive behaviour and optimism in students to inculcate sense of purpose.
5. Inculcation of good personal and study related characters in students to strengthen personal and academic behaviours.

Like the above activities, Facilitator provided examples on I AM images.

I am a teacher.

I am a post-graduate.

Students were familiar with how to write the things. They started to find out their own concepts about them. Facilitator asked students to present their views about them before the class. All students presented their own concepts about them.

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Facilitator appreciated their ability to draw out the images about them independently. Examples of **I AM** sentences are presented below.

*I am a person who fights against injustice.*

*I am a disciplined student.*

*I am person who respect the freedom fighters.*

*I am person who tells truth.*

*I am punctual.*

*I am person seeking the friendship of good students.*

*I am person believe in all religions.*

Through the activities students identified their images in various fields like personal life, school and society.

### **Shared reflections**

Facilitator and students discussed the importance of GRAPES technique.

Was this activity useful to you?

Is there any significance in identifying these I HAVE, I CAN or I AM factors?

Students discussed and found out the answers to these questions in groups and presented before the class. Facilitator emphasized the importance of GRAPES technique.

*Students reported that they have gained self confidence and improved self-image by writing these I HAVE, I CAN or I AM aspects. It helped them to understand their potentialities and weaknesses. They opined that they became aware of the resources available to them.*

*We could understand our resources, our abilities and who I am. We have developed an ability to think about our role in society in future. We have developed an ability to boost our strength to overcome the hurdles in life.*

### **Post-script**

This activity helped the students to find out their abilities and resources themselves. A clear image about us is very much important in leading a realistic life. Students got the chance to understand about their weaknesses and potentialities. Students got an opportunity to face the whole class and communicate. When a person is able to think and write about these sources of resilience, it is the indication that the person is on the path of resilience.

## **12. FORECASTING AND OVERCOMING THE PROBLEMS**

### **Objectives**

1. To develop critical consciousness in students through making them aware about the structures of oppression and helping them to create strategies for overcoming it.
2. To develop problem solving skill in students through inculcating the ability of planning and fostering critical and reflective thinking.

### **Features**

1. Students thinking and listing the problems they had to face in the society.
2. Students find out the strategies to overcome their own problems.
3. Students conduct discussion about the merits of foreseeing the problems.

### **Organization**

1. Individual activity for listing the problems and finding the remedies.
2. Group activity for discussing the activity.

## **Lesson 28. Listing my own problems**

### **Specific objectives**

1. To develop awareness in students about the problems they have to face.
2. To develop tact in students to overcome the problems.
3. To develop an ability of planning in students.
4. To develop critical and reflective thinking in students.

### **Focus**

1. Development of ability of planning and skill in critical and reflective thinking in students to strengthen the problem solving skill.

### **Orientation to the students**

Friends, now you are only the children having 13 or 14 years. But sometimes you may also shocked by hearing or reading some news about the anti-social behaviours, cheating, and bribery happening in the society. Perhaps we are simply helpless in those situations. But we should foresee such happenings to us and should respond against it. If we are bold and conscious others will not cheat us. Developing such ability is very important in present scenario. Today we are going to study something about it.

### **Creating the set**

Facilitator and students discussed about some movies and about some real events happened in the society. From this discussion students arrived at the conclusion that if we are not aware of the things happening in society, others may take advantage of it to cheat us. Discussion also conducted about the anti-social behaviours going on in the society.

Facilitator asked the students to think about the problem they had and have to face in their life. Students thought about it and started to write those in the work book. Facilitator monitored the work. Facilitator gave the freedom to students to consult with her if there are any doubts. Students completed the activity.

Students identified the problems from school include

*problem of mosquitoes, broken floor, cancer causing asbestos sheets for roofing, foul smell from nearby toilet and inadequate furniture, bringing mobile phone to school and taking photographs and playing game on it, nuisance and unwanted comments from boys towards girls, bullying, absence of learning aids, facing academic problems, and inability to handle personal problems that may happen during school time.*

*Identified social problems are fanaticism, drug addiction, use of plastics, diseases, dumping of wastes in river, exploitation, curtailing the justice, and problems during traveling.*

## **Lesson 29. How I escape?**

### **Focus**

1. Development of awareness about the structures of oppression in students and helping them to create strategies for overcoming it in order to instill critical consciousness.

Facilitator encouraged the students to think about their own problems they have listed yesterday and to think critically to find out the measures to overcome these. Students started to do the assigned work. After completing the work, Facilitator checked and gave guidance to students individually about the importance of having such a consciousness in life based on their problems. Students did not reveal their personal problems before whole class. Students identified remedial measures for some problems like complaining to teachers, police, to health minister, use eco-friendly bags for reducing the plastic wastes, make compost in the school compound and clean it properly, and keep the toilet clean.

A model work sheet prepared by studnets about the problems faced and remedial measures identified by them is illustrated below.







സമൂഹത്തിൽ ഞങ്ങൾ നേരിടുന്ന പ്രശ്നങ്ങൾ.	ചരിത്രാരോഗ്യങ്ങൾ.
ചൂഷണം ചെയ്യൽ.	പരാതികൊടുക്കുകയോ അതിനെ ചെറിയൊരു കാര്യമായി കാണുകയോ ചെയ്യും.
അർഹതപ്പെട്ട ആനുകൂല്യങ്ങൾ ലഭിച്ചിട്ടില്ലെങ്കിൽ	ഉന്നത അതിക്രമങ്ങൾ പരാതി ചെയ്യും.
യാത്രയിലുണ്ടാകുന്ന പിഴവുകൾ	പോലീസ് സ്റ്റേഷനുകളിലോ വാർഡൻമാരിലോ അപരാധം ചെയ്യും.
ജോലിസ്ഥലങ്ങളിലെ പിഴവുകൾ	സ്വയംസഹായസമിതികളോട് പരാതിയടയ്ക്കും. പോലീസ് സ്റ്റേഷനുകളിലോ വാർഡൻമാരിലോ പരാതി ചെയ്യും.

This activity helped the students in finetuning their competence in identifying the ways is solve the problems faced by them in life.

**Shared reflections**

Facilitator and students conducted discussion on some common problems like misbehavior of persons while travelling, and dirty environment and diseases caused due to it.

Facilitator provided some questions for analysis.

How do you benefit from this activity?

What is the significance of foreseeing the problems that we have to face in our life?

