

**INTERACTION EFFECT OF SELECT INSTRUCTIONAL-LEARNING
STRATEGIES (COOPERATIVE LEARNING AND PEER TEACHING)
AND COGNITIVE ENTRY BEHAVIOUR OF STANDARD VI PUPILS
ON ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS**

BINDHU. C M.

Thesis submitted for the 'Degree of
DOCTOR OF PHILOSOPHY
in Education

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1999**

DECLARATION

I, Bindhu, C.M., do hereby declare that this thesis *Interaction Effect of Select Instructional-Learning Strategies (Cooperative Learning and Peer Teaching) and Cognitive Entry Behaviour of Standard VI pupils on Achievement in Malayalam Language Skills* has not been submitted by me for the award of a Degree, Diploma, Title or Recognition before.

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I, Dr. (Mrs.) Kamala S. Pillai do hereby certify that this Thesis *Interaction Effect of Select Instructional-Learning Strategies (Cooperative Learning and Peer Teaching) and Cognitive Entry Behaviour of Standard VI Pupils on Achievement in Malayalam Language Skills* is a record of bonafide study and research carried out by Smt. Bindhu, C.M. under my supervision and guidance. The report has not been submitted by her for the award of a Degree, Diploma, Title or Recognition before.

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CHAPTER 1

INTRODUCTION

Need and Significance
Statement of the Problem
Variables of the Study
Objectives and Hypotheses
Procedure
Scope and Limitations
Organisation of the Report

Primary Education in the country demands careful attention for the scientific planning and implementation of various instructional programmes due to its profound role in the growth and development of the child. Policy makers, educational administrators and practitioners in the school system are making joint efforts with this end in view. Varied attempts made in India after Independence in this direction resulted in tremendous progress in expanding school facilities and improving enrolment in elementary classes. However, the rate of retention of learners in formal primary classes, and the level of learner achievement are not upto the anticipated target fixed by the Government from time to time. Therefore, attention is increasingly shifted from enrolment drive to strategies designed for improving learner retention and learner achievement.

National Policy on Education (NPE) emphasises universal enrolment and retention of children in primary classes as well as a substantial improvement in the quality of Elementary Education (MHRD, 1986). The scenario of Elementary Education in Kerala state is different. Kerala State ranks first in India in terms of literacy and Universal Elementary Education. But Kerala is at the eighteenth rank among twenty three states regarding the basic competencies in the Mother Tongue of Kerala. The baseline assessment study conducted in the state revealed that only 4.6 percent of the total students in class IV attained the mastery in Malayalam Language Skills - the mother tongue of Kerala (Varghese, 1994).

There had been some attempts recently to improve the qualitative aspects of Elementary Education in Kerala. Instructional materials such as the curriculum and text books have been revised many times within the last twenty years. A number of inservice courses including the Programme for Massive Orientation for School Teacher (PMOST) have been conducted to equip the primary School Teachers (NCERT, 1988). Operation Black Board had been implemented in most of the primary schools in Kerala to provide the school with appropriate

infrastructure. District Institutes of Education and Training (DIET) have been established in all the fourteen districts of Kerala for the full academic support of Primary Education. Instructional programmes for ensuring Minimum Levels of Learning (MLL) have also been introduced in the primary schools of the state. Besides this, District Primary Education Programme (DPEP) have been launched in the primary schools of selected six districts. Various remedial attempts have also been taken through the DPEP to improve the level of student learning especially in Malayalam Language from the academic year 1993-94 onwards.

A positive factor conducive for high percentage of children receiving Elementary Education in Kerala is the high literacy rate of the parents of primary school children. They are not the first generation learners. Even with this congenial climate for Elementary Education, it is unfortunate to note that the overall performance of primary school children even in Mother Tongue is at a very low level (DPEP, 1997). While exploring the reasons attributable to this state of affairs, research evidences show that inspite of adopting a scientifically prepared need-based curriculum certain cognitive and non-cognitive factors of the learners, instructional strategies adopted by the teachers, school organisation and classroom environment along with socio-familial background of the children are some causal variables affecting achievement. Recently, research in Elementary Education focussed the relation between psychological characteristics of the learner and the classroom process variables to ensure the quality of learning.

1.1.0. NEED AND SIGNIFICANCE

Competitive Vs Cooperative Learning

The type of elementary school teaching adopted at present in Kerala is mostly techniques of large group instruction. Nature of learner interaction and

the procedure of evaluation of learning in such a classroom is characterised by competition among members which ultimately achieve individualistic goals. This motivates the pupil to manifest competitive behaviours rather than cooperation in the process of learning. This may have negative effects in mastering many of the desired skills for various school subjects. By competition, learners cannot work towards a common goal and, they are independent of one another's work. They cannot encourage and reward one another to do whatever the individual succeeds. As a result, positive contact among group members decreases. This is mainly due to the pattern of interaction among students of a large group (Johnson and Johnson, 1975). Interaction among students involves three potential types of interdependences as the following.

1. Cooperative/Positive interdependence where, students work together to accomplish shared goals. They have two responsibilities; to maximise their own learning and to maximise the learning of all members of the group.
2. Competitive/Negative interdependence where, students work against each other to achieve a goal that one or few students attain; and,
3. Individualistic/Non-interdependence where, students work by themselves to accomplish goals that are unrelated to the goals of others.

These three possible types of goal structures in a class room will promote a different pattern of interaction and a different class room climate. This will have a deep impact upon the behaviour of students and the amount of learning that takes place (Johnson, 1971).

Large Group Vs Small Group Instruction

All teaching is aimed at promoting cognitive and affective development of students. The overall purpose of schools is to develop each student as a productive and self-actualising member of the society. Traditionally, schools have

focussed upon priorities that are purely cognitive in nature. But increased recognition of the necessity to include affective aspects of learning now changes the nature of Instructional Strategies. That is why advocates of Small Group Instruction (SGI) increasingly favour Cooperative Learning procedures. Educational researchers pointed out that instruction based on cooperative goal structures will produce better cognitive and affective outcomes. Later educational theorists also emphasised cooperation among students during the process of learning. The idea of Cooperative Learning and the advantage of learning in small groups are not entirely new. Cooperative learning was central to the teachings of Rousseau in the eighteenth century, Pestalozzi in nineteenth century and Dewey in the early twentieth century. The developmental theories of both Piaget and Vygotsky emphasised the importance of discussion and joint problem solving among peers. Their theories have been influential in supporting the use of Cooperative Learning Strategies today. As a result, a number of Instructional-Learning Strategies were developed in advanced countries. These include Cooperative Learning and Peer Teaching which ultimately promote cooperation among students in the learning process. (Johnson and Johnson, 1975; Sharan and Sharan, 1976; Aronson *et al.*, 1978; Slavin, 1985 and Olsen and Kagan, 1992). Effect of these Instructional Strategies on Achievement in different subjects at the elementary stage were extensively investigated by researchers in developed countries (Stevens and Slavin, 1995; Lumpe and Staver, 1995; Brush, 1996; Grambo, 1997; Petty, 1997 and Shaw, 1997). Results of these studies highlight the improved academic achievement by promoting Cooperative Learning.

Many studies have supported the fact that cognitive entry characteristics of the learner at the time of joining a course are more crucial determinants of scholastic achievement. Among these, Intelligence, Divergent and Reflective thinking, Memory, Reasoning, Mode of Perception and the like were widely investigated.

In the light of the review of literature, it is very clear that present day Elementary Education strongly demands a variety of scientific strategies of instruction. In most of the elementary schools, attainment of the aim of language education through the development of a pattern of communication skills works at a very poor level. Experimental studies in the area of Small Group Instruction conducted abroad suggest the effectiveness of Cooperative Learning over the traditional pattern of teaching. Similarly, a number of studies evaluating the effects of Cognitive Entry Behaviours of primary school children on academic Achievement have been located. However, studies exploring the effectiveness of learner centered Instructional Strategies such as Cooperative Learning, Peer Tutoring and the like and its interaction with Cognitive Entry Behaviours are very few in the country. The investigator therefore felt the need for exploring the relative effectiveness of a specific Small Group Instructional Strategy on Achievement in Language Skills at elementary level to fill the gap. The study is stated as follows.

1.2.0. STATEMENT OF THE PROBLEM

The present study is entitled as **INTERACTION EFFECT OF SELECT INSTRUCTIONAL-LEARNING STRATEGIES (COOPERATIVE LEARNING AND PEER TEACHING) AND COGNITIVE ENTRY BEHAVIOUR OF STANDARD VI PUPILS ON ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS.**

1.3.0. DEFINITION OF KEY TERMS

The important terms used in the statement of the problem are defined in the following sections.

1.3.1. Interaction Effect

Interaction effect is an effect attributable to the combination of variables above and beyond which can be predicted from the variables considered singly (Winer, 1977).

1.3.2. Instructional-Learning Strategies

The definition of 'Teaching Strategy' by Stones and Morris (1977) is adapted for defining Instructional-Learning Strategies.

Instructional-Learning-Strategy refers to a generalised plan for a lesson which includes structure, desired learner behaviour in terms of goals of instruction and an outline of planned tactics necessary to impelent the strategy. Lesson Strategy is a part of a larger development scheme in the curriculum. In the present study this comprises Cooperative Learning with built-in- Peer Teaching Strategy and Conventional Method of Teaching.

1.3.2.1. Cooperative Learning Strategy

Cooperative Learning Strategy is defined as the instructional method in which students work in small groups (four to six) and are rewarded in some way for performance as a group (Husen and Postelthwaite, 1985).

1.3.2.2. Peer Teaching

Peer Teaching refers to the method of instruction and learning in which children teach others of their age who are not functioning at an average level (Topping, 1988).

1.3.3. Cognitive Entry Behaviour

In the present study, the term Cognitive Entry Behaviour refers to the general intellectual ability of the pupils of standard VI. 'Non-Verbal Intelligence

and Verbal Intelligence' have been selected as the two Cognitive Entry Behaviour of the sample.

1.3.4. Achievement in Malayalam Language Skills

Achievement in Malayalam Language Skills is the accomplishment or proficiency of performance in Malayalam Language as measured by a standardised test comprising of vocabulary, comprehension and written communication skills.

1.4.0. VARIABLES OF THE STUDY

The variables identified, selected and categorised for the present study are the following.

1.4.1 Independent Variables

Two sets of Independent Variables were selected for the present study. They are the following.

1.4.1.1 *Instructional-Learning Strategies*

Two methods of Instruction namely Cooperative Learning Strategy which is integrated with Peer Teaching was selected as Experimental variable.

i) Cooperative Learning Strategy:

Cooperative Learning Strategy is a technique of small group instruction in which individual seat work is replaced by Cooperative Learning activities and the small groups work together as practice or application exercises.

Peer-Teaching Strategy

In Peer Teaching, children teach other children of same age who cannot gain an average level of learning outcomes. They themselves act as tutors in

turns. In essence, Peer Teaching promotes Cooperative Learning. Therefore, in the present study, Peer Teaching has been integrated with Cooperative Learning Strategy instead of treated as a separate variable.

ii) Conventional Method of Teaching

Objective based method of instruction at present adopted and followed in the primary schools of Kerala was selected for the present study.

1.4.1.2. Cognitive Entry Behaviour

The second set of Independent Variables were two Cognitive Entry Behaviours of the sample. They are,

- i) Non-Verbal Intelligence
- ii) Verbal Intelligence

1.4.2 Dependent Variables

Achievement in Malayalam Language skills Post-Test I and Post-Test II (Objective wise and Total score) were considered as Dependent Variables. They are:

- i) Achievement in Malayalam Language Skills - Knowledge category
- ii) Achievement in Malayalam Language Skills - Comprehension category
- iii) Achievement in Malayalam Language Skills - Application category and,
- iv) Achievement in Malayalam Language Skills - Total Score

1.4.3 Control Variables

The following variables were controlled in the present study.

- i) Previous Knowledge of the Subject Matter
- ii) Non-Verbal Intelligence, and
- iii) Verbal Intelligence

1.4.4 Basal Variables

The two basal variables adopted for the present study were:

- i) Sex of the sample and,
- ii) Socio-Economic Status

1.5.0. OBJECTIVES AND HYPOTHESES

The main purpose of the present study was to explore the relative effectiveness of Cooperative Learning with built-in-Peer Teaching strategy over the Conventional Method of Teaching Malayalam Language Skills of Standard VI Pupils. The following specific objectives and hypotheses were formulated and tested.

1.5.1.0 Objectives of the Study

Three sets of objectives were formulated. They are:

1.5.1.1a. To compare the mean Post-Test I scores of Achievement in Malayalam Language Skills (Objective wise and Total score) of Experimental and Control group for the Total Sample and Subsamples based on sex.

1.5.1.1b. To compare the mean Gain scores of Achievement in Malayalam Language Skills of Experimental group and Control group for the Total Sample and Subsamples based on Sex (Tested immediately after teaching).

1.5.1.1c. To compare the mean retention scores of Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) of Experimental group and Control group for the Total Sample and Subsamples based on Sex (Tested one month after completing the experiment).

1.5.1.2. To study the effectiveness of Cooperative Learning Strategy with built-in-Peer Teaching over Conventional Method of Teaching on Achievement in

Malayalam Language Skills when the initial difference in select variables namely Pre-Test, Non-Verbal Intelligence and Verbal Intelligence of the subjects are controlled.

1.5.1.3a. To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of standard VI (Total Sample, Boys and Girls).

1.5.1.3b. To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of Standard VI (Total Sample, Boys and Girls).

1.5.1.3c. To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).

1.5.1.3d. To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).

1.5.2 Hypotheses of the Study

The three sets of hypotheses formulated and tested for the study were the following.

1.5.2.1a. There will be significant difference in the mean Achievement in Malayalam Language Skills Post-Test I-scores (Objective wise and Total score) between Experimental group and Control group for the Total Sample, Boys and Girls.

1.5.2.1b. There will be significant difference in the mean Achievement in Malayalam Language Skills Gain scores between Experimental group and Control group for the Total Sample, Boys and Girls.

1.5.2.1c. There will be significant difference in the mean Achievement in Malayalam Language Skills retention scores Post-Test II (Objective wise and Total score) between Experimental group and Control group for the Total Sample, Boys and Girls.

1.5.2.2. Pupils taught through Cooperative Learning with built-in Peer Teaching Strategy will have high mean Achievement in Malayalam Language Skills (Post-Test I and Post-Test II) than that of pupils taught through Conventional Method of Teaching.

1.5.2.3a. There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of Standard VI (Total Sample, Boys and Girls).

1.5.2.3b. There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning and built-in-Peer Teaching and Conventional method) and Verbal-Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of standard VI (Total Sample, Boys and Girls).

1.5.2.3c. There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of Standard VI (Total Sample, Boys and Girls).

1.5.2.3d. There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).

1.6.0 PROCEDURE

The various steps in the procedure of executing the present study are summarised in the following sub-sections.

1.6.1 The Research Design

Pre-Test Post-Test Equivalent Group Design used for the Experiment is graphically represented as follows.

$G_1 O_1 X O_2$

$G_2 O_3 C O_4$

$O_1 O_3 = \text{Pre-Test}$

$O_2 O_4 = \text{Post-Test}$

$O_2 - O_1$ |
 $O_4 - O_3$ | = Gain score

G_1 - Experimental Group

G_2 - Control Group

X - Application of Experimental treatment

C - Application of Control treatment

The groups of standard VI pupils equated on the basis of Previous Knowledge of Subject Matter, Verbal Intelligence and Socio-Economic Status were selected for the Experiment. One group was treated as Experimental group which was taught through Cooperative Learning with built-in-Peer Teaching strategy. The other group treated as Control group was taught through objective based instruction method.

1.6.2 Sample for the Study

Intact groups of standard VI pupils were selected as sample. Two intact groups of standard VI pupils from two classes each in four Upper Primary schools were taken as Experimental group and Control group. Due representation was given to Rural-Urban Locality of the schools, Sex of the subjects and Instructional efficiency of schools in selecting the sample schools. The experiment was conducted on a sample of 100 pupils of standard VI from four upper primary schools in Ernakulam District of Kerala. The Experimental group and the Control group comprises 50 students each.

1.6.3 Selection of Topic for Treatment

The investigator selected one Prose lesson, one Poetry lesson and one Grammar topic from the Malayalam syllabus prescribed for standard VI in Kerala state. These topics were amenable for teaching through both Cooperative Learning with built-in-Peer Teaching and Conventional Method.

1.6.4 Instructional Materials and Tools used for the Study

Following Instructional Materials and Tools were used for the present study.

i) Lesson Based on Cooperative Learning Strategy

Separate lessons were prepared for Prose, Poetry and Grammar topics

based on the theoretical assumptions of 'Learning Together Model' of Cooperative Learning Strategy and 'Peer Teaching'. Each lesson was arranged in four phases of Instructional-Learning activities.

ii) Lesson based on Conventional Method of Teaching

Separate lessons were also prepared on the basis of Objective based instructional model adopted by the NCERT.

Other Tools used for the study were the following:

- i. *Kerala University Verbal Group Test of Intelligence (Nair et al., 1968).*
- ii. *Standard Progressive Matrices Test (Raven, 1958)*
- iii. *General Data Sheet*

To collect informations about the Socio-Economic Status of the sample, this General Data sheet was used.

- iv. *Achievement Test in Malayalam Language Skills (Pillai and Bindhu, 1997)*

An Achievement Test in Malayalam Language Skills developed by Pillai and Bindhu (1997) was used as the Pre-Test and Post-Test I and Post Test II.

1.6.5 Procedure Adopted for Data Collection

For collecting the needed data, following procedures were adopted.

1.6.5.1 Administration of Pre-Test

The Experimental group and the Control group were administered Pre-Test before introducing the treatments.