Students conducted group discussion based on it and presented their findings. Many students showed courage to fight against the evils in the society. Facilitator congratulated their boldness. Students reported that they have got a chance to think about the problems faced by us and they could find out strategies to

overcome them. Many students are aware of negative happenings but some of them did not possess courage to respond against it. Students opined that foreseeing the problems in life has much significance in life because they will become equipped to handle such problems effectively.

**Post-script**

Our students are aware about the problems they have to face in their life from different sectors of the society. They are good at finding the strategies to overcome these. But many students especially girls manifested fear about implementing these in the real situations. So our schools and Facilitators should inculcate courage in our students through sharing the personal experiences of the Facilitators or presenting the models before them.

### **Lesson 30. MOBILIZING COMMUNITY RESOURCES**

Effective utilization of community resources has its own significance in the development of academic resilience. In order to make available the resources in the community, with the permission of the head of the institution a class on personality development was arranged. The resource persons were counselors of Suraksha Project, Malappuram District Panchayat. Duration of the programme was two hours. This programme was given to CAR and FCAR groups.

#### **Inaugural session:**

Session started with a prayer by the students in the CAR group. Investigator moderated the session. Head of the institution inaugurated the session by focusing on the importance of personality development. One student in the group welcomed the resource persons to the programme.

#### **Class on personality development:**

Personality development programme focused on the importance of developing good personal characteristics and its role in academic achievement. Resource persons focused on the importance of keeping a good personality in life. Asked some simple puzzles to the students and helped them to solve it. They focused on the importance of keeping a tension free mind in life, and importance of good grades in schooling. Resource persons provided many examples about how to behave in different situations. They provide opportunities to students to sing the songs, and encouraged the students to appreciate the students who sung the songs. They invited maximum participation of the students. Encouraged the students to ask questions and clarified their doubts on dealing with strangers. Students positively commented on the programme. Specifically the resource persons concentrated on the following aspects.

I am okay and you are okay.

Keep our personality.

Imbibe good characters and avoid bad ones.

Keep eye contact while talking.

Smile well.

Address the person using name while talking.

Don't tease others.

Don't make disturbances to public.

Whenever we are congratulating a person do it in front of others.

**Conclusion**

The programme ended with the vote of thanks by one of the student in CAR group.

## **APPENDIX G1**

### **ORIENTING PARENTS TO FAMILY PROTECTIVE FACTORS**

#### **Planning**

With the permission of the head of institution of the experimental school, written communication were sent to the parents of the students in FAR and FCAR groups to organize an orientation programme. The main focus of the orientation was to sensitize the parents about the importance of nurturing and mobilizing the family protective factors to foster academic resilience in their children.

Orientation programme also included the nature of adolescents, importance of academic achievement of the students, risks faced by the students, influence of risk on achievement, importance of family protective factors on academic resilience, and effective mobilization of select family protective factors viz., family resources, family psychological nurturance, family environment, and authoritative parenting.

Duration of the orientation programme was two hours. Besides the parents, class teachers of the select groups and president of PTA of the school, also attended the programme.

**Inaugural session:** Class teacher of FAR group inaugurated the orientation programme. After delivering the welcome speech, the investigator started the orientation programme.

**Introduction to the orientation:** This session focused on the very delicate nature of the adolescents and about the importance of extending caring to them. Issues like committing suicide and leaving home were focused. Parents have lots of ambition about their children. It is the strong desire of all parents that their children should become a person having enough recognition in the society through their education. Keeping mere ambition in mind and doing nothing will contribute anything to the development of the child. So, parents should communicate effectively with their children and arrange appropriate facilities and opportunities to them.

### **Session 1-Importance of providing the resources to the children**

Parents should arrange the learning opportunities and facilities to the children. It includes the provision of apt study place at home getting fresh air and light. If possible make available a separate table and chair for the children to study. This will make them more comfortable while studying. Examples like the nuisance of television and radio were focused. Another important aspect is that the provision of healthy and balanced diet to the children. It is essential for the proper development and physiological functioning. Our children show more affinity to the non-vegetarian and modern food habits. It causes harm to the body if they are consuming it regularly and avoiding other healthy diets. So it should be the responsibility of parents especially the mothers to provide them the food containing adequate vitamins, minerals, and proteins. Being the residents of rural area we can easily get leafy vegetables from our own home premises (for eg: moringa, spinach and colocasia). It will increase the hemoglobin count of the children and helps to proper functioning of eyes. Include enough cereals and pulses in the menu and prompt the children to eat it.

To update the knowledge of the children, parents should make available the quality books and learning materials to them. For eg: balarama includes lots of general knowledge and sasthrakeralam includes valuable information on different aspects of science. If possible try to subscribe any daily and prompt children to read it regularly to develop reading habits in students.

Help the children to clear their doubts. If we are not able to clear the doubts, we should take care to connect our children to apt persons to clear their doubts. For eg: teachers and college students residing near to our home. Prompt our children to watch the telecast of educational programmes in television.

Parents should enquire about whether our children are facing any difficulties during their journey to school. Especially our girls are suffering a lot of nuisance during their journey in line buses. We should enquire about it and take appropriate strategies to save our children from such risks.

For the healthy physical development of the children, parents should encourage them to do the exercise properly. Healthy body is essential for keeping a

healthy mind which is vital for proper cognitive functioning. Parents should encourage the children to model the good persons in the society.

### **Session 2- How to nurture our children psychologically**

Parents should help the children to keep their personality. Provision of enough opportunities is essential to recognize and aware about one's abilities. Provide opportunities to do some household works appropriate to their age under the supervision of parents will add up the self-confidence of the children. We should congratulate the children on their abilities and success and encourage them to walk on the path of success. Always encourage the children affectionately to manifest high standards in both curricular and co-curricular activities. Then children will be aware about our expectations about them. They will get motivated through the academic, moral, and social expectations of their parents. It will help the children to keep good standards in life in future also.

Another important point is not comparing our children with others. It will discourage the children and they think that their parents do not love them. This will increase the risk of our children. They will deviate from the studies. So we should understand the potentialities of our children and keep our expectations in tune with that knowledge. Simultaneously attention should take to provide the apt opportunities to nurture their abilities. Take care not to impose our desire on our children.

An important aspect of improving the standards of children is that how much we intervene in the curricular and co-curricular activities of our children. Such interventions include show interest in study matters, discuss about the studies, enquire about the problems in studies, and help them to solve it. Such involvement and communication will develop a healthy mind in children and it promotes academic achievement.