1.6.5.2 Treatments

Experimental group was taught the select topics through Cooperative

Learning with built-in-Peer Teaching strategy. The Control group was taught using Conventional objective based instructional method. Both the groups were taught for one month duration.

1.6.5.3 Administration of Post-Test I

Post-Test I was administered to both the Experimental and Control group immediately after treatment.

1.6.5.4 Administration of Post-Test II

Post-Test II was administered both to the Experimental and Control group one month after the treatment.

1.6.5.5 Administration of Other Tools

Data on other Independent Variables and Control Variables namely Non Verbal Intelligence, Verbal Intelligence and Socio-Economic Status were collected by administering the appropriate tools.

1.6.6. Analysis of Data

The entire statistical processing of the data was done using Computer facilities. The Statistical Techniques employed for analysis of data are the following.

- i) Test of significance of difference between means.*
- ii) Two-way ANCOVA of 2x2 Factorial Design followed by Scheffé Test of Post-hoc comparison.*
- iii) Two-way ANOVA with 2x2 Factorial Design followed by Scheffé Test of Post-hoc Comparison.*

1.7.0. SCOPE AND LIMITATIONS

The main purpose of the present study was to explore the effectiveness of Cooperative Learning with built-in-Peer Teaching over the Conventional Method of Teaching Malayalam Language Skills of pupils of standard VI. The study also focussed to investigate the main and interaction effect of select cognitive variables viz. Non-Verbal Intelligence and Verbal Intelligence on Achievement in Malayalam Language Skills. Attempt was also made to study the effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills one month after the experiment to know how far the materials learned are retained. Pre-Test, Post-Test equivalent group Experimental design was used for the study.

All precautions to ensure valid results from the Experimental study such as selection of variables, preparation of tools, control, procedure of data collection and the techniques of processing the data were taken. It is hoped that the present study will yield reliable and valid generalisations which may help to improve the Instructional-Learning process in Language classes. The study was delimited to pupil of standard VI in teaching select content of Malayalam language for a period of one month.

Even though maximum care and precautions were taken to make the Experiment more objective, valid and reliable, the following limitations are anticipated.

- 1.7.1. In order to give special care and attention to the major objective of the problem, the investigator selected only one cognitive variable (Intelligence) as entry behaviour for the study.
- 1.7.2. Since intact class room groups were used for Experiment, repeated observation and measurement were not done.

- 1.7.3. No attempt was made to nullify the regional differences of the schools selected since the Experiment was confined to four schools in Ernakulam District of Kerala state alone.
- 1.7.4. The topics selected for treatment were confined to one unit each in Prose, Poetry and Grammar.
- 1.7.5. Due to paucity of time, the investigator limited the study with two Independent Variables.
- 1.7.6. Achievement and retention in Malayalam Language Skills were restricted to three objectives viz., Knowledge, Comprehension and Application.
- 1.7.7. Language skills which are measurable readily in a normal classroom set up were only taken into account for the present study.
- 1.7.8. Effectiveness of Instructional-Learning Strategies using Covariate Analysis was studied only for the Total sample. No sex wise and locale wise analysis was done.
- 1.7.9. Sophisticated Experimental designs such as *Rotation* group, *Solomon* four group design, *Nested* group etc. were not used.

1.8.0. ORGANISATION OF THE REPORT

Report of the present investigation was organised in the following pattern to get precision and clarity. Each chapter is explained using relevant sections and sub-sections.

CHAPTER 1 INTRODUCTION

Need and Significance of the study

Statement of the Problem

Definition of Key Terms
Variables Selected for the Study
Objectives and Hypotheses
Procedure
Scope and Limitations
Organisation of the Report

CHAPTER 2 REVIEW OF RELATED LITERATURE

Theoretical Overview of the Variables
Review of Related Studies

CHAPTER 3 METHODOLOGY

Selection of Variables
Objectives
Hypotheses
Procedure

CHAPTER 4 ANALYSIS

Preliminary Analysis
- Equivalence of Groups
Major Analysis
- Mean Difference Analysis
- Covariance Analysis
- Analysis of Variance

CHAPTER 5 SUMMARY FINDINGS AND SUGGESTIONS

Study in Retrospect

Major Findings

Tenability of Hypotheses

Suggestions for Improving Educational
Practice

Suggestions for Further Research

CHAPTER 2

REVIEW OF RELATED LITERATURE

Theoretical Overview of the Variables

Instructional-Learning Strategies

Cooperative Learning

Peer Teaching

Related Studies

Studies relating Cooperative Learning with Achievement

Studies relating Peer Teaching with Achievement

REVIEW OF RELATED LITERATURE

Literature relating to the basic theoretical and empirical aspects of the variables undertaken for the study were reviewed in this chapter. The literature reviewed has been presented under the following sections.

2.1 THEORETICAL OVERVIEW OF THE VARIABLES

2.1.1 Instructional-Learning Strategies

2.1.2 Cooperative Learning

2.1.3 Peer Teaching

2.1.4 Cognitive Entry Behaviour

2.2 RELATED STUDIES

2.2.1 Studies relating Cooperative Learning with Achievement

2.2.2 Studies relating Peer Teaching with Achievement

2.1 THEORETICAL OVERVIEW OF THE VARIABLES

An overview of the literature in the field of educational research concerned with the independent variables selected for the present investigation helped the investigator to formulate a theoretical basis for the study. The major focus of this part of the review was to draw out the historical background and development of Instructional-Learning Strategies, namely, Cooperative Learning and Peer Teaching. A brief outline of the theoretical aspects of the Cognitive Entry Behaviour is also presented.

2.1.1 Instructional Learning Strategies

The pivotal aspect in the theory and practice of modern education is to make the instruction as far as possible to be effective and more productive. Instructional schemes can be organised around three general instructional

approaches: (i) Large Group Instruction (LGI), (ii) Independent Study (IS) and (iii) Small Group Instruction (SGI). For effective instruction and curricular transaction, the teacher must adopt appropriate instructional strategies based on the above three approaches.

2.1.1.1 Large Group Instruction (LGI)

Instruction in a large group can be equated with the traditional classroom teaching. Since the number of learners in a large group is unwieldy, the teaching-learning process will have marked limitations to attain the specified objectives of teaching. These limitations are multifold in nature as emphasised by educational practitioners and researchers. Instruction in a large group seems to be a challenge to the teacher. Students have diverse academic and non-academic interests, abilities and goals that may tug with the objectives of the teaching. The type of interaction among the learners in a large group is always characterised by competition. In such a classroom context the interpersonal interaction is very low and projected with mutual dislike rather than liking and mutual trust. The low acceptance and support among learners is predominant and the emotional involvement is very minimum. Coordination of learner efforts and division of labour is not possible normally.

Eventhough Large Group Instruction has such limitations as those enumerated in the foregoing paragraph, the methods and techniques in this category if judiciously planned and implemented, will lead to effective instruction. Popham and Backer (1973) suggest the following strategies:

(a) Teacher presented lecture which is the most widely used classroom instructional procedure, if well planned and well delivered, can be particularly effective for use with large groups; (b) Guest speakers often can be profitably employed during an instructional sequence because of their special expertise;

(c) Another technique suitable for Large Group Instruction involves the use of Group-paced media such as film, audio-tapes or sound film strip programmes.

2.1.1.2 Independent Study (IS)

Independent Study (IS) is considered as one of the ways to individualizing instruction where the academic goal is individualized. The major plus point of Independent Study is that it allows individual attention. But when compared with the Small Group Instruction, Johnson and Johnson (1975) pointed out some undesirable effects of Independent Study as: a. Minimal use of other learners as resource, b. Minimal interpersonal interaction, c. Interpersonal competition, d. No division of labour and e. Mutual trust and liking very low.

Research indicated that the effectiveness of Instructional-Learning Strategies mainly depend on the size and nature of the group to which instruction is intended.

2.1.1.3 Small Group Instruction (SGI)

Contrary to the Large Group Instruction, Small Group Instruction possesses some important characteristics. Due to the reduced size of the learner group (normally 6-10 learners) teachers can capitalize the learner potentialities to the fullest extent to shape the goal of instruction. Several instructional procedures were designed after rigorous research in the field to tap the characteristics of the learners in a small group. Reduction in the size of learners make the teacher's job less complex, enabling less time to be spent as management and more as instruction. Smaller groups are advocated because they are seen to allow for greater participation and involvement by the students. Research on small group methods of teaching have given particular emphasis to cooperation as a social condition of learning. A wide range of cooperative learning procedures have been developed on the basis of the above theoretical basis. In a small group

comprising 6-10 members, competition is less in amount and mutual trust, liking, emotional involvement, division of labour etc. will be enhanced.

A brief description of two important Small Group Instructional Learning Strategies namely, Cooperative Learning and Peer Teaching selected for the study are presented here.

2.1.2 Cooperative Learning

The concept of Cooperative Learning refers to instructional methods and techniques in which students work in small groups (four to six members) and are rewarded in some way for performance as a group. Many studies in western countries revealed that using Cooperative Learning as an instructional strategy, teachers can overcome the major difficulties using the conventional method of teaching. Cooperative Learning Strategy is based on the psychology of cooperation and competition among students in the class. In Cooperative Learning, students are to work together for a common goal, motivating themselves by depending others, encouraging each others during the task of learning and by increasing positive contact among group members.

Studies on small group methods of teaching have given special attention to cooperation as a necessary social condition for learning. Thus, in the 1980s small group methods of teaching got increased attention in developed countries. These are methods usually directed towards increasing cooperation in learning. Principles of cooperation have been applied for many years in industry, in military, sports and in other human endeavour. They have also been used in education for a long time, but their use has tended to be occasional and informal. Systematic Cooperative Learning programmes used as the principal means of delivering instructions were developed in the early 1970s. The rationale for this new emphasis was on cooperation among the students in the classroom and a profound dissatisfaction with the traditional instructional system.

The idea behind Cooperative Learning method is that when groups rather than individuals are rewarded, students will be motivated to help one another to master academic materials. Cooperative Learning methods have also been found to improve group relations in desegregated classrooms, acceptance of mainstreamed academically handicapped students by their classmates, development of student self-esteem and other affective outcomes.

2.1.2.1 The Basic Theory

The theory on which Cooperative Learning methods are based is quite old and well established in social psychology. There is a basic relationship between cooperation and social perspective of the individual which has great deal of social psychological basis. Social perspective is the ability to put oneself in the place of others and understand their perspective on the situation.

Advocates of cooperation have posited that being able to take the perspective of other individuals is a basic requirement for cooperative interaction. Cooperation was evidently the most valuable form of behaviour for man taken at any stage of his evolutionary history. Society is fundamentally, essentially and in always a cooperative enterprise, an enterprise designed to keep man in touch with one another. Without cooperation of its members, society cannot survive and the society of man has survived because of cooperativeness of its member made survival possible. There is positive relationship between social perspective of the individual and social adjustment, the development of the ability to communicate effectively, autonomous moral judgement, personal identity and self awareness, reflective thought to make sense out of one's experiences, ability to predict the effects of one's behaviour, open mindedness and acceptance of differences and empathy (Johnson and Johnson, 1975). Thus if cooperation is demonstrated to increase a person's social perspective abilities it would be directly linked to the above variables.

Aggressiveness exists in the nature of human beings, but there is also a healthy nonruthless competition and there exists very strong drives towards social and cooperative behaviour. If one could seek for a word that describes society better than any other, the word is cooperation (Montagu, 1965). Cooperation gives meaning to the knowledge and skills gained in the individual and within cooperative activities. Such knowledge and skills are used to create alternative and solve problems. Cooperation is the air of the society which the members constantly breathe, completely necessary to all individuals for the smooth and healthy survival.

Cooperation is basic to all human interaction and provides the context for competition and individualization. Cooperation needs to be used to promote the long term socialization, goals of education and to train students in interpersonal skills and the capability to assume membership in a stable relationship and families.

In a classroom, interaction among students involves three potential types of interdependence – Cooperative, Competitive and Individualistic. (i) in Cooperative interaction students work together to accomplish shared goals; (ii) in Competitive, where the students work against each other to achieve a goal that only one or a few students may attain and (iii) in Individualistic, students work by themselves to accomplish goals that are unrelated to the goals of others. Among the three types of student interactions cooperative interaction is a biological necessity for humans (Johnson and Johnson, 1975). No person would survive the first hour, or the first few years of life without cooperative interaction with others, and no group or society would exist without massive cooperation among members. Cooperative experience are also the most essential ingredient for the development of psychological health. Cooperative interaction with others is essential for the development of trust, self-confidence, goal setting, personal

identity and cognitive development, which are the foundation for a person's mental health. Cooperative interaction promotes the interpersonal and group skills needed for humanizing interaction.

2.1.2.2 Four Theoretical perspectives on Cooperative Learning and Achievement

Effect of Cooperative Learning and Achievement can be approached through the four theoretical perspectives.

1. Motivational Perspective

Motivational perspective on Cooperative Learning focuses primarily on the reward or goal structures under which students operate (Slavin, 1977, 1983, 1995). From a motivationalist perspective, cooperative incentive structures create a situation in which the only way group members can attain their own personal goals if the group is successful. Therefore, to meet their personal goals, group members must both help their groupmates to do whatever helps the group to succeed, and, perhaps even more importantly, to encourage their groupmates to exert maximum efforts. In other words, rewarding groups based on group performance (or the sum of individual performances) creates an interpersonal reward structure in which group members will give or withhold social reinforcers (e.g., praise, encouragement) in response to groupmates' task-related efforts (Slavin, 1983). One intervention that uses cooperative goal structures is the group contingency (Slavin, 1987), in which group rewards are given based on group members' behaviours. The theory underlying group contingencies does not require that group members be able to actually help one another or work together. The fact that their outcomes are dependent on one another's behaviour is enough to motivate students to engage in behaviours which help the group to be rewarded, because the group incentive induces students to encourage goal-directed behaviours among their groupmates. A substantial literature in the

behaviour modification tradition has found that group contingencies can be very effective for improving students' appropriate behaviours and achievement (Litow and Pumroy, 1975; Hayes, 1976).

The motivationalist critique of traditional classroom organization holds that the competitive grading and informal reward system of the classroom creates peer norms opposing academic efforts (Coleman, 1961). Since one student's success decreases the chances that others will succeed, students are likely to express norms that high achievement is for "nerds" or teachers' pets. Such work restriction norms are familiar in industry. However, by having students work together toward a common goal, they may be motivated to express norms favouring academic achievement, to reinforce one another for academic efforts.

Not surprisingly, motivational theorists build group rewards into their Cooperative Learning methods. Methods developed by David and Roger Johnson (1989) and their colleagues at the University of Minnesota often give students grades based on group performance, which is defined in several different ways. The theoretical rationale for these group rewards is that if students value the success of the group, they will encourage and help one another to achieve, much in contrast to the situation in the traditional, competitive classroom.

Empirical Support for the Motivational Perspective

Evidence from practical applications of Cooperative Learning in elementary and secondary schools supports the motivationalist position that group rewards are essential to the effectiveness of Cooperative Learning, with one critical qualification. Use of group goals or group rewards enhances the achievement outcomes of Cooperative Learning if and only if the group rewards are based on the individual learning of all group members (Slavin, 1983, 1995). In

contrast, if group rewards are given based on a single group product, there is little incentive for group members to explain concepts to one another, and one or two group members may do all the work.

A review of 68 studies on Cooperative Learning in elementary and secondary schools that involved durations of at least four weeks compared achievement gains in Cooperative Learning and Control groups. Most of these studies took place in the U.S., but there were also studies in Germany (Huber *et al.*, 1982), Israel (Sharan *et al.*, 1984; Mevarech, 1985), Nigeria (Okebukola, 1985) and in Netherlands (Van Oudenhoven, 1992). Of forty-three studies of Cooperative Learning methods that provided group rewards based on the sum of group members' individual learning, nearly all found positive effects on achievement (Slavin, 1995). In contrast, studies of methods that used group goals based on a single group product or provided no group rewards found few positive effects. Comparisons within studies found similar patterns; group goals based on the sum of individual learning performances were necessary to the instructional effectiveness of the Cooperative Learning models (Fantuzzo *et al.*, 1990).

2. *Social Cohesion Perspective*

One theoretical perspective somewhat related to the motivational viewpoint holds that the effects of Cooperative Learning on achievement are strongly mediated by the cohesiveness of the group. In essence, students will help one another to learn because they care about one another and want one another to succeed. This perspective is similar to the motivational perspective in that it emphasizes primarily motivational rather than cognitive explanations for the instructional effectiveness of Cooperative Learning. However, motivational theorists hold that students help their groupmates learn at least in part because it is in their own interests to do so. Social cohesion theorists, in contrast, emphasize

the idea that students help their groupmates learn because they care about the group. A hallmark of the social cohesion perspective is an emphasis on teambuilding activities in preparation for Cooperative Learning, and processing or group self-evaluation during and after group activities. Social cohesion theorists tend to downplay or reject the group incentives and individual accountability held by motivationalist researchers to be essential. Aronson *et al.* (1978), Cohen (1986) and the Sharan's (1992) use forms of Cooperative Learning in which students take on individual roles within the group, which Slavin (1995) calls "task specialization" methods.

One main purpose of the task specialization is to create interdependence among group members. If students value their groupmates (as a result of teambuilding and other cohesiveness-building activities) and are dependent on one another, they are likely to encourage and help one another to succeed.

Empirical Support for the Social Cohesion Perspective

The achievement outcomes of Cooperative Learning methods that emphasize task specialization are unclear. One problem with this method is that students have limited exposure to material other than that which they studied themselves, so learning gains on their own topics may be offset by losses on their groupmates' topics. In contrast, Israeli studies show that when it is well implemented, Group Investigation can significantly increase student achievement (Sharan and Shachar, 1988). In studies of at least four weeks' duration, the Johnson's (1985) methods have not been found to increase achievement more than individualistic methods unless they incorporate group rewards (in this case, group grades).