### **Session 3- Importance of family environment**

The place at which we are living has a significant role in our healthy development, especially in the case of children. Always they expect affection and caring from the family members, particularly from the parents. So attention should be given to maintain our family environment warm and healthy. It is the duty of the

parents to create emotional oneness and understanding mentality among all the members in the family. Such an understanding attitude in parents toward their children will keep them mentally healthy. We should try to dine together at least once in a day. This will provide ample opportunities to share the problems, needs, and wishes among the members in the family. This sharing will help develop an adjusting mentality in children.

Encourage the children to help their parents in domestic activities during their leisure time. Such an attitude has very much importance in life. It will create service mindedness in children. Parents should keep a systematic life style and encourage children to follow it. It will help the children to devote enough time for all activities in life. This will help to avoid risks and hurry burry in day to day life.

Parents should try to avoid quarrels in presence of children. It will negatively affect the healthy development of the children. Take care not to make quarrels about the different aspects related with the children. Quarrels and conflicts are common in our life. During such situations, try to solve it properly, and try to understand others' point of view. It will help the children to imbibe such qualities in life.

#### **Session 4- Rearing the children**

Development of a child is closely related with how we are rearing them. Parents should create a democratic atmosphere in the home. Such an atmosphere will create a free mind in the children and they will be able share all their problems with their parents. If parents have no time to listen their children they will seek other person's help and it will create problems sometimes. For eg: different kind of harassments from others for helping the children as a return. Parents consider the opinions of the children and accept it if it is valuable.

Do not impose unwanted control on the children and should avoid corporal punishments. Try not to tease our children in front of others. This will weaken them psychologically. All of these create a negative attitude towards the parents in children.

Parents should provide enough opportunities to children to learn and play. Check the text and note books of our children regularly. Advise the children

lovingly whenever necessary. Rearing the children with love and freedom will improve their maturity and responsibility.

#### **Session 5- Comments of the parents**

All the participants recognized the importance of the orientation programme. One of them commented that all the points covered are essential for the proper development of the children. One parent shared his views about keeping a warm environment and about dining together by quoting the Holy Quran. Many parents enquired about the academic standards of their children and requested for special care of their children. Another comment was that some of these points are familiar to us but we have not recognized the importance of it in the development of our children. One parent appreciated the classroom activities of the students especially about preparing the norms to be followed in life.

#### **Conclusion**

If a child is satisfied with all the protective factors from their parents, definitely they will achieve good standard in life. Effective mobilization of the protective factors by the parents will help the children minimize their risks and demonstrate success in presence of difficulties.

#### **Collecting feedback from the students:**

After conducting the orientation programme, feedback were collected from the students about how their parents are mobilizing the family protective factors for their improvement. Students reported that their parents are concentrating on the effective mobilization of the protective factors. For eg: including leafy vegetables in menu, encouraging to do exercises, giving money to buy instrument box, and providing opportunities to do domestic works when they are free.

#### **Sending communication to parents about the family protective factors:**

After two weeks, a letter containing the aspects like effective mobilization of family protective factors and its significance in academic resilience was sent to the parents of the students in FAR and FCAR groups who had undergone the awareness programme. Again the feedback was collected from the students about their parents' role in developing academic resilience. A copy of the letter to parents is given below.

പ്രിയ രക്ഷിതാവേ,

നമ്മുടെ കുട്ടികൾ പഠിച്ച് നല്ല നിലയിൽ എത്തണമെന്നും സമൂഹത്തിൽ അംഗീകാരമുള്ള വ്യക്തിയായി തീരണമെന്നും ഒരോ രക്ഷിതാവും ആഗ്രഹിക്കുന്നു. അതിനായി മാതാപിതാക്കൾ കുട്ടികൾക്ക് ചെയ്ത് കൊടുക്കേണ്ട കാര്യങ്ങളെ കുറിച്ച് നിങ്ങളെ അറിയിക്കാനാണ് ഈ കത്ത്.

കുട്ടികൾക്ക് ആവശ്യമായ പഠനസാഹചര്യങ്ങളും സൗകര്യങ്ങളും ഒരുക്കിക്കൊടുക്കണം. പോഷകസമൃദ്ധമായ ഭക്ഷണം നൽകണം. ഉദാഹരണത്തിന് ഇലക്കറികൾ, പയർവർഗ്ഗങ്ങൾ എന്നിവ. അറിവ് വർദ്ധിപ്പിക്കാനായി നിലവാരമുള്ള പുസ്തകങ്ങൾ, സ്കൂളിലേക്കാവശ്യമായ പഠനസാമഗ്രികൾ എന്നിവ ലഭ്യമാക്കണം. കുട്ടികളുടെ യാത്രാസൗകര്യങ്ങളെ കുറിച്ചും യാത്രയിൽ ബുദ്ധിമുട്ടുണ്ടാവുന്നുണ്ടോ എന്നും മാതാപിതാക്കൾ അന്വേഷിക്കണം. കുട്ടികളുടെ പഠനപരമായ സംരംഭങ്ങൾ ദൃഢീകരിക്കുന്നതിന് അനുയോജ്യമായ വ്യക്തികളെ പരിചയപ്പെടുത്തി കൊടുക്കുന്നതു നല്ലതാണ്. ടെലിവിഷനിൽ വരുന്ന വിദ്യാഭ്യാസ പരിപാടികൾ കാണാൻ പ്രേരിപ്പിക്കണം. നിത്യവും പത്രം വായിക്കുന്ന ശീലം വളർത്തിയെടുക്കണം. വ്യായാമം ചെയ്യാൻ കുട്ടികളെ പ്രേരിപ്പിക്കണം. സമൂഹത്തിലെ നല്ല വ്യക്തികളെ മാതൃകയാക്കാൻ പ്രേരിപ്പിക്കുക എന്നതും മാതാപിതാക്കളുടെ ചുമതലയാണ്.

കുട്ടികൾക്ക് അവരെ കുറിച്ച് വ്യക്തമായ ബോധം ഉണ്ടാക്കിയെടുക്കാനും അവരുടെ കഴിവുകൾ തിരിച്ചറിയാനുമുള്ള സാഹചര്യം ഒരുക്കിക്കൊടുക്കണം. പ്രായത്തിനനുയോജ്യമായ ജോലികൾ നമ്മുടെ മേൽനോട്ടത്തിൽ കുട്ടികളെ കൊണ്ട് ചെയ്യിച്ചുകൊണ്ട് സ്വന്തം കാലിൽ നിൽക്കാനാവശ്യമായ കഴിവും ആത്മവിശ്വാസവും കുട്ടികളിൽ വളർത്തിയെടുക്കാൻ മാതാപിതാക്കൾ ശ്രമിക്കണം. കുട്ടികളുടെ കഴിവുകളെയും വിജയങ്ങളെയും അഭിനന്ദിക്കുകയും പ്രോത്സാഹിപ്പിക്കുകയും ചെയ്യണം. പാവപാഠ്യേതര കാര്യങ്ങളിൽ മികച്ച നിലവാരം പുലർത്താനാവശ്യമായ പ്രേരണ മാതാപിതാക്കൾ കുട്ടികൾക്ക് എപ്പോഴും നൽകണം. നമ്മുടെ കുട്ടികൾ പഠനപരവും സദാചാരപരവും സാമൂഹികവുമായ കാര്യങ്ങളിൽ നല്ല നിലവാരം കാഴ്ചവെക്കുമെന്ന പ്രതീക്ഷ നമ്മൾക്കുണ്ടെന്ന് കുട്ടികൾ അറിഞ്ഞിരിക്കണം. നല്ല നിലവാരം പുലർത്തണമെന്ന ചിന്ത കുട്ടികളിലുണ്ടാവാൻ ഇതു സഹായിക്കും. നമ്മുടെ കുട്ടികളെ മറ്റുള്ളവരുമായി എപ്പോഴും താരതമ്യം ചെയ്യുന്നത് ശരിയല്ല. അവരുടെ കഴിവുകൾ മനസ്സിലാക്കി അതിനനുസരിച്ച് പ്രതികരിക്കുകയാണ് നല്ലത്. നമ്മുടെ ആഗ്രഹങ്ങൾ കുട്ടികളിൽ അടിച്ചേൽപ്പിക്കരുത്. കുട്ടികളുടെ പാവപാഠ്യേതരവുമായ കാര്യങ്ങളിൽ നമ്മൾ എത്രമാത്രം ഇടപെടുന്നു എന്നുള്ളതും അവരുടെ പഠനത്തെ മെച്ചപ്പെടുത്തുന്ന ഘടകമാണ്. കുട്ടികളുടെ പഠനകാര്യത്തിൽ താല്പര്യം കാണിക്കുക, പഠനത്തെ കുറിച്ച് സംസാരിക്കുക, ബുദ്ധിമുട്ടുകൾ ഉണ്ടോ എന്ന് അന്വേഷിക്കുക, പരിഹാരം കാണാൻ സഹായിക്കുക എന്നതെല്ലാം നാം നിർവ്വഹിക്കേണ്ടതാണ്. പഠനകാര്യങ്ങളിൽ കുടുങ്ങാൻ ശ്രദ്ധിക്കാൻ ഇത് കുട്ടികളെ പ്രേരിപ്പിക്കും.

നമ്മുടെ കുടുബ്ബത്തിൽ സന്തോഷം നിറഞ്ഞതായിരിക്കണം. മാതാപിതാക്കളും കുട്ടികളും തമ്മിൽ ഐക്യവും പരസ്പരവിശ്വാസവും ഉണ്ടാക്കിയെടുക്കാൻ നമ്മൾ തന്നെ ശ്രമിക്കണം. ഒരു നേരമെങ്കിലും വിട്ടിലെ എല്ലാവരും ഒരുമിച്ചിരുന്ന് ഭക്ഷണം കഴിക്കുന്നത് നല്ലതാണ്. ഒഴിവുസമയങ്ങളിൽ ചെറിയതോതിൽ മാതാപിതാക്കളെ സഹായിക്കാനുള്ള മനോഭാവം കുട്ടികളിൽ വളർത്തിയെടുക്കണം. ചിട്ടയായ ഒരു ജീവിത രീതി നമ്മൾ പാലിക്കുകയും അത് പിൻതുടരാൻ കുട്ടികളെ സന്തോഷത്തോടെ പ്രേരിപ്പിക്കുകയും ചെയ്യണം. കുടുബ്ബാംഗങ്ങൾ തമ്മിലുണ്ടാവുന്ന വഴക്കുകൾ ഒഴിവാക്കുന്നതും നല്ലതാണ്.

കർശനമായ ശിക്ഷാരീതികൾ ഒഴിവാക്കണം. കുട്ടികളുടെ അഭിപ്രായങ്ങൾ പരിഗണിക്കുകയും നല്ലതെങ്കിൽ സ്വീകരിക്കുകയും ചെയ്യണം. അനാവശ്യമായ നിയന്ത്രണങ്ങൾ ഏർപ്പെടുത്തുകയും ചെയ്യരുത്. അത് കുട്ടികളിൽ നമ്മളോട് വെറുപ്പുണ്ടാക്കുകയേയുള്ളൂ. പഠിക്കാനും കളിക്കാനും നമ്മൾ അവസരം കൊടുക്കണം. കുട്ടികളുടെ പുസ്തകങ്ങൾ ഇടക്ക് നോക്കുന്നത് നല്ലതാണ്. ആവശ്യമായ ഉപദേശങ്ങൾ സന്തോഷത്തോടെ കൊടുക്കണം. ആവശ്യമായ സ്വാതന്ത്ര്യം കൊടുത്ത് സന്തോഷത്തോടെ കുട്ടികളെ വളർത്തുന്നത് അവരുടെ പക്വതയും ഉത്തരവാദിത്വബോധവും വർദ്ധിപ്പിക്കും. വിട്ടിൽ നിന്ന് ഇതെല്ലാം കിട്ടുന്നുണ്ടെങ്കിൽ നമ്മുടെ കുട്ടികൾ സ്വാഭാവികമായും നല്ല രീതിയിൽ പഠിക്കുകയും പെരുമാറുകയും ചെയ്യും. പഠനത്തിൽ ഉണ്ടാവുന്ന പ്രയാസങ്ങളെ അതിജീവിക്കാൻ മേൽപഠനത്തരത്തിൽ ഉള്ള കാര്യങ്ങൾ കുട്ടികളെ വളരെയധികം സഹായിക്കും. അവ ഒരുക്കിക്കൊടുക്കാൻ നിങ്ങൾ ശ്രമിക്കുമല്ലോ.