Research on practical classroom applications of methods based on social cohesion theories provide inconsistent support for the proposition that building

cohesiveness among students through teambuilding alone (i.e., without group incentives) will enhance student achievement. There is some evidence that group processing activities such as reflection at the end of each class period on the group's activities can enhance the achievement effects of Cooperative Learning (Yager *et al.*, 1986).

In general, methods which emphasize teambuilding and group process but do not provide specific group rewards based on the learning of all group members are no more effective than traditional instruction in increasing achievement (Slavin, 1995), although there is evidence that these methods can be effective if group rewards are added to them. One major exception is Group Investigation (Sharan and Hertz-Lazarowitz, 1980; Sharan and Shachar, 1988; Sharan and Sharan, 1992). However, in this method groups are evaluated based on their group products, which are composed of unique contributions made by each group member. Thus, this method may be using a form of the group goals and individual accountability held by motivationalist theories to be essential to the instructional effectiveness of Cooperative Learning.

3. *Cognitive Perspective*

The major alternative to the motivationalist and social cohesiveness perspectives on Cooperative Learning, is the cognitive perspective, which holds that interactions among students will themselves increase student achievement due to mental processing of information rather than with motivations. Cooperative methods developed by cognitive theorist involve neither the group goals that are the cornerstone of the motivationalist methods nor the emphasis on building group cohesiveness characteristic of the social cohesion methods. However, there are several different cognitive perspectives, the Developmental Perspective is described here.

Developmental Perspective

One widely researched set of cognitive theories is the developmental perspective (Murray, 1982; Damon, 1984). This is the dominant theoretical basis for Cooperative Learning in Europe. The fundamental assumption of the developmental perspective on Cooperative Learning is that interaction among children around appropriate tasks increases their mastery of critical concepts. In Vygotsky's (1978) view, collaborative activity among children promotes growth because children of similar ages are likely to be operating within one another's proximal zones of development, modeling in the collaborative group behaviours more advanced than those they could perform as individuals. Similarly, Piaget (1926) held that social-arbitrary knowledge-language, values, rules, morality, and symbol systems-can only be learned in interactions with others. Peer interaction is also important in logical-mathematical thought in disequilibrating the child's egocentric conceptualizations and in provision of feedback to the child about the validity of logical constructions.

Followers of Piaget (Murray, 1982; Damon, 1984; Wadsworth, 1984) have called for an increased use of cooperative activities in schools. They argue that interaction among students on learning tasks will lead *in itself* to improved student achievement. Students will learn from one another because in their discussions of the content, cognitive conflicts will arise, inadequate reasoning will be exposed, disequilibrium will occur, and higher-quality understanding will emerge.

From the developmental perspective, the effects of Cooperative Learning on student achievement would be largely or entirely due to the use of cooperative tasks. In this view, the opportunity for students to discuss, to argue, to present and hear one another's viewpoints is the critical element of Cooperative Learning with respect to student achievement.

4. *Cognitive Elaboration Perspective*

Another perspective on Cooperative Learning quite different from the developmental viewpoint is one which might be called the cognitive elaboration perspective. Research in cognitive psychology has long held that if information is to be retained in memory and related to information already in memory, the learner must engage in some sort of cognitive restructuring, or elaboration, of the material. One of the most effective means of elaboration is explaining the material to someone else. Research on Peer Tutoring has long found achievement benefits for the tutor as well as the tutee (Devin-Sheehan *et al.*, 1976). This mirrors both the Peer Tutoring findings and the findings of Webb (1989, 1992), who discovered that the students who gained the most from cooperative activities were those who provided elaborated explanations to others.

There is evidence that adding group rewards to structured dyadic tasks enhances the effects of these strategies. Fantuzzo *et al.* (1990) evaluated a dyadic study strategy called Reciprocal Peer Tutoring. A simple pair study format did not increase student arithmetic achievement, but when successful dyads were awarded stickers and classroom privileges, their achievement markedly increased. A similar comparison of dyadic tutoring with and without group rewards at the college level also found that group rewards greatly enhanced the achievement effects of a structured dyadic study model (Fantuzzo *et al.*, 1989), and a series of studies have shown positive effects of the Reciprocal Peer Tutoring model in many subjects and at many grade levels (Pigott *et al.*, 1986). A similar program combining structured reciprocal tutoring with group rewards called Classwide Peer Tutoring has also been successful in increasing student achievement in a variety of subjects and grade levels (Greenwood *et al.*, 1989).

One practical use of the cognitive elaboration potential of Cooperative Learning is in writing process models, in which students work in peer response

groups or form partnerships to help one another draft, revise, and edit compositions. Such models have been found to be effective in improving creative writing (Hillocks, 1984), and a writing process model emphasizing use of peer response groups is part of the Cooperative Integrated Reading and Composition Writing/Language Arts program, a program which has also been used to increase student writing achievement. Part of the theory behind the use of peer response groups is that if students learn to evaluate others' writing, they will become better writers themselves, a variant of the cognitive elaboration explanation.

2.1.2.3 Why Cooperative Goal Structuring in Classrooms?

In traditional classrooms, students typically have responsibility only for themselves, are not allowed to help one another and must compete for grades. Cooperative Learning approaches to instruction have altered these conditions.

Goal structure refers to the ways in which pupil are expected to relate to one another and to teachers in working to accomplish classroom tasks. Three types of goal structure have been identified: (i) Cooperative (ii) Competitive and (iii) Individualistic. In a Cooperative structure, as one pupil achieves others automatically achieve also. In a Competitive structure, when one achieves, others automatically do not achieve. In an Individualistic structure pupils' goals are unrelated and independent, and when one pupil achieves, other students are unaffected, and probably indifferent (Topping, 1988).

Whenever problem solving, divergent thinking or creativity is desired, whenever quality of performance is expected, whenever the task is complex, when the learning goals are highly important and when the social development of students is one of the major instructional goals, cooperative goal structuring can be used effectively. Students will expect the group to achieve the learning goal and they will also expect to have positive interaction with other students to share

ideas and materials, to get group support for taking risks in thinking and trying out skills to have every member contribute in some way to goal achievement and to divide the task between each other in a division of labour pattern.

Cooperative goal structure promotes appreciation for cultural, ethnic and individual differences because heterogeneity improves the functioning of a problem solving group. Membership in cooperatively structured groups formed to accomplish instructional objectives has been formed to reduce prejudice and bias among members of different racial groups (Johnson and Johnson, 1975). Every member's resources are utilized in a cooperative group and therefore are valued in helping the group accomplish its learning goals. Students will have more positive attitudes towards school, subject areas, instructional activities, teachers, other school personnel and other students under cooperative goal structure.

In a cooperative goal structure, students work together to produce a common product. A cooperative goal structure requires the coordination of behaviours necessary to achieve the mutual goal. There are three reasons why cooperative goal structure is valuable for a classroom teacher. They are (a) Cooperative goal structure are easier to set up, monitor and evaluate in terms of teaching time and effort; (b) Cooperative goal structure promotes helping and sharing among students and (c) Cooperation promotes the type of learning climate and the cognitive and affective outcomes that make teaching more effective and more functioning (Johnson and Johnson, 1975).

Advocates of Cooperative Learning believe that helping pupils to work together as projects and activities will help them for better cooperation later when individuals are employed at the work place. They emphasize the importance of harmoniously working together as indicated by employees and managers in the

world of work. The ability to cooperate and work together on joint enterprises are salient concepts to emphasize in Cooperative Learning.

Within a cooperative set up, individuals develop increased commitment and involvement that eliminates the possibility of dependence. Cooperative Learning arrangements have been found to promote friendship and pro-social patterns of interaction among students who differ in achievement, gender race or ethnicity and to promote the acceptance of handicapped students by their non-handicapped classmates. Cooperative methods have positive effects on affective outcomes such as self esteem, academic self confidence, liking for the class, liking and feeling liked by classmates, empathy and social cooperation (Good and Brophy, 1990). Cooperative Learning methods are not a wholesale replacement for traditional approaches but adaptation in which teachers introduce and develop concepts in the usual ways but then assign practice and application activities to be done cooperatively rather than individually.

Students in a cooperative situation attach greater importance to academic achievement and believe that their peers have a positive interest in their success in learning (Hulten, 1974). Individuals will take greater risks in their thinking and actions in a cooperatively structured situation. Memorization and the retrieval of information from one's memory is often required in classroom learning and there is evidence that cooperative group discussions are superior to facilitating individual memory of what was discussed. Low achieving students are especially benefited by cooperating structured learning activities.

The optimal size of a group in Cooperative Learning situation will vary according to the desired process and outcomes of the assignment, the age of students, the experience of students have had in working together, the possibilities for a division of labour and the number of students in the class.

Here, the teachers have to step back from directing and lecturing to become consultants to each group. The students within those groups benefit from the following:

1. Promotes relationships between individuals of different backgrounds.
2. Promotes social skills, that is, students learn to work together and resolve conflicts.
3. Promotes self-esteem as individuals take on responsibilities to achieve an end product.
4. Promotes opportunities for peer tutoring by both high and low-achievers.
5. Promotes time on task as end products require team work.

Cooperative Learning enables both the students and the teacher to take on new roles within the classroom. It builds upon a variety of social skills and provides an opportunity for both group and individual assessment. It also allows students to reflect upon themselves and their groups through evaluation, students are able to go back to their groups and discuss the positives and negatives of their experience.

When cooperative goal structure is implemented in the classroom, the teachers must take care to the following aspects.

1. Present the goal as a group goal.
2. Facilitate and encourage the sharing of ideas and materials.
3. Facilitate and encourage a division of labour where appropriate
4. Reward the group for successful completion of the task.
5. Group membership is never left to chance when planning academic activities.
6. Academic objectives should be appropriate for each member of the group.
7. Lesson objectives must be clear for the students and the teacher.

- Always check for understanding
 - Ask for a volunteer to paraphrase the instructions of teachers.
 - Ask questions regarding teacher instructions especially ask questions about the set up of the group and each member's responsibility.
 - Check for individual understanding as the teacher move from group to group.
8. Make sure that the lesson activities are congruent with the objectives of teaching.
 9. Teach *social skills* prior to tackling group work. This will pay off in a big way.
 10. Make sure each objective completes its cycle.

In order for cooperative activities to be successful, teachers need to give attention to the following key elements:

A. *Group Size/Composition*: Johnson and Johnson (1975) report the highest levels of success occur when groups are kept small. In fact, they favour groups of two (dyads) for many cooperative tasks, with the number of group members increasing in proportion to the complexity of the task. Teachers introducing cooperative learning for the first time might let students select their own groups. But once comfort is established, the greatest potential for benefit occurs in heterogeneous groupings, with the teacher assuring a balanced mix of ethnic groups, boys/girls, handicapped with non-handicapped students, and students of low-to-high ability and productivity.

B. *Group Functions*: Students may work in groups on any of the assignments they would ordinarily do alone. They may meet to collaborate on solving a problem, to discuss an issue without direct leading by the teacher, to brainstorm for new ideas or summarize what they have learned about ideas previously presented, to formulate concepts out of information and facts they have been given.

Particularly valuable is the potential of a group to share the parts of a complex project or jointly produce an assigned product. Goals for the group might range from practice in group communication processes to preparation for a presentation to the whole class group.

C. Group Norms: Teachers need to proceed slowly and with patience to introduce students to Cooperative Learning. It is not enough to rearrange the seating. A "culture" of group work needs to be developed that includes expectations regarding noise level, an atmosphere of trust, absence of "put-downs", equal participation, and willingness to help one another. The use of group grades is controversial, but Johnson and Johnson (1975) reported good results from encouraging "we sink or swim together" mindsets. It is important that students learn to coach and teach each other. Brighter students' learning is enhanced by their efforts to teach the others; less-capable students benefit from increased one-to-one attention.

D. Group Skills: Students need to be taught procedures and given practice opportunities for rearranging the classroom space, moving quietly into groups, responding to teachers' signals for attention, etc. So, too, it is important for them to receive explicit instruction and regular practice in the interpersonal skills that this method, as well as life in a democratic society, requires. These include: team work, support, and acceptance of difference, active/reflective listening, positive feedback, reaching consensus, coaching and tutoring others.

E. Group Goals and Roles: Clear instructions, goals, and time lines for group activities are essential to successful Cooperative Learning. It is also important that each member have a specific function within the group: recorder, reporter, monitor, observer, facilitator, etc. Roles should be changed frequently, so that members have opportunity to practice new roles, and should be designed to fit the group's particular task.

2.1.2.4 Types of Cooperative Learning Procedures

Cooperative Learning groups can be used to teach specific content and problem-solving skills (formal learning groups), ensure active cognitive processing during a lecture (informal learning groups), and provide long-term support and assistance for academic progress (base groups). When used in combination, these learning groups provide an overall structure with variety for students.

Formal Cooperative Learning Groups

Formal Cooperative Learning groups might last for one class period to several weeks to complete a specific task or assignment. They have two responsibilities: to maximize their own learning and to maximize the learning of all the members of the group. First, students receive instructions and objectives from their instructor. Second, the instructor assigns each student to a learning group, provides needed materials, arranges the room, and perhaps gives each student a specific role to fulfill in the group. Third, the instructor explains the task and the cooperative structure. Fourth, the instructor monitors the functioning of each learning group and intervenes to teach cooperative skills and assist in academic learning when needed. Finally, the instructor evaluates the quality and quantity of each student's learning and ensures that each group processes how effectively members are working together. Students who need help in completing the assignment are instructed to ask their peers for assistance first and to request help from the instructor only if needed. Students are expected to interact with members of their group, share ideas and materials, support and encourage each other's academic achievement, orally explain and elaborate the concepts and strategies being learned, and hold each other accountable for completing the assignment, using a criterion-referenced evaluation.

Informal Cooperative Learning Groups

Informal Cooperative Learning groups are temporary, ad-hoc groups that last for only one discussion or one class period. Their purposes are to focus students' attention on the material to be learned, set a mood conducive to learning, help organize in advance the material to be covered in a class session, ensure that students cognitively process the material being taught, and provide closure to an instructional session. They can be used at any time but are especially useful during a lecture or direct teaching before the students' eyes begin to glaze over (some estimate the length of time that people can attend to a lecture to be about 12 to 15 minutes; students then need to process what they are learning or their minds drift away). During direct teaching, the instructional challenge for the teacher is to ensure that students do the intellectual work of organizing material, explaining it, summarizing it, and integrating it into existing conceptual networks. This can be achieved by having students do the advance organizing, cognitively process what they are learning, and summarize their learning. Breaking up lectures with short cooperative processing times gives the instructor slightly less lecture time but enhances what is learned and builds relationships among students. It helps counter what is proclaimed as the main problem of lectures: The information passes from the notes of the teachers to the notes of the student without passing through the mind of either one.

Base Groups

Base groups are long-term, heterogeneous Cooperative Learning groups with stable membership whose primary responsibility is to provide each student the support, encouragement, and assistance needed to progress academically. Base groups personalize the work required and the learning experiences in the course. They consist of three or four participants who stay together during the entire course, perhaps exchanging information about the materials they have to learn.

Information about a number of specific Cooperative Learning methods have been reviewed and an overview of some of the Cooperative Learning procedures are presented in the following text.

A. Learning Together (Johnson and Johnson, 1975)

This method possesses four basic elements: (a) Positive interdependence (b) face to face interaction among group members (c) individual accountability for mastering assigned material and (d) instruction of students in appropriate interpersonal and small group skills.

B. Jigsaw (Aronson et al., 1978)

Jigsaw method ensures active individual participation and group cooperation by arranging tasks. So that each group member possesses unique information and thus has a unique role to play. The group product cannot be completed unless each member does his or her part, just as jigsaw puzzle cannot be completed unless each piece is included.

C. Group Investigation (Sharan, 1984)

This method was developed in Israel. In group investigation, students form two to six members group work together using cooperative inquiry, group discussion and cooperative planning and projects. They select the topics and break them into individual tasks and eventually the group makes a presentation or display to communicate its findings to the class and is evaluated based on the quality of its report.

Several cooperative learning methods have been developed by Slavin and others in John Hopkins University. Collectively these methods are known as Student Team Learning. They are:

1. Teams-Games-Tournament - TGT (Slavin, 1985)

TGT calls for students to work together in four to five member heterogeneously grouped teams to help one another to master content and prepare for competitions against other teams. After the teacher presents the material to be learned, team members work together to study from worksheets by discussing the material and tutoring and quizzing one another. Cooperative practice in this form continues throughout the week in preparation for tournaments for which, students are assigned to three person tables composed of students from different teams who are similar in achievement. The three students at each table compete at academic games covering the content taught and practiced that week. Students can earn points by answering questions correctly by successfully challenging and correcting the answers of the other two students at the table. Since they are competing against peers of similar achievement, low achievers have just as much opportunity to earn points for their teams as high achievers do. Points are summed to determine each team's score and the teacher prepares a news letter to recognize successful teams.

2. Student Teams Achievement Division - STAD (Slavin, 1985)

It uses the heterogeneous grouping and Cooperative Learning procedure with a quiz. Quiz scores are translated into team competition points based on how individual students' scores compare with the scores of other students in their achievement division and individual's points are combined to yield team totals. STAD depersonalises the competitive elements. Students in STAD classroom try to do this best on quizzes that they take individually.

3. Jigsaw II (Slavin, 1985)

In this method the teacher does not need to provide each student with unique materials. Instead, all students begin by reading a common narrative but

when each student in the group is given a separate topic on which to become an expert. Jigsaw II incorporates that additional element of competing through a class news letter.

4. Team Assisted Individualization - TAI (Slavin, 1985)

It is an adaptation of individualized mathematics instruction that introduce Cooperative Learning methods and team competition with group reward. TAI students working cooperatively in pairs or triads within their teams by tutoring, quizzing and otherwise helping one another to master individually assigned content. At the end of the week, the students take individualized criterion referenced tests, and their scores are used both for individual accountability purposes and for assigning team points for competitions.

5. Cooperative Integrated Reading and Composition - CIRC (Slavin, 1985)

An innovative approach to the problem of follow up time in the upper elementary grade is a programme called Cooperative Integrated Reading and Composition. In this programme students work in four member Cooperative Learning teams. The teams contain two pairs of students from the different reading groups. Rather than working on workbooks during follow up time, students engage in a series of activities with one another.

D. Turn to your Neighbourhood

Students pair up with another student to discuss an idea, to write or to draw as instructed by the teacher. They may be asked to share their work with the class.

E. Pairs of Pairs

Students write out a list of responses to a question or statement such as all the states and their capitals students know. They first work in pairs and make

one list. Two pairs then get together and make a single combined list. All the members of the group are responsible to know what is on the list.

F. Numbered Heads Together

The teacher has students numbered off within group, so that each student has a number 1, 2, 3, 4 or 5. The teacher asks a question. Students "put their heads together" to make sure that everyone on the team knows the answer. The teacher calls a number (1, 2, 3, 4 or 5) and students with that number can raise their hand to respond.

G. Inside-Outside Circle

Students stand in pairs in two concentric circles. The inside circle faces out; the outside circle faces in. Students respond to teacher questions as they rotate to each new partner.

2.1.3 Peer Teaching

The concept of peer teaching gained importance as an instructional strategy since the early 1970's when researchers approached the area of small group instruction as a thrust point in educational research. Peer teaching refers to children teach other children of their age who cannot gain an average level of learning outcomes (Allen, 1976; Ehly and Larsen, 1980).

Topping (1988) suggested the positive aspects of peer teaching which enhances optimum learning as the end results. In peer teaching children themselves act as the teachers and this strategy improves the attainment in the subject area for both the 'teachers' and the 'taught'. By adopting this instructional strategy one-to-one attention and individualization of learning is possible. Peer Teaching in essence promotes Cooperative Learning with all its positive effects on achievement.

Many teachers, formally or informally have used tutoring in some shape or forms. Arrangements which have some of the features of present day tutoring have been reported from ancient Rome and in the early practices of Judaism. Towards the middle of the 18th century, grouping of pupils with reference to their chronological age became a common practice.

First systematic use of Peer Tutoring in the world is associated with the name of Andrew Bell, who was appointed as superintendent of a charity school for the orphaned sons of soldiers at Madras. When the school teachers are resistant to some of the new educational ideas he wished to introduce, he turned to experimenting with monitors or peer tutors using these new ideas. He rapidly became aware that the use of children to teach other children was an innovation of greater significance (Topping, 1988).

2.1.3.1 *Peer Tutoring: The prototype*

Joseph Lancaster opened a school in 1801 (Borough Road School) for 350 boys in London. He arranged classrooms on the basis of attainment and deployed monitors and assistant monitors to teach class to ensure that the pupils helped each other. Bell reported in 1817 that in England and Wales about 100,000 children were being taught by the Bell-Lancaster System.

The prototype of today's Peer Tutoring is the Bell-Lancaster system started in the 18th century. During 1960's when individualisation of instruction became a common slogan, educationists developed the possible solutions based on the old ideas of Bell and Lancaster. The 'Tutorial Community' of Melaragno and Newmark incorporated the systematic and universal use of peers as mediators of instruction. The first report on this 'Tutorial Community' appeared in 1969, but the most easily available source of programme description is a piece by Melaragno in the 1976 compilation by Allen. Gartner *et al.* (1971) were

documenting the resurgence of interest in modern Peer Tutoring. Series of articles on Peer Tutoring appeared in the Times Educational Supplement during the first half of 1970s.

In many classrooms at all levels of education, individual learners have minimal control over learning interactions and hence are excessively dependent on external control by teachers. There are four major characteristics of environment conducive to responsive and independent learning. They are (i) learner must be able to initiate rather than merely react to the stimuli controlled by another (ii) sharing of activity low skilled and more skilled performances between whom there is a positive social relationship (iii) reciprocity or mutual influence with each participant in the interaction modifying the behaviour of other and (iv) learning context relates to the amount and type of feedback provided for the initiation of the learner. Peer Tutoring satisfies all of these characteristics.

Peer Tutoring is a way of tapping valuable processes within the bounds of the curriculum. According to Topping (1988) Peer Tutoring can be supported on the following grounds:

- a. *Socio-Psychological*: it offers close personal contact in an otherwise remote environment.
- b. *Pedagogical*: students are active as learners, teaching enhances learning for the tutor, and there is an increased cooperation, motivation and self-esteem.
- c. *Economic*: a saving on staff time and energy.
- d. *Political*: it helps students to adjust with the curriculum as a system.

2.1.3.2 Peer Tutoring: A positive outlook

In most classrooms the resources of the students are seriously underutilized on a rigid competitive or individualistic goal structure in which the

teacher is supposed to teach each student. The opportunities for students teaching other students are lost. Yet, considerable research indicate that many students may learn better from their peers than from adults and that many students benefit greatly from teaching other students. Communication may be more effective, amount of reinforcement may increase and peer group encouragement may be more motivating when students teach each other. Although some students may be clumsy teachers at first, the research indicates that given practice and reinforcement for effective tutoring, most children can become rather good teachers.

Children usually acquire the tutoring procedures in a great deal more quickly than teachers anticipate. Characteristically, they show considerable self discipline during the tutoring process which is an indication of what they found itself reinforcing. The interaction among the vast majority of peers is usually manifested positive and good relationships endure beyond the tutoring situation.

Student tutors have better understanding of the problems that students face in attempting to master the subject matter. They were also more interested in student's daily lives, study experiences and personalities. Staff tutors used their subject-matter expertise more often and displayed more authoritarian behaviour than student tutors. Peer Tutoring emphasised social and affective reinforcement. It is difficult to reconcile the conflicting results or to draw a confident conclusion about reinforcement in the tutoring situation (Moust and Schmidt, 1994).

Peer Tutoring programmes had a positive effects on the tutees. These programmes have definite and positive effects on the academic performance and attitudes of those who receive tutoring and also have positive effects on children who serve as tutors, in attitudes and understanding (Cohen *et al.*, 1982). In developed countries, schools often use Peer Tutoring as a corrective programme for academically handicapped students. Given appropriate behavioural

structure, Peer Tutoring can become a powerful classwide instructional intervention. Peer Tutoring programmes with applied behavioural analysis techniques to increase the academic success of large numbers of student cost effectively (Enright and Arelrod, 1995).

One to one attention and individualisation of learning is possible with Peer Teaching procedures. Opportunity for demonstration of required behaviour is also emphasised. The tutee receives regular and responsible feedback on the correctness of their efforts and is subjected to close monitoring which maximises the amount of time spent on the task. Advantages of Peer Tutoring include: (i) ready availability of verbal and other social reinforcement; (ii) establishing good personal relationships. Though the quality of teaching provided by tutors may not match that of professional teachers, there is a great deal more of it, fused with the rosy glow of companionship (Topping, 1988).

The peer group strategy helps in sustaining interest of learners. Peer Tutoring also helps in increasing individual attention of the learners. As Peer Tutoring is done in small groups, there is close contact within the group. It helps the learners to progress at their own pace and seek immediate guidance whenever required.

Peer tutors can be of assistance to teachers on the following aspects:

- (1) Bringing the weak and average learners upto the level of minimum essential competencies;
- (2) Diagnosing the learning difficulties of the learner and reporting these to the teacher for remedial work;
- (3) Developing a sense of cooperation among learner to help each other in learning;
- (4) Explaining duties and school routine to the peers, whenever essential;
- (5) Giving drill exercise to reinforce certain concepts;
- (6) Helping recreation;
- (7) Activating the rate of learner participation;
- (8) Demonstrating for effective learning.

The nature of interaction within the tutoring situation had also been the subject of considerable study (Topping, 1988) where, tutors are merely required to provide feedback, they are likely to be less effective than where, they actively involve themselves with the materials. There is evidence that older tutors tend to be more demanding of tutees and more likely to depend on verbal interaction while younger tutors interact in a more direct and pragmatic manner.

2.1.3.3 *Peer Tutoring - Types and Techniques*

Peer Tutoring is of several types. Two learners may help each other. In a group, a learner who is a high-achiever in one subject leads others and like that seeks help from others in the subject of his own deficiency. Sometimes a Peer Tutor may be self appointed to his co-learners. In peer grouping, groups are formed by bringing together bright, average and weaker pupils. They help each other. Since they are of the same age level, they contribute a cohesive group. One learner activates the other. Peer group leader is chosen by the group from within the group. Anyone who knows better in a particular field becomes the leader of the peer groups for activities in that field.

There are two principal types of Peer Tutoring, 'Cross-age' tutoring, where the tutor is several years older than the student being taught, and 'same age' Peer Tutoring where one student tutors a classmate. Cross-age tutoring is more often recommended by researchers than same age tutoring (Devin-Sheehan *et al.*, 1976), partly because of the obvious fact that older students are more likely to know the material, and partly because students may accept an older student as a tutor but resent having a classmate appointed to tutor them. Most often it is recommended that tutors and tutees be separated by two to three grade levels. Some times Cross-age tutoring is used within students in need of special assistance, in which case a few older students may work with a few younger students. Cross-age tutoring prone an excellent mechanism for facilitating social interchange and

growth between members of a school. From the tutees point of view, being a friend, of a high status older child is likely to enhance the youngsters self-esteem. Children are extremely important to children as they approach and enter adolescence and retreat from the influence of parents.

Other tutoring schemes have involved, for example entire fifth grade classes tutoring entire second grade class. In these cases, half of the younger students might be sent to the older students and half of the older students are sent to the younger student's classroom. Otherwise Peer Tutoring may take place in the cafeteria, library, although research does not indicate any advantage of same or cross sex pairing for tutoring.

Some workers favour larger tutoring programmes on the assumption that they generated more positive effects while others felt that tutor and tutee became bored during lengthy periods. Positive effects was associated with short time programme (5 days) and academic gains had been evident even from single session tutoring studies. Frequencies of tutoring had ranged from 10 minutes to 60 minutes a session, and from one session per week to five sessions per week. All of these studies had reported academic or social benefits with less than four hours tutoring per week. However other studies with less than four hours tutoring per week had reported minimal gains, while all studies which had incorporated more than four hours per week had reported significant gains.

In Peer Tutoring the number of tutees per tutor remained sparse and conflicting. The literature reviewed highlights the promise of Peer Tutoring as a viable, low-cost means of effective instruction. Almost all studies of Peer Tutoring use tutoring in addition to regular instruction, and compare results to those for regular instruction alone. For this reason, at least part of the effectiveness of Peer Tutoring could be attributed to the extra instruction time rather than to the value of Peer Tutoring itself. However viewed as an addition to

regular class instruction, Peer Tutoring does seem to be an effective way to provide appropriate levels of instruction to students.

2.1.4 Cognitive Entry Behaviour (CEB)

The basal cognitive capacities of the learner at the time of entering into an academic course is termed as the Cognitive Entry Behaviour (CEB) of the particular learner. Obviously, these entering capabilities are different in different learners with regard to the strength and sharpness. This include all the cognitive abilities namely thinking (divergent and convergent), reasoning (inductive and deductive), imagining and problem solving. Generally, in Education and Psychology the expression of the academic excellence of the learner which stemmed out of these cognitive abilities are regarded as the general intellectual abilities. In the present study the term Cognitive Entry Behaviour is used to denote the Verbal and Non-Verbal Intelligence of the sample at the time of commencing the experimental study. Hence, a brief description of the various theories of intelligence are presented.

The concept of intelligence is one of the major issues in the field of Psychology and Education. Intelligence is the most researched source of individual difference. Since a number of definitions are available for intelligence, the concept is regarded as a multi definable one. Vernon (1960) reported three broad groups of definitions viz., Biological, Psychological and Operatonal. Biological definitions explain intelligence as related to adaptation to the environment. Psychological definitions in contrast, stress the measurement of intelligence to compare and differentiate between individuals. Gross (1987) consolidated some of the psychological definitions which are briefly described in the following.

An individual is intelligent in proportion as he is able to carry on abstract thinking (Terman, 1925). Intelligence is the aggregate global capacity to act purpose fully, think rationally and to deal effectively with environment (Wechsler, 1944). Intelligence is the general cognitive ability (Burt, 1955). It is the effective alround cognitive abilities, to comprehend, to grasp relations and reasons (Vernon, 1969). Intelligent activity consists in grasping the essentials in a situation and responding appropriately to them (Heim, 1970).

Intelligence is operationally defined in terms of tests designed to measure it, that is, Intelligence is what Intelligence tests measure. While such a definition is intended to handle the problem of multidefinable nature of intelligence, it failed to test what it is that Intelligence tests measure.

A brief description of the various theories of Intelligence are given briefly in the following part.

2.1.4.1 Factor Analytic Theories

Theories of Intelligence which follow the factor analytic tradition are briefly presented in the following text.

a. Spearman's Two Factor Theory (1927)

As a result of factor analytic studies, Spearman believed that every intellectual activity involves both a general factor ('g' for Genral Intelligence) and a specific factor (S). The difference between individuals are attributable to difference in 'g'.

b. Thurston's Primary Mental Abilities (1938)

Thurston found out that intellectual ability consists of seven distinct factors which are called as Primary Mental Abilities (PMA) namely Spatial, Perceptual Speed, Numerical Reasoning, Verbal Meaning, Word Fluency, Memory and Reasoning.

c. *Hierarchical theories (1950)*

This theory was proposed by Burt and Vernon (1950). The major assumption is that, there is a 'g' factor common to all tests. They identified a series of group factors (Major and Minor) in between 'g' and 's' factors. According to this theory, 'g' is what all tests measuring, the major or group factor are what some tests measuring. Minor group factors are what particular tests measure, while specific factors are what particular tests measure on specific situations.

d. *Guilford's Structure of Intellect Model (1967)*

Guilford (1967) classified the intellectual activity along three dimensions as Operation, Content and Products. In the original model Guilford identified 5 kinds of Operation, 4 kinds of Content and 6 kinds of Products consisting of 120 abilities. Later it is changed to 6 kinds of Operation, 5 kinds of Content and 6 kinds of Products, collectively constituting 180 Mental Abilities.

e. *Fluid and Crystallised Intelligence*

Working with the framework of factor analytic approach Cattell (1963) proposed a theory which can reasonably explain the different theories discussed earlier. The 'g' factor is subdivided into two major dimensions.

(i) Fluid intelligence (gf)

It is the ability to solve abstract relational problems that are not taught and relatively free of cultural influences. It increases from childhood to adolescence and levels off during young adulthood and after that begins a steady decline.

(ii) Crystallised Intelligence (gc)

It is the result of an individual's learning which increases throughout the life span.

2.1.4.2 *Alternative Models*

Information processing theory and theory of Multiple Intelligence are presented as Alternative Models of Intelligence.

1. *Information Processing theory*

In this theory, intelligence is conceptualised as the steps or processes people go through in solving problems. One person may be more intelligent than another, because they move through the steps more quickly and effectively as they are more familiar with the required problem solving step.

2. *Theory of Multiple Intelligences*

Gardner (1984) suggested that it was necessary to distinguish at least seven different and independent forms of Intelligences. This theory includes a small set of human Intellectual abilities, of which all individuals are capable by virtue of their membership in the human species. Owing to heredity, early training or consistent interaction of these two factors, some will develop certain kinds of intelligence more efficient than others, but every normal individual develops each Intelligence to some extent.

Definition of Multiple Intelligence

Multiple Intelligence is conceptualised as follows. *Human intellectual competence must entail a set of skills of problem solving (enabling the person) to resolve genuine problems, or difficulties that he/she encounters and when appropriate to create an effective product and must also entail the potential for creating problems, thereby laying the ground work of the acquisition of new knowledge (Gardner, 1984).*

The theory of Multiple Intelligence include seven different and independent types of intelligences.

- i) *Logical-Mathematical Intelligence*: The ability which involves the formal operations of symbols according to accepted rules of logic and mathematics:
 - ii) *Linguistic Intelligence*: Which makes use of rhetoric for persuasion, allows the individual to develop semantic storage of informations including its own operations.
 - iii) *Spatial Intelligence*: The capacity of the individual to perceive the visual world accurately, to perform transformations and modifications upon one's initial perceptions and to be aspects of one's own visual experience even in the absence of relevant physical stimuli.
 - iv) *Bodily-kinesthetic Intelligence*: This intelligence describes the abilities to use body or parts of the body to solve problems as to produce worthwhile products or displays. The capacity to control bodily motions and to handle objects skillfully are the central core of this type of Intelligence.
 - v) *Musical Intelligence*: This includes the capacity for initiation of vocal targets, for sensibility to relate as well as absolute pitch and for appreciating various kinds of musical transformations.
 - vi) *Interpersonal Intelligence*: The ability to notice and make distinctions among other individuals, and in particular among their moods, temperaments, motivation and intentions.
 - vii) *Intra-Personal Intelligence*: The capacity to access one's own feelings, one range of affects or emotions. The capacity to effect discriminations among these feelings and eventually to label them in symbolic codes; to draw up on them as a means of understanding and guiding one's behaviour.
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2.2 RELATED STUDIES

Studies relating Cooperative Learning with Achievement and Peer Teaching with Achievement were mostly conducted by researchers in developed countries. The studies reviewed are presented in this part of the report.