സന്തോഷപൂർവ്വം,  
നിനാ കെ. കൊറ്റാലിൽ  
(ഒടുനിയർ റിസെർച്ച് ഫേലോ  
കാലിക്കറ്റ് യൂണിവേഴ്സിറ്റി)

### Collecting feedback from students

After sending letter to the parents feedback was again collected from students about the effective mobilization of family protective factors by their parents

A copy of the invitation sent to the parents is exhibited below.

**G.H.S.S. പട്ടിക്കാട്**  
**ക്ലാസ് പി.ടി.എ.**

സുഹൃത്തേ,

വിദ്യാഭ്യാസ രംഗത്ത് ഒട്ടേറെ ചർച്ചകളും മാറ്റങ്ങളും നടന്നു കൊണ്ടിരിക്കുന്ന ആധുനിക കാലഘട്ടത്തിലാണ് നമ്മുടെ കുട്ടികൾ വിദ്യാലയത്തിൽ എത്തിച്ചേരുന്നത്.

വിദ്യാർത്ഥികൾ നേരിടുന്ന പഠന പ്രശ്നങ്ങൾ മൂലകൊണ്ട് വിദ്യാഭ്യാസ നിലവാരം മെച്ചപ്പെടുത്തുന്നതിന് രക്ഷിതാക്കൾക്ക് എന്തു ചെയ്യാൻ കഴിയും എന്നതിനെ കുറിച്ച് ചർച്ച ചെയ്യുന്നതിന് 5.8.2009 ബുധനാഴ്ച 2.30 PM ന് പട്ടിക്കാട് സി.എൽ.പി. സ്കൂൾ ഹാളിൽ ചേരുന്ന ക്ലാസ് പി.ടി.എ. യോഗത്തിൽ പങ്കെടുക്കണമെന്ന് സ്നേഹപൂർവ്വം അഭ്യർത്ഥിക്കുന്നു.

നീന. കെ. കൊറ്റാലിൽ  
(ജൂനിയർ റിസർച്ച് ഫെലോ  
കാലിക്കാട് യൂനിവേഴ്സിറ്റി)



**INVITATION TO PARENTS FOR A DISCUSSION ON  
QUALITATIVE IMPROVEMENT OF STUDENTS'  
LEARNING DESPITE RISKS**

**G.H.S.S. Pattikkad**

**Class PTA**

Sir,

Today's younger generation steps into the arena of education, where a lot of changes and discussions are going on.

It is informed that a class PTA meeting is scheduled to be held at G.L.P. School, Pattikkad, on 05-08-2009, Wednesday at 2.30 pm in order to discuss what parents can do to improve the quality of education of students by solving the problems faced by them. Seeking your esteemed presence for the same.

Pattikkad  
03-08-2009

**Neena. K. Kottalil**

School seal

**APPENDIX H1**

**DEPARTMENT OF EDUCATION  
UNIVERSITY OF CALICUT  
PERSONAL INFORMATION BLANK  
(for experimental sample)**

**Dr. Abdul Gafoor, K.**  
Associate Professor in Education

**Neena. K. Kottalil**  
Research Scholar

**വ്യക്തി വിവരണം**

1	വിദ്യാർത്ഥി/വിദ്യാർത്ഥിനിയുടെ പേര്	:	
2	വയസ്സ്, ജനനത്തീയതി	:	
3	പഠിക്കുന്ന ക്ലാസ്സ്	:	
4	എട്ടാം ക്ലാസ്സിലെ ആദ്യവർഷ പഠിതാവാണ്	:	അതെ / അല്ല
5	പഠിക്കാൻ ഏതെങ്കിലും എളുപ്പമുള്ള ഒന്നാമത്തെ വിഷയം	:	
6	പഠിക്കാൻ ഏതെങ്കിലും എളുപ്പമുള്ള രണ്ടാമത്തെ വിഷയം	:	
7	പഠിക്കാൻ പ്രയാസമുള്ള വിഷയം, വിഷയങ്ങൾ	:	
8	പ്രയാസം നേരിടുന്നത് ഏത് ഘടകവുമായി ബന്ധപ്പെട്ടിരിക്കുന്നു.	:	എന്റെ കഴിവ് കുറവ്/അധ്യാപകർ പഠിപ്പിക്കുന്ന രീതി/ ക്ലാസ്സിൽ ഇരിക്കുന്ന സ്ഥലം/സ്കൂളിലെ നിയമങ്ങൾ/ ഗൃഹാന്തരീക്ഷം/വിവിധ കാരണങ്ങൾ
9	രക്ഷിതാവിന്റെ പേര്	:	
10	രക്ഷിതാവുമായുള്ള ബന്ധം	:	
11	രക്ഷിതാവിന്റെ ജോലി	:	
12	സഹോദരങ്ങൾ ഉണ്ടോ	:	ഉണ്ട്/ ഇല്ല
13	താമസ സ്ഥലത്തു നിന്നും വിദ്യാലയത്തിലേക്കുള്ള ദൂരം എത്ര	:	
14	യാത്രാ രീതി	:	നടന്നു വരുന്നു/ സ്വകാര്യ ബസ്സുകളിൽ വരുന്നു/ സ്കൂൾ ബസ്സിൽ വരുന്നു/സ്വന്തം വാഹനത്തിൽ വരുന്നു/ വ്യത്യസ്ത രീതികൾ ഉപയോഗിക്കുന്നു.
15	ഉച്ചഭക്ഷണ രീതി	:	വീട്ടിൽ നിന്ന് കൊണ്ടു വരുന്നു/ പുറമെ നിന്ന് കഴിക്കുന്നു/ സ്കൂളിൽ നിന്ന് ലഭ്യമാണ്/ കഴിക്കാറില്ല/വ്യത്യസ്ത രീതികൾ
16	അവധികാലം നിങ്ങൾ എങ്ങനെ പ്രയോജനപ്പെടുത്തുന്നു	:	പഠനത്തിന്/വിനോദത്തിന്/വരുമാനസമ്പാദനത്തിന്/മറ്റെന്തെങ്കിലും
17	ഗാർഹിക കാര്യങ്ങളിൽ നിങ്ങൾ രക്ഷിതാക്കളെ സഹായിക്കുന്നുണ്ടോ	:	ഉണ്ട്/ഇല്ല
18	വീട്ടിൽ ലഭ്യമായ വാർത്താവിനിമയ മാധ്യമങ്ങൾ ഏതെല്ലാം	:	പത്രം/റേഡിയോ/ടെലിവിഷൻ/ഫോൺ/ഇന്റർനെറ്റ്/വിവിധ മാധ്യമങ്ങൾ
19	ഭാവിയിൽ നിങ്ങൾ ആരായിത്തീരാൻ ആഗ്രഹിക്കുന്നു.	:	