2.2.1 Studies Relating Cooperative Learning as Facilitator of Achievement

There is a growing consensus among researchers that Cooperative Learning can have a positive effect on student achievement under certain circumstances. However, there is considerable debate about what these circumstances are, and of equal importance, why Cooperative Learning would be expected to affect achievement. The following review of related studies will give the picture more explicit.

Thordike (1938) investigated whether two or more individuals could solve a problem creatively better than one working alone and reported that *the superiority of "two heads to one" was well established.*

Yuker (1955) and Smith *et al.* (1957) found that *cooperative group discussions were superior to competitive group discussions in facilitating individual memory of what was discussed.*

Laughlin *et al.* (1969) studied the individual versus triadic performance on a uni-dimensional complementary task and found the *superiority of triadic group performance over Individual Performance.*

Fay (1970) found that fifth and sixth grade girls *learned a great deal more when they were members of cooperative groups than when they belonged to competitive groups.*

Hamblin *et al.* (1971) conducted a study and has demonstrated that children from various socio-economic classes, between the ages 3 to 11 in

classroom ranging in size from 4 to 17 members *achieve more when they are working under a cooperative goal structure compared to an Individualistic one.*

Watson and Johnson (1972) found in their studies that on problem solving tasks *a cooperative goal structure would result in higher achievement than would the use of an Individualistic goal structure.*

Wodarski *et al* (1973) compared students' Achievement as a series of Maths problem solving within co-operative, Individualistic and Mixed (partly cooperative and partly Individualistic) goal structures. The results clearly demonstrated that the student *Achievement was highest in the cooperative goal structure, next highest in the mixed, and lowest in the Individualistic.* Similarly, Okun and Divester (1974) found in their studies that when the task was some sort of problem solving activity, *a cooperative goal structure results in higher Achievement than does a competitive goal structure.*

Johnson and Johnson (1974) also studied whether cooperative tasks and reward structures affect learning outcomes positively. The study obtained *positive relationship between Cooperative Learning and the Achievement of children.*

De Vries *et al.* (1974) found that the use of cooperative goal structure will promote the cognitive beliefs that *the subject matter area is important, that the student can affect his achievement in the class, and that the material is not too difficult to master.*

Hulton (1974) in his study, found that students in a cooperative situation compared with competitive one attach *greater importance to academic achievement and believe that their peers have a positive interest in their success in learning.*

Edwards and De Vries (1974), De Vries (1974) and De Vries *et al.* (1974) found that, when tasks become somewhat more complex, *cooperation among students results in higher achievement than does competition.*

Johnson and Johnson (1975b) conducted rigorous studies on cooperative learning and compared the effects of cooperative, competitive and individualistic goal structures on pupils' academic achievement, attitude and ethnic relations. The result of the study showed that there was *not only better achievement but also positive attitude towards others in cooperative learning methods than those worked competitively or individually.*

To study the effectiveness of cooperative and competitive goal structures on student's academic performance, Wheeler (1977) conducted a study and reported that, *students who preferred to be cooperative, learned best in a cooperative programme.*

Studies conducted by Johnson *et al.* (1979) on student achievement of different type of tasks under cooperative, competitive and individualistic condition found that *students who worked cooperatively produced better work sheet answer sheets than those worked competitively or individually.*

Johnson and Johnson (1979) conducted a study as the type of tasks and student achievement and attitude in interpersonal cooperation, competition and individualisation. The result revealed that there is a *positive correlation between achievement and attitude in interpersonal cooperation.*

Sharan (1980) extensively reviewed the major researches on Cooperative Learning and reported that, of the 27 studies done investigating the effects of Cooperative Learning programmes on student learning; 19 studies showed a *significant positive effect on student learning. Most studies showed that high, average and low achievers gain equally from cooperative experience.*

Studies conducted by Sharan (1980b) to investigate the recent methods in Cooperative Learning and its effect on achievement, attitude and ethnic relations and obtained *positive relationship between Cooperative Learning and students' academic achievement.*

Slavin (1980) reported that in the improvement point system in Cooperative Learning method, *Student Teams Achievement Division (STAD) student's academic performance increased.*

Sharan and Hertz - Lazarowitz (1980) studied the effect of Group Investigation (GI) on academic achievement and social relation on a sample of elementary school children. The investigators reported that, *the more pervasive the cooperative climate, the more positive the students toward both the learning tasks and toward each other.*

Johnson and Johnson (1981) examined the effects of cooperative and individualistic learning experiences on inter ethnic relations and found *higher performance on individual problem solving in cooperative than individualistic situation.*

A large scale analysis by Johnson *et al.* (1981) has indicated that interpersonal competition while facilitate subject learning for college students, is *less effective at primary and secondary level than goal structures utilizing cooperative methods.*

Glass *et al.* (1982) investigated the effect of class size on student learning and found that *class size has a significant effect on student learning not only in skill based subjects like language learning but also in other subjects.*

Studies on the effect of Cooperative Learning on pupils' academic achievement were summarised by Slavin (1983) and concluded that the *positive effects of Cooperative Learning methods on student achievement* appear equally

and frequently in elementary and secondary schools in urban, suburban and rural schools and in subjects as diverse as Mathematics, Social science and reading.

Fraser and Walberg (1984) give evidence from their studies that *Cooperative Learning was more successful* than either Competitive or Individualistic learning.

Studies analysed by Slavin (1985) reported that changing from a traditional classroom to a cooperative one does not diminish student achievement, *most often, significantly improves achievement*. In some studies, methods are used in which groups are rewarded based on their group member's learning, *positive effects on achievement were consistently found*.

Newmann and Thompson (1987) investigated the effects of Cooperative Learning on achievement in secondary schools has established that the *Cooperative Learning methods can be very effective in increasing student achievement* in many subjects and grade levels, when student groups are rewarded.

Kutnick (1988) examined the effect of Cooperative Learning on students' academic performance, self-esteem, racial school relationship and found that there was corresponding *increase in students' academic performance, self-esteem and inter racial friendship*.

Sharan and Schachar (1988) conducted a study on the effect of Cooperative Learning method on achievement in Social Science of secondary school pupils. They compared the classroom interaction and academic achievement with traditional classes. The study revealed that the normally *disadvantageous students learned at rates above those of the socially advantaged*.

Christison (1990) studied the effects of Cooperative Learning on academic achievement and self-esteem and found that Cooperative Learning has *a significant and positive effect on pupils academic achievement and self-esteem.*

Watson (1991) investigated the effects of Cooperative Learning on cognitive achievement of high school Biology students. The results indicated *significant differences in achievement (as compared to control groups) in favour of students using Group Educational Module (GEM) materials and students in Cooperative Learning situations.*

Olsen and Kagan (1992) investigated the effect created by the Cooperative Learning on second/foreign language and proposed several advantages for Cooperative Learning: increased student talk, more relaxed atmosphere, greater motivation and *increased amount of comprehensible learning out put.*

Holt (1992) studied the effects of Cooperative Learning as maximizing the language acquisition, academic achievement and social development of secondary school students. The results showed that Cooperative Learning is a valuable strategy for teaching secondary school students, especially useful with students from diverse linguistic and cultural backgrounds who are learning English as a second language. It proved as a method for managing diversity, channeling peer influence into a *positive force for improving school performance.*

Berg (1993) conducted a study on 11th graders and assessed the feasibility and effectiveness of instruction that used a structured Cooperative Learning technique. The study reveals that verbal interaction influenced learning and appeared to be a mediator of the effects of student characteristics on achievement. *Students responded positively to the experience and to work cooperatively and productively together.*

√ Kumar and Rai (1994) studied different Cooperative Learning methods and reported that Cooperative Learning is a method *which improved learning and social relations among classmates.*

Achievement Motivation shown by students of cooperative and individualistic learning groups were compared and studied by Daniels (1994) and reported that students in Cooperative Learning groups were more achievement motivated than those of Individualistic learning groups and *they showed academic excellence.*

Bramlett (1994) investigated the effects of Cooperative Integrated Reading and Composition (CIRC), the nine, third grade classes (n=198) and compared with nine control group classes (n=194). The result indicated that CIRC group outgained the control groups on reading comprehension measured by California Achievement Test, when groups were divided into reading levels, *significant differences were found for lower group that favoured CIRC.*

In a study on inter-disciplinary teaching and Cooperative Learning by Jansen and Susan (1994) on middle school children and contended that an interdisciplinary curriculum and *Cooperative Learning are well suited to middle school students.* The study points out that the approach helps students to learn higher order thinking skills and improve social skills.

√ Shachar and Sharan (1994) examined the effects of Cooperative Learning with the group investigation method on 197, 8th grade students in Israel. Result shows that *Cooperative Learning groups achieve better.*

In another study conducted by Shachar and Sharan (1994) investigated the effects of Cooperative Learning and whole class instruction on 8th grade students. *Results indicated that the two instructional methods affected the students very differently. These differential effects were found as a function of their ethnic or*

Socio-Economic background. Cooperative Learning method was found highly effective for achievement than the whole class instruction.

Mulryan (1994) studied the effects of behaviour and perceptions of high and low-achieving 5th and 6th graders and observed student behaviour in cooperative small group Maths, whole class Maths and reading group settings. The sample consists of 24 boys and girls from fifth and sixth graders. The results suggest that *the high-achieving students showed more time on task, more quality, improve involvement and more active participation.*

Lazarowitz *et al.* (1994) conducted study on a learning unit in Earth Science was taught to 11th and 12th graders using a Jigsaw group mastery learning approach (n=73) and an individualised mastery learning approach (n=47). Pre and Post-tests of an academic achievement and affective outcomes were administered. The results showed that students in the Jigsaw Mastery Learning group had *significantly greater achievement on academic outcomes and in the affective outcomes.*

In their study, Reuman and Mac Iver (1994) 134-154 seventh graders were assigned to heterogeneous classrooms, in which Student Team Learning (STL) techniques were used. STL produced achievement benefits but with stronger effects for course grades. The results show that the effect of STL on both achievement and motivation varied by subject area. In language, arts, maths and science, STL raised students self *concept of academic ability self reported academic effort* and lowered students evaluation anxiety.

Morales (1994) reported that Cooperative Learning provides opportunities for face to face interaction among students while enhancing their nature and secondary language development, raising self-esteem and *improving academic achievement.*

Archer-kath, *et al.* (1994) compared the impact of individual feed back (IFB) with the impact of group feed back (GFB) on achievement, attitudes and behaviour in Cooperative Learning groups. 56 American 8th grade students were assigned to conditions stratified for academic ability and knowledge of the German language and culture. Subjects were trained in the skills of perceiving, supporting asking for information, giving information, asking for help and giving help. The results indicate that individual feed back is more efficient than group feed back for increasing achievement among group members and influence towards *higher achievement with in Cooperative Learning groups.*

Cooperative Learning and achievement of female students was studied by Dillow (1994) and found out that female students in a *cooperative setting achieved greater than in a normal class room.*

Kenny (1995) conducted a study on 229 gifted and 557 non gifted 4th grade students and assessed the effects of both heterogeneous and homogeneous grouping in Cooperative Learning settings on the academic performance. Result of the study shows that *an increase in the academic performance of the gifted students.*

Randon (1995) studied the effect of autonomous learning and Cooperative Learning on learner's performance and revealed that the idea of *group interaction establishes a valuable framework* in which individuals learning process can develop.

Stevens and Slavin (1995) studied the long term effects of comprehensive Cooperative Learning approaches to elementary reading and language arts on the achievement, attitude and metacognitive awareness of 635 elementary students. 72 academically handicapped students were main streamed in the new programme and compared to 65 controls in pull-out-programme. The result

showed that main streamed subjects had *significantly higher achievement in reading, vocabulary, reading comprehension and language expression than controls.*

↓ Purdom and Kromrey (1995) reports the findings from a series of 3 studies on Cooperative Learning at the college level, using the Jigsaw Cooperative Learning approach in which students read new materials to learn with their peers in small group. Cooperative Learning procedure being increasingly used in the college classes as an attempt to *promote academic achievement, increase student participation and encourage positive attitude towards learning.*

Nichols and Hall (1995) examined the effects of a form of cooperative group interaction (Student Team Achievement Division) as student motivation and achievement in a high school Geometry class. The sample consisted of 96, 10th grade students as control group receiving traditional instruction and are of two treatment groups receiving Cooperative Learning instruction. Results showed that students in the cooperative treatment groups exhibited *significantly greater gains than the control group in achievement in Geometry.*

In his study Cooper (1995) found Cooperative Learning foster the critical thinking skills that are lacking in many students. In many such groups the feedback that students receive on verbal and written responses from other students and teachers improves thinking skills. Students may also *gain from teaching other students since such teaching may require meta cognitive strategies that foster critical thinking.*

In a study conducted by Dugan (1995) used Cooperative Learning groups to integrate autistic students with a fourth grade social studies class. Their academic performance and academic engagements were assessed. It was found out that *academic benefits more associated for the autistic students in the cooperative group.*

In an experimental study conducted by Dori (1995) the effect of various teaching methods on Israeli students' achievements, acquiring laboratory skills and the dimensions of learning activities were investigated. Experimental group was taught using the Jigsaw method of Cooperative Learning strategy and to a control group using the traditional method. Results indicated that students who studied by the *Jigsaw method has higher achievement than students in the control group and high achievements were obtained with students in the experimental group*. In classes that improved in academic achievements, the Cooperative Learning activity increased positive attitude among the students.

↳ Towensend (1995) examined the relationship between 162 form two students' academic task values in the school subjects, Mathematics and Language and their perceptions of social satisfaction in classroom using a cooperative goal structure or in regular class rooms. Task values for *academic performance in mathematics and language were found higher in class rooms using cooperative goal structure*.

↳ Brush (1996) in a study examined the achievement and behaviour differences between elementary school students completing ILS (Integrated Learning System) activities in a traditional, individualised format and students complete the same activities in a Cooperative Learning groups. Achievement and attitudinal data were collected for all fifth grade students in the selected school prior to the experiment and at the end of the treatment period. Results revealed that students using an ILS for mathematics instruction *performed better on standardised tests and their attitudes were more positive*.

↳ Leikin and Zaolavsky (1997) studied student interactions and academic performance in Mathematics in a Cooperativve Learning setting. The sample was 426, six grade students and found out the *increased student interaction and academic performance*.

↓ Academic performance of 620 gifted elementary students in a Cooperative Learning set up was studied by Grambo (1997). The study revealed that *Cooperative Learning procedures increased the academic performance of the target sample.*

Petty (1997) conducted a study on increasing student engagement and retention through the use of cooperative groups and Authentic Assessment on elementary school students in Illinois. The results indicated an *improvement in student involvement and increase in Retention and transfer of learning.*

↓ In his study Shaw (1997) described a Cooperative Learning project with fourth grade teachers and students, discusses the K-W-D-L (what we know-what we want to know-what we did-what we learned) for mathematical problem solving. He concluded that the K-W-D-L technique *enhanced students' reasoning and achievement.*

Vojnovich (1997) described a Cooperative Learning programme in a study to increase student motivation and learning achievement. The targetted population was 1,926 High school students in Chicago city. Result of the study shows that a *higher level of critical thinking and increased learning achievement for the sample. Cooperative activities resulted in a comfortable peer environment also.*

2.2.2 Studies Relating Cooperative Learning and Achievement showing No Achievement Gains

Miller and Hamblin (1963) conducted experimental studies on learning strategies and found no *achievement benefits for cooperation when compared with individualistic and competitive learning strategies.*

A series of studies conducted by Haines and Mckeachie (1967) and Wheeler (1972) have found that while daily performance is superior under a

cooperative goal structure there are *no significant differences on examination performance* among individuals who studied in a competitive or cooperative group.

Several lengthier studies of cooperation that lasted for two to ten weeks, conducted by Wheeler and Ryan (1973) on elementary school students found *no achievement benefits for cooperation as compared with individualistic or control (traditionally taught) treatments*. A study conducted by Peterson and Janicki (1979) obtained similar result.

The studies of Julian and Denry (1967), Clifford (1971) and Scott and Cherrington (1974) indicate that *competition may be superior to co-operative or individualistic goal structures* when a task is a simple drill activity or when sheer quantity of work is desired on a mechanical or skill-oriented task that requires little if any help from another person.

Sharan (1980a) reviewed 27 major researchers on Cooperative Learning programmes on student achievement and found that there were no significant differences in seven of the studies and one study favoured the control groups.

Slavin (1983) summarised the findings of 33 studies in regular elementary or secondary school pupils, which investigated the effects of Cooperative Learning programme on student learning, comparing the Cooperative Learning program to traditional control groups. 10 of the 33 studies found *no experimental control difference in achievement and in one study there was a significant difference favouring the control group*.

A study by Hythecker *et al.* (1984) indicated that students who were taught a learning strategy (not working) by interacting with both a micro computer and a cooperating partner *performed significantly worse than student's who received the same training individually*.

Slavin (1985) summarised the studies and found that learning together model was found in one study to *be equal to the control group in achievement effects* and lower than the control group in another.

Courtney *et al.* (1994) examined the rationale and the research base supporting the use of Cooperative Learning methodologies and conducted an evaluation of the effectiveness of the methodology for graduate level educational statistics course. 30 graduate students in a traditional lecture Introductory Statistics course and 32 students involved in the same course taught by a different instructor using the Cooperative Learning methodology completed multiple choice examinations at equal interests. The result indicated *no significant differences in achievement occurred between the two methodologies.*

Mulryan (1994) investigated some factors associated with differential involvement and participation of students' in cooperative small group. Observed 48, 5th and 6th grade students responses in cooperative small group in Maths. The results suggest that students generally spent more time on task, in groups than the whole class setting. Students were more active participants in groups. Boys showed more initiating behaviour than girls. *Low-achievers are more passive than high achievers in cooperative small groups.*

Abu and Flowers (1997) investigated the effect of Cooperative Learning methods on Achievement, Retention and Attitude of high school students. A nutrition unit was taught to 91 high school Home Economics students (Experimental group) using Cooperative Learning and 106 controls. An Achievement test immediately after instruction and a retention test 3 weeks later showed *no difference in achievement, retention or attitudes.*

2.2.3 Studies Relating Peer Teaching with Achievement - Showing Achievement Gains

Most of the studies relating Peer Teaching/Tutoring and Achievement were conducted by researchers abroad and they highlight positive results. Such studies were reviewed and presented in this section.