**APPENDIX H2**

**DEPARTMENT OF EDUCATION  
UNIVERSITY OF CALICUT  
PERSONAL INFORMATION BLANK (English  
Translation for experimental sample)**

**Dr. Abdul Gafoor, K.**  
Associate Professor in Education

**Neena. K. Kottalil**  
Research Scholar

1	Name of the Student	:	
2	Age/Date of Birth	:	
3	Class	:	
4	Class repeaters	:	
5	First easy subject to study	:	
6	Second easy subject to study	:	
7	Major cause for adversity	:	Lack of ability/ teaching method/ seating/school policy/home environment/ multiple reasons
8	Name of Guardian	:	
9	Relationship with Guardian	:	
10	Occupation of Guardian	:	
11	Do you have any siblings	:	Yes/No
12	Distance from home to school	:	
13	Transport to school	:	By feet/public transport / school arrangement/ own vehicle/ multimode
14	Source of noon meal	:	Homely/hotel/mid-day meal/ no lunch/ Varying
15	Thrust during vacation	:	Study/entertainment /earning/varying
16	Domestic help to parents	:	Yes/No
17	Media at Home	:	Daily news paper/radio/television/telephone/internet/multiple media
18	My ambition	:	

### APPENDIX H3 MATCH AMONG CONTROL AND EXPERIMENTAL GROUPS ON RELEVANT HOME AND SCHOOL INDICES

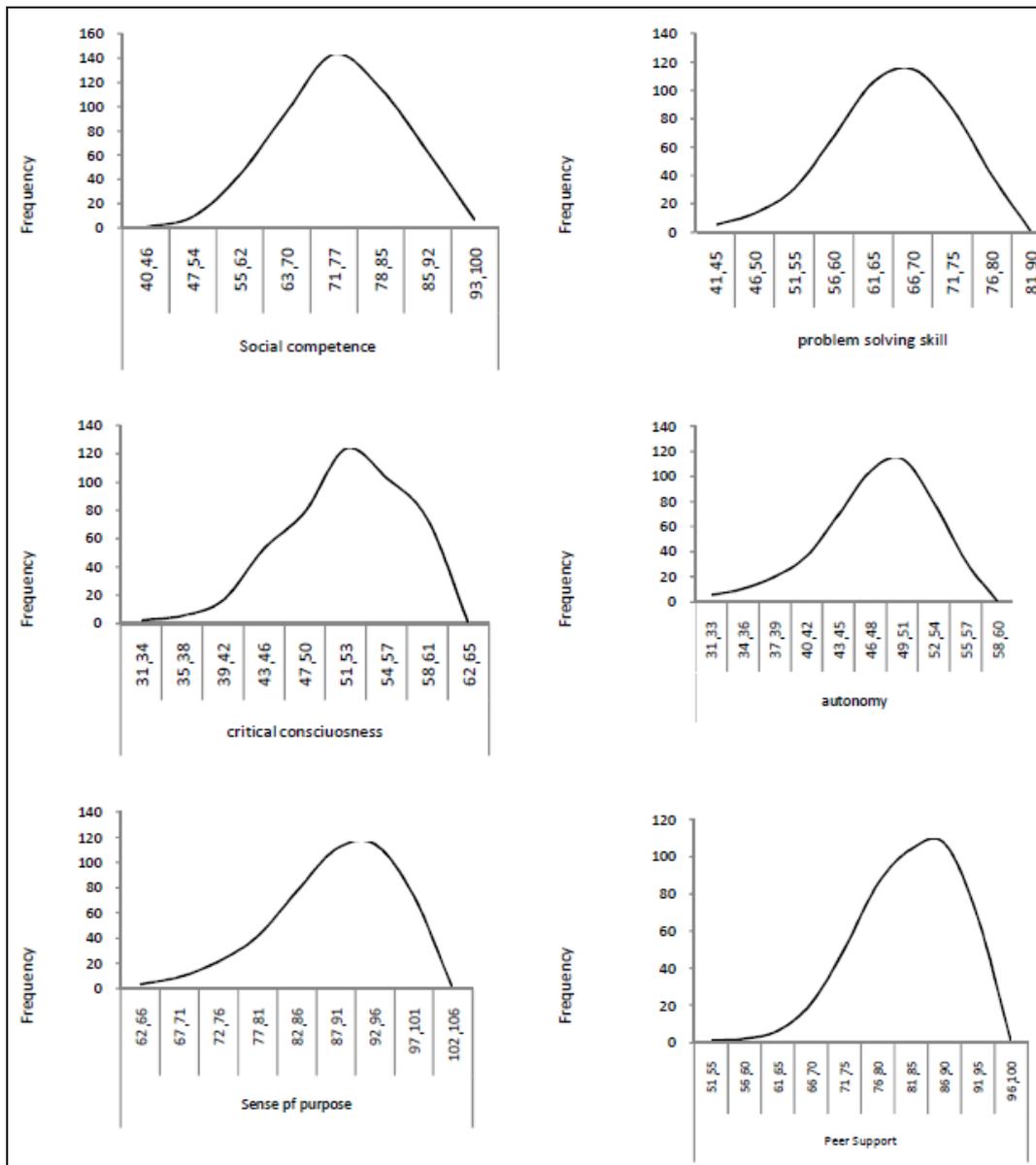
Percentage of students (rounded) in each group belonging to the category mentioned under the index of comparison, as evidence of comparability of the control and experimental (FAR, CAR, FCAR) groups on relevant home and school indices