Top and Osguthorpe (1987) found that Peer Tutoring is often used as much to *improve the achievement of low-achieving older students* as to improve that of the students being tutored.

Many researchers (Devin-Sheehan *et al.*, 1967; Ehly and Larson, 1980; Palincsar *et al.*, 1987) evaluating the effects of Peer Tutoring on student achievement has generally found that this strategy *increases the achievement of both tutees and tutors.*

Greenwood (1993) studied the achievement placement and services and benefits of classwide Peer Tutoring on middle school children (1-4th graders) and reported statistically *significant improvement in their academic achievement.*

Cline and Mclaughlin (1993) used two versions of class wide Peer Tutoring in spelling on fourth grade students. Both experiments demonstrated moderate to substantial improvement in two peer tutoring condition and only slightly *better performance in paired tutoring using the language master.*

Ezell *et al.* (1994) conducted Peer Tutoring interventions to improve the reading accuracy, fluency, comprehension and vocabulary of 14 children (age 6-11 years) with special needs. Interventions were conducted in 4 settings and 9 target children and 26 of their typical peers participated as tutors. The result shows that reading post-test scores exceeded pre-test scores across all children and interventions. *Childrens academic responding was greater during peer tutoring than during routine classroom instruction.*

Riggio *et al.* (1994) examined the effect of student academic ability on the cognitive gains achieved through a Reciprocal Peer Tutoring (RPT) instructional strategy in which students prepare to teach a peer, actually teach a peer and maintain accountability for the process. 206 undergraduates were assigned to 1 of 4 different ability pairing based on College Grade Point Average (GPA). The result by ANOVA demonstrated that *all ability pairs achieved approximately the same cognitive gains over the course*. All subjects using RPT exhibited *significantly higher cognitive gains than subjects who were not using RPT strategies*.

Lumpe and Staver (1995) examined the effect of peer collaboration on 25 high school Biology students' acquisition of concepts related to photosynthesis and interactions in Collaboration Peer Group (CPG) situation to determine how their interactions relate to the development of concepts associated with photosynthesis. The results suggest that subject working in *peer group situations developed more scientifically correct concepts of photosynthesis than subjects working alone*. Two types of peer interactions consonant and dissonant were identified *as enhancing concept development*.

Greenwood and Delquadri (1995) conducted a study on classwide Peer Tutoring and the prevention of school failure and reported that Class Wide Peer Tutoring (CWPT) is *a potential tool for preventing early school failure and highlights CWPT has long term positive effects on academic outcome*.

Fantuzzo *et al.* (1995) conducted a study on the effects of parent involvement in isolation or in combination with Peer Tutoring on student self-concept and Mathematics achievement. The sample has 72, 4th and 5th grade students evidencing difficulties in Maths. The results show that students with parental involvement with *reciprocal Peer Tutoring intervention displayed higher*

level of accurate Mathematics computations than students with parental involvement or reciprocal peer tutoring alone.

Kurian (1995) conducted a study to explore the effect of Peer Teaching on Achievement Motivation and Mathematics achievement on 60 students of standard VII. Experimental design was adopted. The Post-test results pointed out that the experimental group showed *improved achievement in Mathematics along* with improved level of achievement motivation.

Cooperative Learning and Peer Teaching strategies have also been investigated to find out the effect on disabled students as sample. Results of the following studies indicated the positive influence of Cooperative Learning/Peer Teaching on academic achievement of disabled students.

Simmons *et al.* (1994) examined the effect of instructional complexity and role reciprocity within Classwide Peer Tutoring (CWPT) on the reading of hearing disabled (n=58), non-disabled low performing (n=27) and average achieving students (n=33). 23 teachers and their students were assigned randomly to one of the 4 CWPT conditions (standard CWPT with role reciprocity, standard CWPT without role reciprocity, modified CWPT with role reciprocity and modified CWPT without role reciprocity) 8 teachers and their students were controls. The results pointed out that students in CWPT *conditions significantly out performed controls on a reading fluency measure.* The group with modified CWPT *with role reciprocity showed significantly greater achievement* in comprehension than controls.

Hunt *et al.* (1994) investigated the extent to which three second graders with multiple severe disabilities acquired basic communication and motor skills within Cooperative Learning activities conducted in their general education class rooms, with gradually finding assistance from the instructor, the non disabled

members provided cues, prompts and consequences to promote the disabled member's learning. Results indicate that the subjects independently *promote targeted basic skills within cooperative academic activities*.

Wright *et al.* (1995) describe a spanish vocabulary Peer Tutoring programme for students with learning disabilities in foreign language study. 16 high school students enrolled in a modified spanish II class participated. Results indicate that in reciprocal Peer Tutoring sessions, subjects changed roles as tutor and tutees during practice of individualised lists of vocabulary and idioms. *High cumulative daily levels of spanish words were learned by all of the tutees*.

CONCLUSION

Many researchers were interested in investigating the effect of Cooperative Learning Strategy and Peer Teaching on the cognitive and affective outcomes of students from Primary level upto College level. Almost all of the studies reviewed were conducted abroad. Experimental studies on Small Group Instructional-Learning Strategies found to be a topic of importance in the last three decades of the century. Even though good number of studies facilitating cognitive as well as affective outcomes, it is also noteworthy that (1) a good number of studies do not favour Cooperative Learning Strategies as achievement facilitator. At least two researchers have reported that Control group taught through strategies other than Cooperative Learning facilitate achievement. (2) Studies incorporating differential achievements by subjects of differing age, socio-familial environmental background, sex and ability level and the like were not seen well studied. (3) Only very few studies have been conducted in the Asian countries.

An analysis of the literature revealed that while trying to qualitatively improve the primary education in Kerala researchers hardly tried to experiment

the Small Group Instructional-Learning Strategy, such as Cooperative Learning and Peer Teaching. It is in this circumstances, the investigator made an attempt to explore effectiveness of Cooperative Learning Strategy with built-in-Peer Teaching, over the Conventional method of Teaching Malayalam Language Skills.

CHAPTER 3

METHODOLOGY

Selection of Variables
Objectives
Hypotheses
Procedure

METHODOLOGY

The present investigation is an attempt to study whether Achievement in Malayalam Language Skills vary when select Instructional-Learning Strategies namely 'Cooperative Learning Strategy with built-in-Peer Teaching' is adopted in a conventional class. Attempt was also made to study how select Cognitive Entry Behaviour of the students influence Achievement in Malayalam when select topics of the prescribed syllabus is taught through the select Instructional-Learning Strategies.

The methodology followed at the various phases of the investigation is described in this Chapter and presented under the following sections.

3.1 SELECTION OF VARIABLES

3.2 OBJECTIVES

3.3 HYPOTHESES

3.4 PROCEDURE

3.1 SELECTION OF VARIABLES

A careful review of literature was made to identify Instructional-Learning Strategies developed on the basis of research on human learning and communication. These strategies also employ a combination of human and non-human resources to bring about desirable changes in school children. These were categorised under broad classification as varied Methods of Teaching, Models of Teaching and Strategies of Instruction and Learning. It is worthwhile to note that efficiency in learning depends on student characteristics both Cognitive and Non-cognitive and Socio-Economic background of parents and other environmental variables having varied influence on teaching.

Those variables affecting student's performance in Malayalam Language Skills were specifically selected by the investigator for the present study.

3.1.1 Variables Selected

The following variables related to achievement in school subjects have been selected for the study.

3.1.1.1 *Independent Variables*

a. Cooperative Learning Strategy with built-in-Peer Teaching

(i) Cooperative Learning Strategy

The concept of Cooperative Learning refers to instructional methods and techniques in which students work in small groups (four to six members) and are rewarded in some way for performance as a group. Many studies in Western countries reveal that using Cooperative Learning as an Instructional Strategy, teachers can overcome the major difficulties of using the conventional method of teaching such as diverse academic and non academic interest of students, competition among learners, low interpersonal-relation among learners, low acceptance and personal support among students and minimum emotional involvement. Major Cooperative Learning methods identified are Student Team Learning (Slavin,1980), The Learning Together Model (Johnson and Johnson, 1975), Group Investigation Model (Sharan and Sharan, 1976), The Jigsaw Method (Aronson *et al.*, 1978), Team-Games Tournament (Slavin, 1983) and Team Assisted Individualization (Slavin, 1985). The Learning Together Model has been selected for the present study.

(ii) Peer Teaching Strategy:

Peer Teaching refers to children teach other children of their age who cannot gain an average level of learning outcomes (Gartner *et al.*, 1971; Allen,

1976; Ehly and Larsen, 1980). In Peer Teaching, children themselves act as the teachers in turns. By adopting this Instructional Strategy, one to one attention and individualisation of learning is possible. Peer Teaching in essence promotes Cooperative Learning with all its positive effects on achievement.

Peer Teaching therefore was not treated as a separate variable but it has been integrated with Cooperative Learning strategy.

b. Cognitive Entry Behaviour

- (i) Non-Verbal Intelligence
- (ii) Verbal Intelligence

3.1.1.2 *Dependent Variables*

Since the study focus on the influence of select Instructional-Learning Strategies and Cognitive Entry Behaviour viz., Non-Verbal Intelligence and Verbal Intelligence of the subjects on Achievement. Achievement in Malayalam Language skills (Objective wise and Total score) was treated as Dependent Variables. Specific variables coming under these categories are Achievement and retention in Malayalam Language skills;

- (i) Knowledge category
- (ii) Comprehension category
- (iii) Application category, and
- (iv) Achievement in Malayalam Language Skills (Total score)

Measurement of the above mentioned four categories of Achievement was made.

3.1.1.3 *Control Variables*

Variables controlled in the present study are:

- (i) Previous Knowledge of the Subject Matter
- (ii) Non-Verbal Intelligence and
- (iii) Verbal Intelligence

3.1.1.4 Basal Variables

The following were the basal variables in this study.

- (i) Sex of the sample, and
- (ii) Socio-Economic Status

3.2 OBJECTIVES

The present investigation was intended to study the effectiveness of Cooperative Learning Strategy with built-in-Peer Teaching over Conventional Method of Teaching select topics in Malayalam Language for standard VI pupils. Hence the study was framed as an experimental study. The design adopted was *Pre-Test Post-Test equivalent Group design*.

Cooperative Learning Strategy with built-in-Peer Teaching has been selected as the Experimental variable. The changes in Achievement in Malayalam Language skills (Dependent Variable), if any, have been explored in comparison with the Conventional Method of Teaching. The popular method adopted in the classroom is objective based instruction. Other variables namely 'Non-Verbal Intelligence' and 'Verbal Intelligence' have been treated as Independent Variables. One group was treated as Experimental group and another group was treated as Control group.

Three sets of specific objectives were formulated for the present investigation. These objectives are presented below.

- 3.2.1.a To compare the mean Post-Test scores of Achievement in Malayalam Language Skills-Post-Test I (Objective wise and Total score) of Experimental group and Control group for the Total Sample and Subsamples based on Sex.
- 3.2.1.b To compare the mean Gain scores of Achievement in Malayalam Language Skills of Experimental group and Control group for the Total Sample and subsamples based on sex (Tested immediately after teaching).
- 3.2.1.c To compare the mean retention scores of Achievement in Malayalam Language Skills-Post-Test II (Objective wise and Total score) of Experimental group and Control group for the Total Sample and Subsamples based on sex (Tested one month after completing the experiment).
- 3.2.2. To study the effectiveness of Cooperative Learning Strategy with built-in-Peer Teaching over Conventional Method of Teaching on Achievement in Malayalam Language Skills when the initial difference in select variables namely, Pre-Test, Non-Verbal Intelligence and Verbal Intelligence of the subjects are controlled.
- 3.2.3.a To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of standard VI (Total Sample, Boys and Girls).
- 3.2.3.b To study the Main effect and Interaction effect of Instructional- Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on Achievement in

Malayalam Language Skills (Post-Test I) of pupils of Standard VI (Total Sample, Boys and Girls).

- 3.2.3.c To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).
- 3.2.3.d To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).

3.3 HYPOTHESES

The hypotheses formulated and tested for the study are the following.

- 3.3.1.a There will be significant difference in the mean Achievement in Malayalam Language Skills Post-Test I scores (Objective wise and Total score) between Experimental group and Control group for the Total Sample, Boys and Girls.
- 3.3.1.b There will be significant difference in the mean Achievement in Malayalam Language Skills Gain scores between Experimental Group and Control Group for the Total Sample, Boys and Girls.
- 3.3.1.c There will be significant difference in the mean Achievement in Malayalam Language Skills retention scores-Post-Test II (Objective wise and Total score) between Experimental group and Control group for the Total Sample, Boys and Girls.

- 3.3.2. Pupils taught through Cooperative Learning with built-in-Peer Teaching Strategy will have high mean Achievement in Malayalam Language Skills (Post-Test I and Post-Test II) than that of pupils taught through Conventional Method of Teaching.
- 3.3.3.a There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of standard VI (Total Sample, Boys and Girls).
- 3.3.3.b There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal-Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of standard VI (Total Sample, Boys and Girls).
- 3.3.3.c There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).
- 3.3.3.d There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal-Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).

3.4 PROCEDURE

The research design adopted for experiment, the procedure of data collection, scoring and consolidation of data and statistical techniques used for processing the data are described in this section.

3.4.1 The Research Design

As already mentioned, the experimental design used in the present study was the *Pre-Test Post-Test Equivalent Group Design*. The design is represented graphically as follows:

$G_1 O_1 X O_2$

$G_2 O_3 C O_4$

$O_1 O_3$ - Pre-Test

$O_2 O_4$ - Post-Test

$O_2 - O_1$ - Gain Score

$O_4 - O_3$ - Gain Score

G_1 - Experimental Group

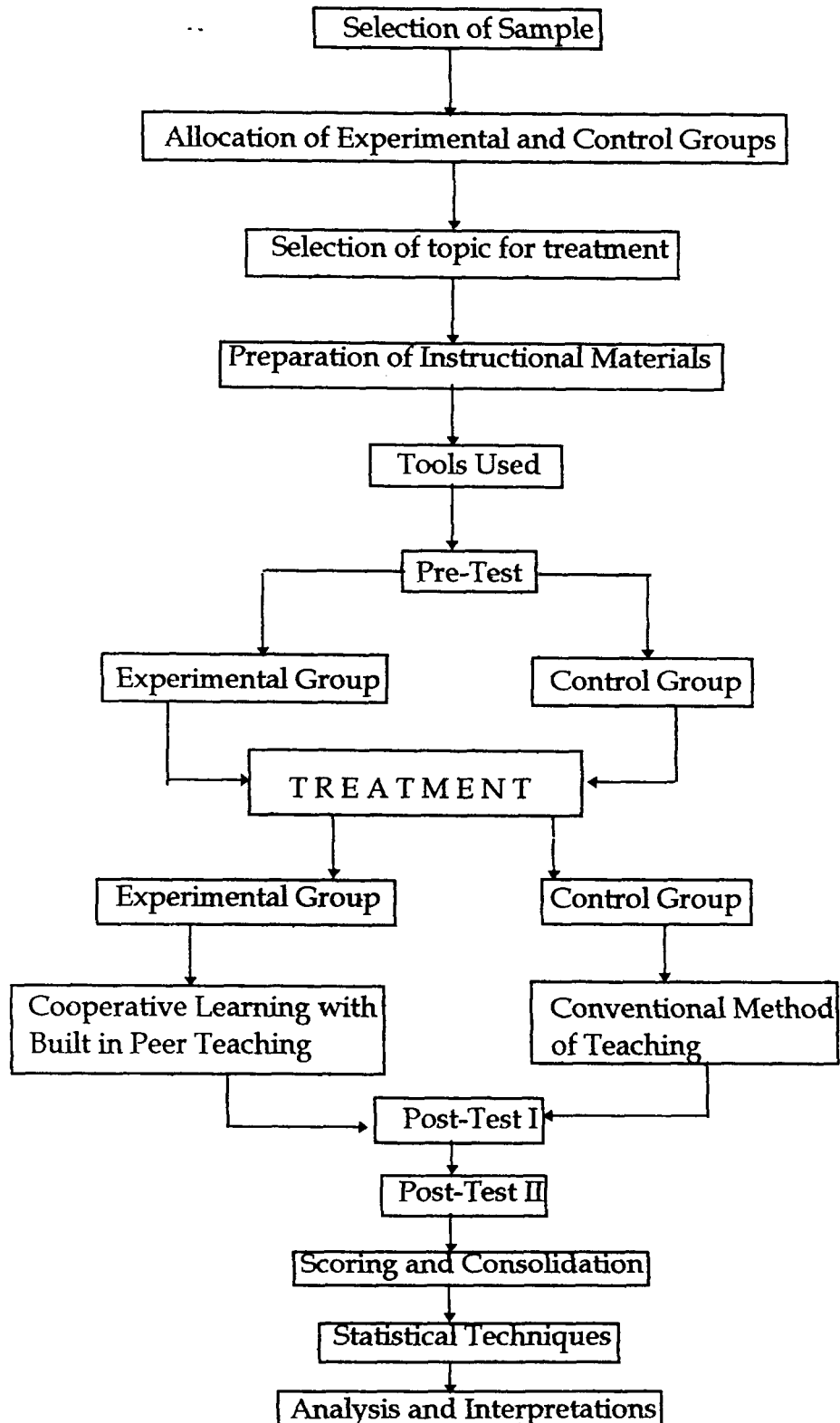
G_2 - Control Group

X - Application of Experimental treatment

C - Application of Control treatment

The Design of the present investigation is illustrated in the following Flow chart.