<u>Indices of comparison</u>	<u>Group 4 (n=49)</u>	<u>Group 2 (n=40)</u>	<u>Group 3 (n=46)</u>	<u>Group 4 (n=45)</u>
Finally allotted treatment	Control	FAR	CAR	FCAR
Boys: Girl	61:39	50: 50	54:46	49:51
<u>Relevant Achievement Indices</u>				
Maths as difficult	96	100	87	82
Other difficult subjects	Hindi,English	English,Hindi	Hindi	Hindi
Class Repeaters	2	0	4	4
<u>Self-Report of Major Cause for Adversity</u>				
Lack of ability	86	75	70	78
Teaching method	14	25	4	9
School policy	0	15	17	2
Seating	18	15	11	7
Home environment	2	5	4	13
Multiple reasons	24	28	17	16
<u>Transport to School</u>				
By feet	39	15	63	53
Public transport	35	48	15	18
Own vehicle	8	8	2	9
School arrangement	20	48	13	27
Multi mode	6	10	0	9
<u>Source of Noon Meal</u>				
Homely	59	78	67	53
Hotel	0	13	0	9
Mid day meal	45	25	28	51
Varying	8	18	0	11
No lunch	0	3	0	0
<u>Thrust during Vacation</u>				
Study	57	55	35	69
Entertainment	69	93	91	73
Earning	8	3	33	7
Varying	43	55	65	71
<u>Media at Home</u>				
Daily news paper	33	53	35	29
Radio	51	28	46	51
Television	45	78	76	62
Telephone	84	85	85	91
Internet	10	0	4	0
Multiple media	69	90	83	78

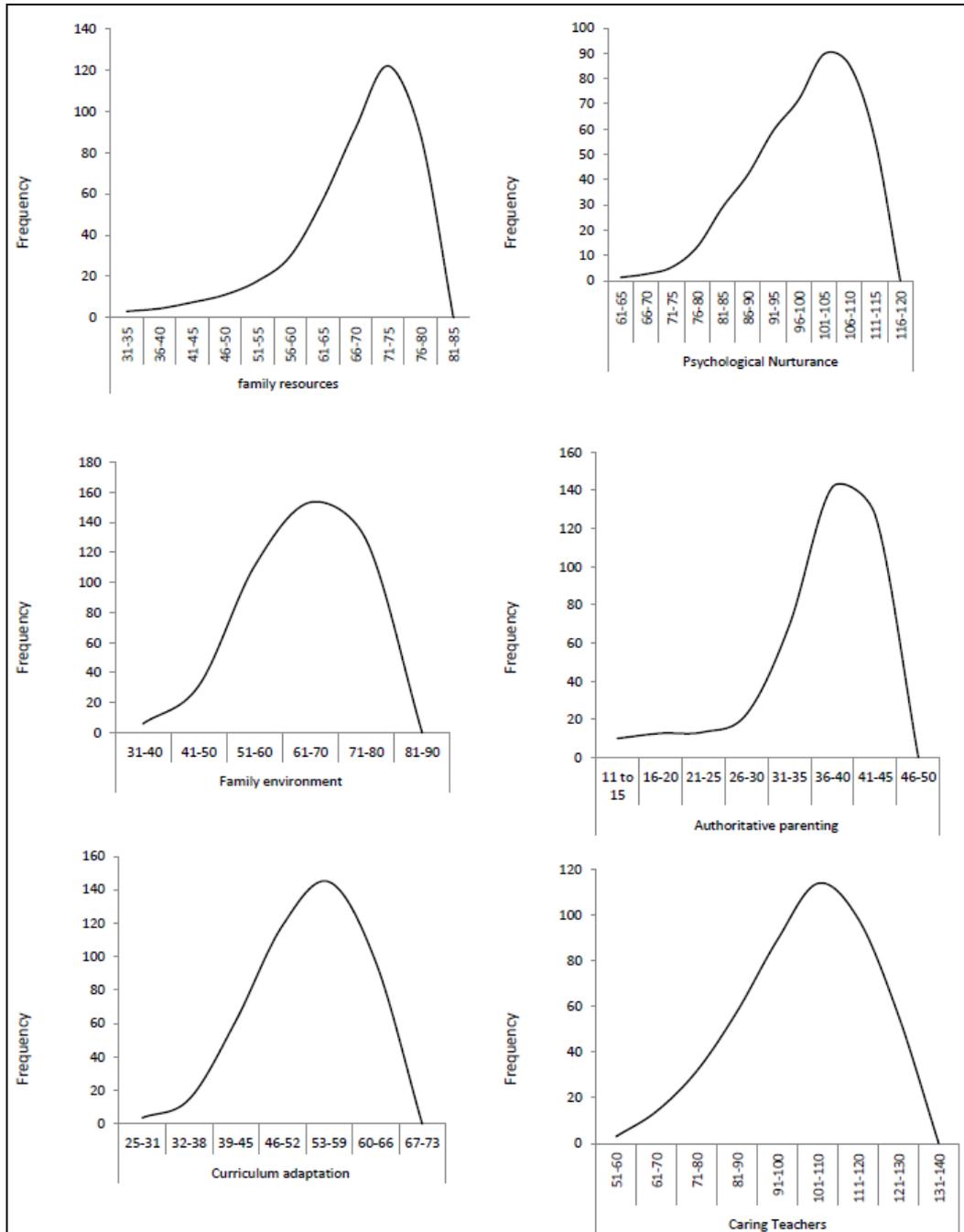
## APPENDIX I1

### SMOOTHED FREQUENCY CURVES OF THE SCORES OBTAINED ON CRITERION AND ATTRIBUTE VARIABLES IN SURVEY PHASE

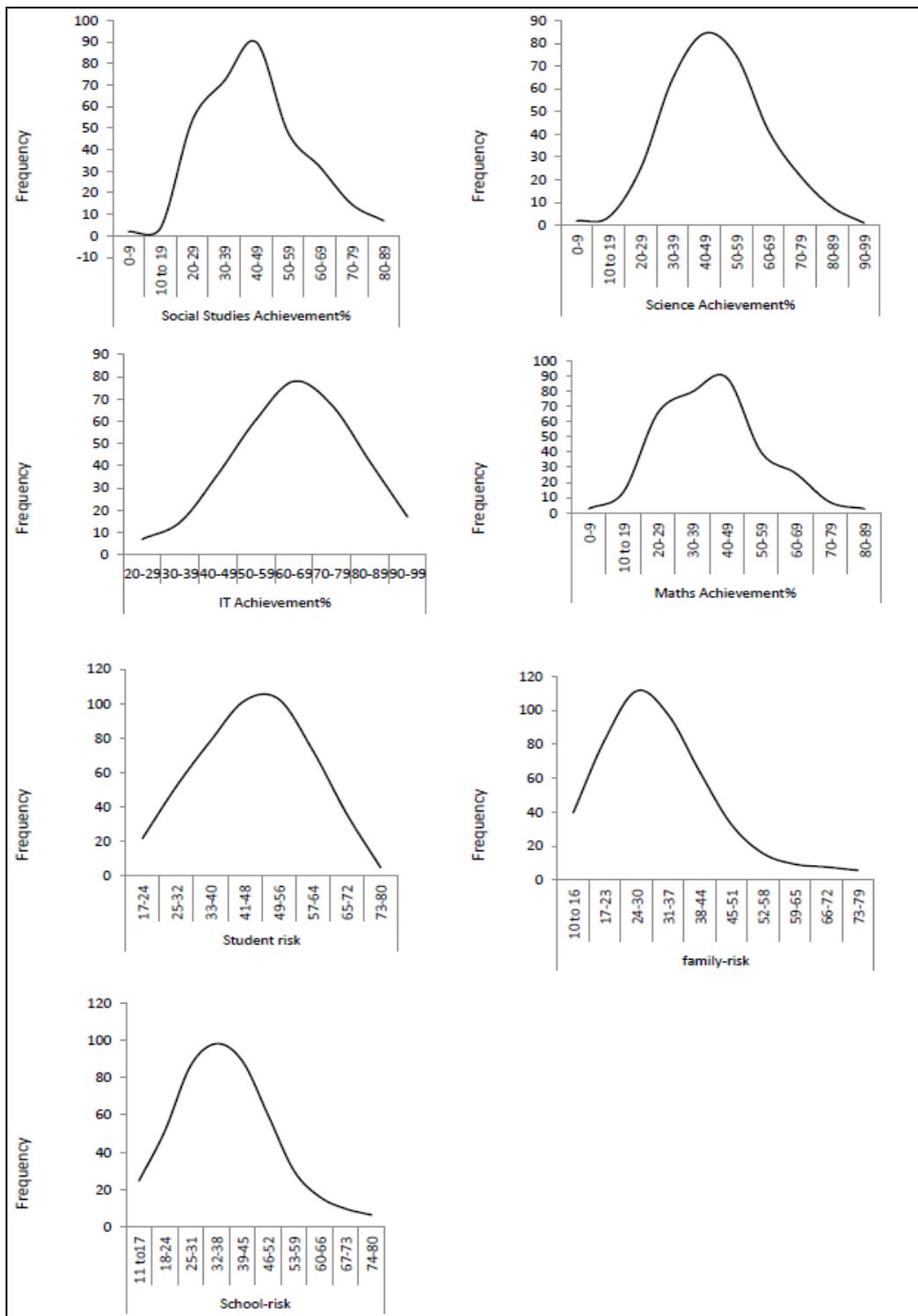
#### Smoothed frequency distribution of the six within child protective factors



**Smoothed frequency distribution of the four family protective factors and two school protective factors**

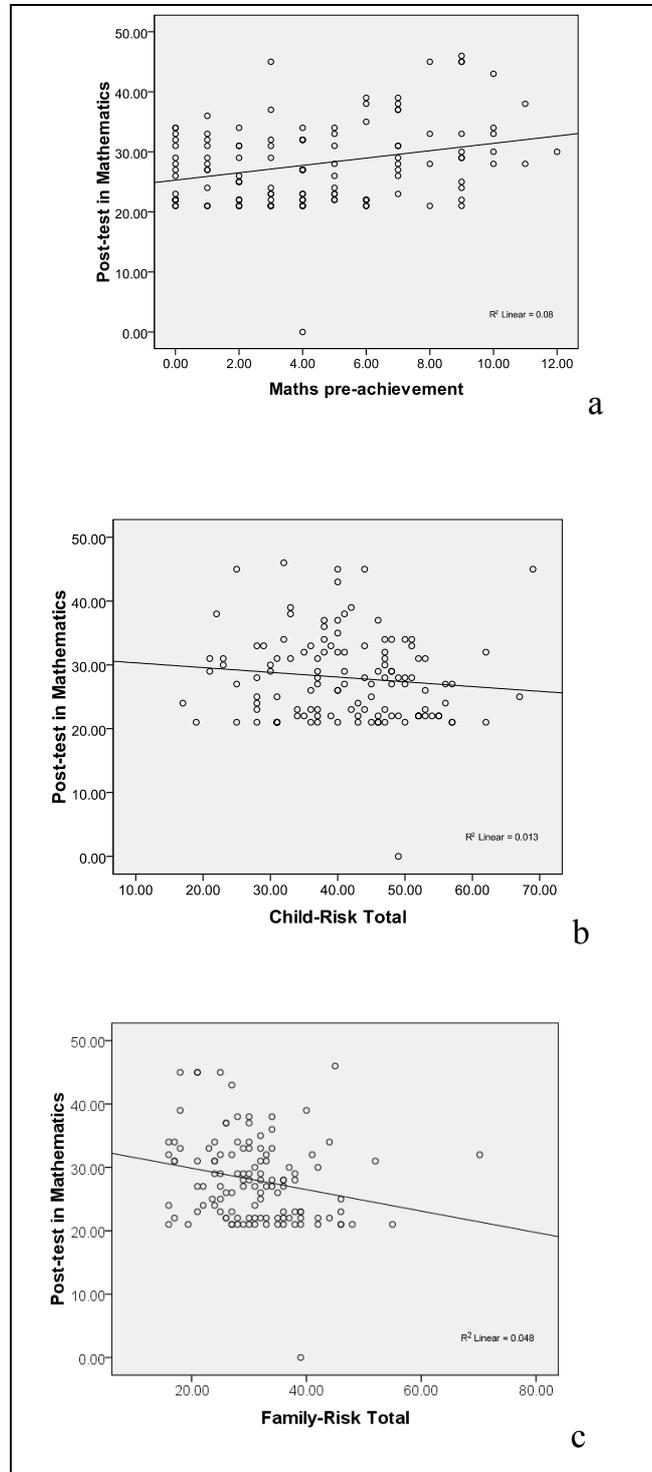


**Smoothed frequency distribution of the achievement in four school subjects and the scores obtained on scales of child, family and school risks.**



## APPENDIX J1

### SCATTER PLOTS OF THREE COVARIATES AGAINST DEPENDENT VARIABLE (POST-TEST IN MATHEMATICS)



- a. Scatter plot of Mathamatuics pre achivemnt against post test in mathamatics
- b. Scatter plot of Child-Risk against post test in mathamatics
- c. Scatter plot of Family-Risk against post test in mathamatics