Flow Chart showing the Design of the Study



3.4.1.1 *Sample for the Study*

Population for the present study covers the pupils of Primary schools of Kerala. For experimentation, the investigator selected pupils of Upper Primary schools. Care was taken to ensure that the subjects selected are equivalent in many respects. The following points were considered for selection of pupils for the study.

Rural-urban locality - rural and urban subjects were selected in 1:1 proportion.

Boys-Girls - It was decided to select only co-educational schools. Majority of primary schools in Kerala are co-educational. This will also ensure almost equal number of boys and girls in the sample.

Instructional efficiency - Instructional efficiency is an important criteria which decides more or less the quality of learning of the pupils. This was ascertained from the results of the pupils in the terminal examination in the previous years.

Based on the above criteria it was decided to select Four Upper Primary schools from Ernakulam district of Kerala. Other pertinent points considered for selecting the sample schools were; i) the schools are accessible for the investigator to conduct the experiments, ii) the schools are located in such a way that the subjects in the select schools where experiment is conducted do not consult each other and exchange study materials.

Assuming that each class of the select schools consist of 30 pupils. One class division from each school was selected at random. The sample for experiment thus consists of 120 pupils of standard VI (60 pupils treated as Experimental group and 60 pupils treated as Control group). The actual number of sample in the Experimental and Control group at the entry stage of the experiment are shown in the following break-up.

Nature of Group	Sex	No. of subjects at Entry stage
Experimental Group	Boys	30
	Girls	30
Control Group	Boys	30
	Girls	30
Total		120

3.4.1.2 Allocation of Experimental and Control Group

Being an experimental study the investigator felt that it would be difficult to carry out the experiment on a large sample. Since random assignment to subjects in the Experimental and Control group is not plausible in an organised set up of the schools and to get a more natural setting for the conduct of the study it was decided to select intact classroom groups. A class was therefore considered as the unit of the study. Two intact groups from two standard VI classes were taken as Experimental and Control group. The schools were allocated as Experimental and Control by tossing coin. Details of the schools are given in the following break-up.

Sl. No.	Name of school	Nature of Group
1	St. Joseph U.P. School, Mulavukad	Experimental
2	S.N.U.P. School Ayyappankavu	Experimental
3	H.I.H.S. Ponnarimangalam, Mulavukad	Control
4	Govt. U.P. School, Kaloor	Control

3.4.1.3. *Selection of Topic for Treatment*

The investigator studied carefully the curriculum, syllabus and Text-book prescribed for standard VI in Kerala for selection of suitable topic for instruction through Cooperative Learning strategy. Four experts in language testing including two Malayalam teachers were consulted and the following topics were selected for treatment.

1. Prose - Sasradham sanjarikoo
2. Poetry - Moham
3. Grammar - Euphonic Combination (Sandhi)

The investigator made sure that the select topics were amenable for teaching through both 'Cooperative Learning with built-in-Peer Teaching Strategy and Conventional Method - objective based instruction'.

3.4.1.4 *Preparation of Instructional Materials*

Based on the topics selected for treatment as stated earlier, the investigator prepared separate instructional materials for Experimental and Control treatment.

A. Lessons Based on Cooperative Learning Strategy

There are varied formats of Cooperative Learning Strategy. The variations are based on the nature of the content, instructional objectives to be attained and size of the class. The investigator carefully studied the different Cooperative Learning and Peer Teaching procedures developed and practiced by renowned researchers in the field. The Learning Together Model (Johnson and Johnson, 1975), Jigsaw (Aronson *et al.*, 1978), Team Games Tournament, Student Teams Achievement Division, Team Assisted Individualisation and Cooperative Integrated Reading and Composition (Slavin, 1983), Group Investigation

(Sharan, 1984) were perused critically to understand the feasibility of teaching Malayalam Language for standard VI pupils through Cooperative Learning Strategy.

Peer Tutoring programmes suggested by Devin-Sheehan *et al.* (1976) and Topping (1988) were also referred.

i) Planning

It was decided to prepare Lesson Plans for Cooperative Learning using the steps proposed by Johnson and Johnson (1975). The topic selected for treatment were divided into subunits in the following order.

- | | | | |
|----|---------|---|---------------|
| 1. | Prose | - | six subunits |
| 2. | Poetry | - | four subunits |
| 3. | Grammar | - | four subunits |

The topics selected and the specific objectives set (Knowledge, Comprehension and Application) for each teaching unit was the same for both the Experimental and Control treatment.

Peer Teaching procedures were used as a built-in-programme with the Cooperative Instructional-Learning strategy. After careful examination and scrutiny by two experts in Education and Teaching of Malayalam Language, it was decided to adopt Learning Together Model (Johnson and Johnson, 1975) as an Instructional Strategy to teach Malayalam Language on the following grounds.

Many researchers have reported that Learning Together Model is the closest of the Cooperative Learning models to 'pure' cooperation. Also whenever problem solving, divergent thinking, quality performance of learning tasks are desired, Learning Together Model will be a more effective Instructional-Learning Strategy to ensure cooperation among the learners.

ii) Preparation

The investigator prepared Lesson Plans separately for Prose, Poetry and Grammar. Each Lesson Plan was divided into different Instructional-Learning phases. The major characteristics of the different phases of Learning Together Strategy are the following:

- a) *Presentation of the goal as a group goal.*
- b) *Encouraging and sharing the ideas and materials.*
- c) *Encouraging the division of labour.*
- d) *Rewarding the group for successful completion of the task.*

The initially prepared draft Lesson Plans were edited in consultation with experts and then the draft Lesson Plans were finalised for Try-out. Necessary instructions which are to be given for the students and the time duration for a Prose, Poetry and Grammar lessons were fixed as 90 minutes each. Therefore two consecutive periods of 45 minutes duration were made available for Try-out.

iii) Try-out

The draft Lesson Plans were tried out on a representative class of standard VI students in a primary school of Calicut district, Kerala. The Try-out was done in two sessions of one and a half hour duration for each lesson in Prose, Poetry and Grammar.

Before the Try-out, the investigator clarified the purpose of such a class to the students and sought full cooperation from their part. The investigator divided the students into four small group of eight students each and arranged the seating of the groups in an horse-shoe format. The horse-shoe format is chosen due to the following considerations.

- a) Pupils can easily help each other.
- b) Greater level of intergroup interaction is possible.
- c) Pupils can share the materials and teach the group members.
- d) Every student has an access to other members in the group, and
- e) Teachers can see every student and class management became easy.

A diagrammatic representation of the seating arrangement is given in Figure 3.1.

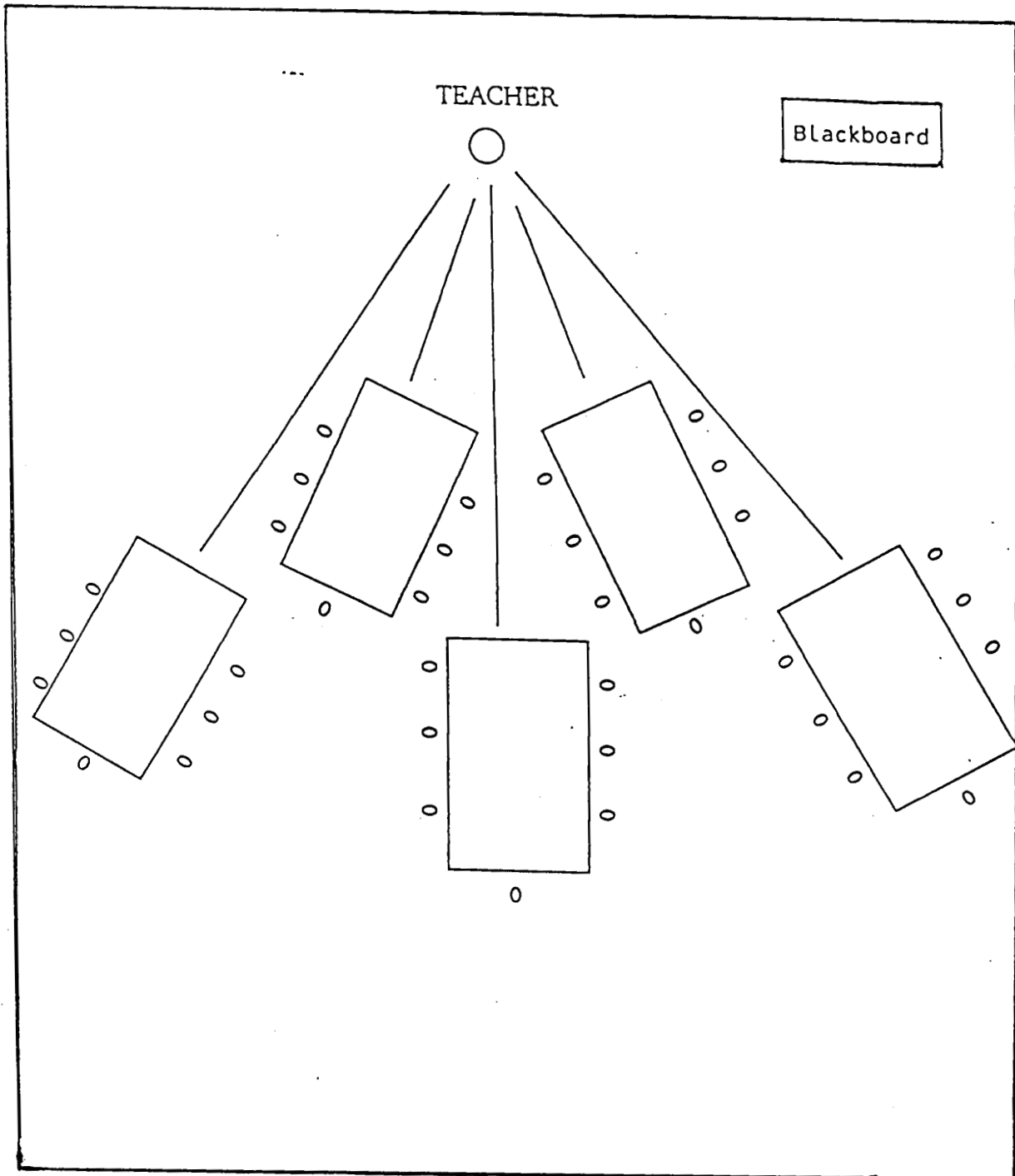


FIGURE 3-1 Diagrammatic Representation of the Seating Arrangement

After arranging the seats as mentioned earlier, the investigator assigned names to each groups and instructed them that all the instructional-learning activities of the class will be based on the group name. This is done because of (a) group name will generate we-feeling among the members in the group. (b) all activity can be referred as group activity. (c) group process will be enhanced. (d) competition among the individual members will be reduced, and (e) each group will try for the group goal.

The investigator tried out the instructional-learning activities according to the phases of the Lesson Plan designed earlier. After the class sessions, the Lesson Plans were further scrutinised based on the reactions of the students and opinion of the teachers who observed the classes. These Lesson Plans were later used for treatment in the Experimental group. Lesson Plans for Cooperative Learning Strategy are given as Appendix I, II and III.

B. Lesson Based on Conventional Method of Teaching

Lesson Plans for teaching through the Conventional Method to the Control group were prepared on the basis of Instructional-objectives of teaching of Malayalam Language based on Bloom's Taxonomy modified and adopted by National Council of Educational Research and Training and accepted by the Department of Public Instruction, Government of Kerala. Instructional-objectives were formulated on the basis of the nature of the content selected earlier.

The objectives were fixed in observable and measurable behavioural terms. The content was analysed into facts and concepts. On the basis of the analysis, of content the entry behaviours of the pupils were identified. Blue print of the lesson format is given in the following.

I. Introduction

- i) Testing of the previous knowledge
- ii) Motivating the learners to receive the lesson

II. Development

- i) Presentation of objectives
- ii) Presentation of the content
- iii) Selection of learning experience
- iv) Appropriate evaluation techniques

III. Review and Assignment

- i) Final review

Traditional Method of Teaching was used for the Control group. No separate teaching aids were made for the Control group, but available teaching aids in the school were used.

3.4.1.5 Other Tools Used

The investigator selected tools which have proven psychometric properties to measure the Non-Verbal Intelligence and Verbal Intelligence (treated as Cognitive Entry Behaviour) of the subjects. A brief description of these tools are presented in this part.

A. Standard Progressive Matrices Test (Raven, 1958)

Non-Verbal Intelligence of the subjects were measured by administering the standard form of the Raven's Progressive Matrices Test. This non-verbal Test is intended to estimate the subjects' ability to discern and utilise a logical relationship presented by non-verbal materials. The test consists of five subtests

of twelve items each. In each item a part of the geometrical design is missing. Six or eight alternatives are given for each design. All of these fit the missing part, but only one logically belongs to it. The test is a popular measure of the 'g' factor of Intelligence.

Validity of the test has been studied in a variety of the usual ways. When Stanford-Binet test was used as the criterion, correlation varied from 0.50 to 0.86. The reliability coefficients as reported by Raven vary from 0.80 to 0.90. In a study conducted by Nair (1972) in Kerala, the reliability coefficient was found to vary from 0.70 to 0.86 by split-half method and from 0.84 to 0.91 by test-retest method.

B. Kerala University Verbal Group Test of Intelligence (Nair *et al.*, 1968)

This test was used for measuring the Verbal Intelligence of the sample. The test battery consist of five sub-tests, each containing twenty items. The details of the sub-tests are the following.

Verbal Analogy

This involves the ability to use the relationship between two things or ideas and to apply the relationship to other situations.

Verbal Classification

Each item is a set of five words of which four can be grouped together according to some principle or law. Subjects have to choose those word that stands out of this group.

Proverbs

Each item of this test is a proverb followed by four statements explaining its meaning. The subjects have to choose the statement which comes very close to the idea contained in the proverb.

Number series

In each item, a series of numbers formed by a particular relationship is given, of which one is missing. The pupil has to choose the correct missing number from those given as four alternatives.

Verbal reasoning

Each item is a problem requiring perception of some sort of relationship. Pupils have to select the correct answer to the problem from four alternatives given.

The test is prepared as re-usable booklet and therefore, separate score sheets are provided for marking the responses separately for each subtest. To mark the responses, students have to put an 'X' mark for the correct answer in the circles provided in the score sheet.

As per the test manual, high internal validity has ensured through item analysis. Intercorrelation of the component scores with the total score of Intelligence have also been worked out. The validity coefficient of subtests 1 to 5 with school marks as external criterion were 0.61, 0.53, 0.65, 0.67 and 0.45 respectively. Factorial validity was also established.

Test-retest reliability of the whole test was, 0.79 as per the test manual. Corrected split half reliability coefficient for the whole test is 0.94.

C. General Data Sheet

A General Data Sheet was used for collecting information about the Socio-Economic Status of the sample. Income level of Parents, Parental Education, Parental Occupation - these categories are included in the General Data Sheet. The sub-divisions and weightage of each categories are as follows.

<i>Income level of Parents</i>	<i>Weightage</i>
Rs.1000	5
Between 1001-2000	10
" 2001-3000	15
" 3001-4000	20
" 4001-5000	25
Above Rs.5000	30
 <i>Parental Education</i>	
Not receive formal schooling	5
Standard I-IV	10
" V-VII	15
" VIII-X	20
PDC, TTC	25
B.A./B.Sc./B.Com.	30
MBBS/M.Ed./B.Sc(Engg.)/MBA/ Phd./CA etc.	33
 <i>Parental Occupation</i>	
Unemployed	5
Unskilled	10
Semi skilled	15
Skilled	20
Semiprofessional	25
Professional	30
Highly professional	35

D. Achievement Test in Malayalam Language Skills (Pillai and Bindhu, 1997)

Achievement Test in Malayalam Language Skills developed by Pillai and Bindhu (1997) was used as the Post-Test I and Post-Test II for measuring the criterion variable. The procedure adopted for the construction of Achievement Test in Malayalam Language Skills is described in the following section.

i) Planning of the Test

The investigator studied thoroughly the curriculum, syllabus and Text-book of Malayalam prescribed for standard VI pupils for the academic year 1997-98. For guidance, the investigator consulted with the subject experts and experienced teachers in Malayalam Language Teaching. Apart from the Text book, the investigator made use of available source books for framing items for the test. The books referred for the purpose are.

1. The Techniques of Language Teaching (Billows, 1961).
2. Language Teaching (Lado, 1964).
3. Educational Measurement and Evaluation (Nunnally, 1972).
4. Language Testing (Lado, 1975).
5. Taxonomy of Educational Objectives Book I Cognitive Domain (Bloom, 1979).
6. Essentials of Educational Measurement (Ebel and Frisbie, 1991).

It was decided to develop the Achievement Test in Malayalam Language Skills consisting both objective type test items and short answer type items for a duration of 60 minutes.

ii) Preparation of the Test

Items for the Achievement Test in Malayalam Language Skills were prepared on the basis of the major objectives of cognitive domain namely

Knowledge, Comprehension and Application. The test items were prepared in such a way as to test the acquisition of select language skills for mastering the content for standard VI. Accordingly, mastery of Vocabulary, Reading Comprehension, Listening Comprehension, Composition and spelling were included in the test. Based on the topics selected, items were prepared. Appropriate weightages were given to the objectives, content and form of questions. The topics include units selected for treatment including Prose (Sasradham Sajnarikoo), Poetry (Moham) and Grammar (Sandhi). They were analysed into Vocabulary, Reading Comprehension, Listening Comprehension, Composition and spelling. Multiple choice Completion type and One word format were included in objective type items.

III. Blue Print

The objectives, content area and the item format were scrutinised by experts in the field of test construction and language education. A blue print ensuring weightage to the objectives, content and forms of questions were then prepared. The blue print is presented in Table 3.1.

Weightage to the Objectives

No.	Objectives	Marks	%
1	Knowledge	6	13
2	Comprehension	28	61
3	Application	12	26
Total		46	100

Weightage to the content

No.	Content	Marks	%
1	Vocabulary	6	13
2	Reading Comprehension	12	22
3	Listening Comprehension	10	22
4	Composition	12	26
5	Spelling	6	13
Total		46	100

Weightage to the form of Questions

No.	Form of Question	Marks	%
1	Objective type	14	30
2	Short answer type	32	70
Total		46	100

TABLE 3.1

Blue Print For Achievement Test in Malayalam Language Skills

Form of Questions Content	Knowledge		Comprehension		Application		Total Marks
	Objective Type	Short Answer	Objective Type	Short Answer	Objective Type	Short Answer	
Vocabulary	1(6)						6
Reading Comprehension		NIL	1(2)	2(5)	NIL		12
Listening Comprehension				2(5)			10
Composition						2(6)	12
Spelling			1(6)				6
Total Marks	6		28		12		46

Note: The number inside the bracket - indicates the number of questions.

Considering the blue print as a basis, the investigator initially pooled 90 items including objective type and short answer types. The item formats of reputed standardised tests in Malayalam Language Skills were referred for developing items for the present test. The prepared items were scrutinised by a team of experts in the field of test construction and evaluation. Some items were deleted and re-edited in the light of expert criticism. Some were modified. Thus a draft test comprising 60 items in Malayalam Language Skills were pooled so that the investigator could select the required number of items as per the Blue Print for the final test. Items were then arranged as Vocabulary (items 1 to 2) Reading Comprehension (items 13 to 26) Listening Comprehension (items 27 to 36) Composition (items 37 to 48) and Spelling (items 49 to 60). General instructions for responding to category of items and scoring key were also prepared. The draft test is presented in Appendix IV.

IV. Try-out

The draft test with 60 objective and short answer type items were tried out on a representative sample of 110 pupils of standard VI from two Primary schools in Calicut district. Before the administration of the test, the purpose was made clear to the subjects. The draft test including response sheet in sufficient numbers were provided to the students. Though the test included all the necessary guidelines about the test, additional informations were given by the investigator wherever necessary.

A scoring key is used for scoring the objective type questions and a scoring scheme is made using predetermined value points for the scoring of short answer type questions.

V. Item Analysis

Item analysis of the objective type questions were done using the method suggested by Ebel and Frisbie (1991). The answer sheets of 110 students were scored. One score was allotted for a correct response for objective type items. For an incorrect answer no score was given. 100 answer sheets were obtained for item analysis after rejecting the incomplete answer scripts. The answer sheets were arranged in the descending order of the total marks obtained by the subjects. From this the upper 27 (27 percent of the total group) answer sheets having highest scores and the lower 27 percent having lowest scores were separated to get two extreme groups.

The indices of item difficulty and discrimination power were computed using the formula suggested by Ebel and Frisbie (1991).

$$\text{Index of item Difficulty} = \frac{U + L}{2N} \times 100$$

$$\text{Index of Discrimination Power} = \frac{U - L}{N} \times 100$$

Where,

U = the number of correct responses in the upper group.

L = the number of correct responses in the lower group, and,

N = the number of subjects in both the groups.

For a short answer type item, two scores were allotted for a fully correct response if it is identical with the scoring schemes. The scores vary depending on the response given by the subjects. The short answer type questions were item analysed by computing the Facility value of each short answer type item suggested by Harper as reported in Association of Indian Universities (1977).

The formula used for this purpose was the following.

$$\text{Facility Value} = \frac{\text{Sum of marks by all candidates}}{\text{Sum of maximum marks obtainable on that question}}$$

The item analysis data is presented in Appendix V.

Objective type items having the difficulty index ranging between .40 and 0.70 with discrimination power .40 and above were readily selected. Fourteen objective type items were selected for including in the final test. Short answer type items having the Facility value between 40% and 60% with discrimination power .40 and above were selected for the final test. Sixteen short answer type items thus selected.

VI. Validity

Validity of Achievement Test in Malayalam Language Skills were found out in two different methods.

Content validity of the Achievement Test in Malayalam Language Skills was ensured by subjecting the test items for expert's criticism. As per the evaluation of the experts, the test content covers the significant concepts and comprehensive enough interms of the instructional objectives.

Criterion related validity was established by correlating the scores on Achievement Test in Malayalam Language Skills obtained from 50 standard VI pupils of a primary school in Ernakulam district with their school marks. Pearson's product moment method was used for this purpose. The correlation coefficient thus obtained was 0.64.

VII. Reliability

The Test-retest reliability of the test was worked out on a representative sample of 50 standard VI pupils from an upper primary school of Ernakulam

district from which data for validity study was taken. Achievement Test in Malayalam Language Skills was administered and the data was collected. After three weeks of time Achievement Test in Malayalam Language Skills was again administered on the same sample. The two sets of scores thus obtained were correlated using Pearson's product moment technique. The reliability coefficient thus obtained was 0.87.

The indices of validity and Reliability indicate that the Achievement Test has acceptable psychometric properties to measure the Achievement in Malayalam Language Skills of standard VI pupils. Achievement Test in Malayalam Language Skills (Final form) is presented in Appendix VI.

3.4.1.6 Data Collection Procedure

The Heads of the Experimental and Control schools selected were contacted through the Head of the Department of Education, University of Calicut. A schedule was fixed for both Experimental and Control schools. The Pre-Test data collection and the Treatment commenced on August 11th 1997 and completed on September 15th, 1997.

1. Administration of Pre-Test

Data on Achievement in Malayalam Language Skills of the subjects in the select four schools were collected prior to the introduction of the treatment. For this, Achievement Test in Malayalam Language Skills was administered as the Pre-Test in all the four classes of the schools selected. This data ensured the entry status of the students in terms of Achievement in Malayalam Language Skills in terms of his/her knowledge regarding the spelling, basic and common usages in Malayalam Language.

Treatment

The Experimental and Control groups were given different treatments.

A. Experimental Treatment

The Experimental group was taught through 'Cooperative Learning Strategy with built-in-Peer Teaching' on the basis of Lesson Plans already prepared. Before the treatment, the seating arrangement of the classroom was slightly altered instead of the conventional seating arrangement of the pupils in rows. The students were divided into 6 groups of 5-6 members and the groups were required to assemble in an horse-shoe format. This arrangement ensured better interaction among the members of a group and wherever necessary more interaction between groups. The movement of the pupils for grouping did not distort the conventional set up of the classroom.

Using this strategy Prose lesson was (Sasradham Sanjarikoo) taught firstly. The Prose lesson was divided into six units. This was followed by the execution of four unit of Poetry lesson (Moham) and lastly the Grammar (Sandhi) was taught, this was divided into four units. Each unit for Prose, Poetry and Grammar were completed in the lapse of one and half hours. Each unit is taught through four phases as described in the Lesson Plan for Cooperative Learning Strategy (Section 3.4.1.4.A). In the first phase the goal of the lesson was presented as a group goal. This was followed by encouraging the students to share the ideas and materials during the instructional process. In the third phase students were encouraged for the division of labour and in the last phase the group was rewarded for the successful completion of the learning task. Four weeks were taken for the teaching of Prose, Poetry and Grammar. The investigator herself engaged in the treatment sessions to reduce variation due to teacher change.

B. Control Treatment

For treatment in the Control group, the nature of the classroom is not altered. No separate spacing and seating arrangements were made. For the Control group the conventional Method of Teaching was used for the topic selected. Only conventional teaching aids were used during this session. Three weeks were taken for the teaching purpose. To avoid the effect of discrepancies due to teacher variation, the investigator herself taught all the lessons in the Control group. The content of Prose, Poetry and Grammar lessons taught were same for both Experimental and Control group. Prose lesson was divided into six units, the Poetry lesson was divided into three units and the Grammar lesson was divided into four units. Each unit is in forty five minutes duration.

3.4.1.7 Administration of Post-Test I

The investigator collected post-test data from the subjects both in the Experimental and Control group the next day after the completion of the treatments. This was with a view to quantify the terminal characteristics of the subjects in terms of Achievement in Malayalam Language Skills.

For this purpose, the Achievement Test in Malayalam Language Skills constructed by Pillai and Bindhu (1997) already used in the Pre-Test was made use of. The investigator prepared the Post-Test materials ready at hand. Before administration, all necessary guidelines were given to the subjects both in the Experimental and Control group about the Post-Test and the purpose of which was made clear to them. The Post-Test was in one hour duration.

3.4.1.8 Data on other Independent Variables

The investigator also collected data on other independent variables viz., Non-Verbal Intelligence and Verbal Intelligence and the basal variable Socio-Economic Status from both the Experimental and Control group. Verbal

Intelligence Test was administered during the first week of the treatment. Non Verbal Intelligence test was given to the subjects during the second week. The General Data Sheet was also given to the subjects with a view to quantify the Socio-Economic Status.

3.4.1.9 Administration of Post-Test II

One month after the treatment both in the Experimental and Control group, the investigator administered the Post-Test again (Post-Test II) to explore the extent of retention in Achievement in Malayalam Language Skills of standard VII pupils.

3.4.2 Scoring and Consolidation of Data

The investigator followed the specific directions given in the respective test manuals for scoring the answer scripts. Punched scoring keys were used for Non-Verbal and Verbal Intelligence Test. Achievement Test in Malayalam Language skills were scored on the basis of the scoring key and prefixed value points. Socio-Economic Status was quantified by giving appropriate weightages assigned to each aspects in the General Data Sheet. Incomplete score sheets were rejected and cases which are complete in all respects were taken into consideration. Thus the final sample of 100 pupils of standard VI was obtained. After scoring the response sheets, the scores were tabulated separately for the Experimental group and Control group. Actual number of subjects available for final data analysis is given in the following break-up.

Nature of Group	Boys	Girls	Total
Experimental	30	20	50
Control	25	25	50
Total	55	45	100

3.4.3 Procedure Used for Analysis of Data

The hypotheses of the present study were tested by employing appropriate statistical techniques. The entire statistical processing was done using computer facility.

3.4.3.1 *Classificatory Techniques*

Technique of classification of the sample into Below Average-Intelligence Group and Above Average-Intelligence Group

Subjects were categorised into Below-Average-Intelligence Group and Above-Average Intelligence Group on the basis of their scores on Intelligence Test. Median was used as cut-off point since the sample for experimentation is not very large. Classification based on Non-Verbal Intelligence and Verbal Intelligence was done separately.

In the present study the median Non-Verbal Intelligence score of boys, girls and total subjects was found to be 24. Subjects who score 23 and below was categorised as Below-Average Non-Verbal Intelligence (BANI) group and those who got score 24 and above were considered as Above Average Non Verbal Intelligence (AANI) group. The categorisation was done separately for boys, girls and total sample.

The actual number of subjects falling under the two category of Non-Verbal Intelligence (BANI and AANI) is given in Table 3.2.

TABLE 3.2

**Number of Subjects under the Category of Below-Average
Non-Verbal Intelligence and Above-Average Non-Verbal Intelligence**

Nature of Groups	Boys		Girls		Total	
	BANI	AANI	BANI	AANI	BANI	AANI
Experimental Group	12	18	6	14	18	32
Control Group	16	9	18	7	34	16
Total	28	27	24	21	52	48

Same procedure was followed for classifying the sample based on Verbal Intelligence. The median Verbal Intelligence score for total sample and boys were found to be 39. Therefore subjects who got a score on Verbal Intelligence 38 and below were considered as Below Average^{verbal}-Intelligence group (BAVI) and subjects who got a score 39 and above were considered as Above Average^{verbal}-Intelligence group (AAVI). For Girls the median Verbal-Intelligence score was 42. Hence girls obtaining 41 and below were categorised Below Average Verbal Intelligence group and those who got a score 42 and above on Verbal Intelligence were categorised as Above Average Verbal Intelligence group. The actual number of subjects falling under the two category of Verbal Intelligence (BAVI and AAVI) is given in Table 3.3.

TABLE 3.3

**Number of Subjects under the Category of Below
Average Verbal Intelligence and Above-Average Verbal Intelligence**

Nature of Groups	Boys		Girls		Total	
	BAVI	AAVI	BAVI	AAVI	BAVI	AAVI
Experimental Group	13	17	5	15	18	32
Control Group	15	10	12	13	27	23
Total	28	27	17	28	45	55

3.4.3.2. Statistical Techniques Used for Analysis of Data

Statistical techniques employed in the present study are given in the following text.

i) Test of significance of Difference between Means of Large and Small Independent Samples.

To compare the Experimental group and Control group with respect to their Mean Pre-Test, Post-Test (Objective wise and Total scores) Gain and retention scores (Objective wise and Total score) Test of significance of difference between means of large and small independent sample was utilized wherever necessary (Garrett, 1981).

The difference between means was tested using two tailed test of significance and the results were interpreted using appropriate degrees of freedom.

ii) Two-way Analysis of Covariance (ANCOVA) with 2x2 Factorial Design

Effectiveness of Cooperative Learning with built-in-Peer Teaching Strategy on Achievement in Malayalam Language Skills over the Conventional Method of Teaching was examined using Two-way factorial ANCOVA. Since the experiment was conducted using intact classes of pupils of standard VI, it was suspected that the classes differ in previous knowledge of subject matter, and levels of Intelligence. ANCOVA was employed with three covariates, 'Previous Knowledge of the Subject Matter' (Pre-Test scores) 'Non-Verbal Intelligence' and 'Verbal Intelligence' separately and in combination of two variables at a time. Analysis of Covariance serves the purpose of statistically removing the effects of extraneous variables from the Dependent Variable (Ferguson, 1996). In the present study, analysis of covariance is employed to remove statistically the

effects of Pre-Test scores, Non-Verbal Intelligence and Verbal Intelligence separately and in combination of two variables at a time.

Analysis of Covariance is a statistical technique used to control or adjust for the effects of one or more uncontrolled variables and permit thereby a valued evaluation of the outcomes of the experiment (Ferguson, 1996). This technique is applied when there are one or more correlated variables existed with the Dependent Variable.

This statistical technique represents an extension of Analysis of Variance to allow for the correlation between initial and final scores. Covariance analysis is especially useful to control statistically the effects of one or more covariates. Through Covariance Analysis, it is possible to effect adjustments in final or terminal scores which will allow for difference in same initial variable.

Post-hoc comparisons were done between pairs of subjects of different levels of the select variables wherever F-ratios are found to be significant in ANCOVA. Scheffé Test (Ferguson, 1996) was used for this purpose on adjusted means. F-ratio between pairs of adjusted means was calculated using the within group variance. The values of F were compared with the values of F' at the 0.05 and 0.01 level. A significant difference between the pairs of adjusted means is judged at the required levels only when the value of F is equal to or greater than F' .

iii. Two-way Analysis of Variance (ANOVA) with 2x2 Factorial Design

Two-way Analysis of variance was employed to study the main effect and interaction effect of Instructional-Learning Strategies and Cognitive Entry Behaviour on Achievement in Malayalam Language Skills of Standard VI pupils.

In 2x2 Factorial ANOVA, two levels of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching Strategy and Conventional

Method of Teaching) and two levels of Cognitive Entry Behaviour (Non-Verbal Intelligence and Verbal Intelligence) were made use of (Above Average-intelligence group and Below Average-intelligence group).

Each of the subjects in the sample was identified as belonging to anyone of the following four combination based on Instructional-Learning Strategy and Non-Verbal Intelligence.

- (1) Cooperative Learning Strategy with Below-Average Non-Verbal Intelligence.
- (2) Cooperative Learning Strategy with Above-Average Non-Verbal Intelligence.
- (3) Conventional Method of Teaching with Below-Average Non-Verbal Intelligence.
- (4) Conventional Method of Teaching with Above-Average Non-Verbal Intelligence.

Similarly, subjects were grouped into four on the basis of Instructional-Learning Strategies and Verbal Intelligence, the groups are as follows:

- (1) Cooperative Learning Strategy with Below-Average Verbal Intelligence.
- (2) Cooperative Learning Strategy with Above-Average Verbal Intelligence.
- (3) Conventional Method of Teaching with Below-Average Verbal Intelligence.
- (4) Conventional Method of Teaching with Above-Average Verbal Intelligence.

Two-way ANOVA with 2x2 factorial design was used to study the main effect and interaction effect of the two Independent Variables on Achievement in Malayalam Language Skills (tested immediately - Post-Test I and after a period of one month - Post-Test II).

Interpretation of the analysed data was done with the help of table of F-values to find whether each F-ratio is significant or not.

ANOVA was followed by Post-hoc comparisons between pairs of different levels of the variables on the Mean Achievement in Malayalam Language Skills scores wherever F-values were found to be significant. Scheffé Test of Post-hoc comparison was used for this purpose (Ferguson, 1996).

CHAPTER 4

ANALYSIS

Preliminary Analysis

Equivalence of Groups

Major Analysis

Mean Difference Analysis

Covariance Analysis

Analysis of Variance

ANALYSIS

The main purpose of the present study was to determine the effectiveness of Cooperative Learning with built-in-Peer Teaching Strategy in teaching Malayalam of standard VI pupils. The study also focussed to determine the single effect and combined effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method of Teaching) and select Cognitive Entry Behaviour namely, Non-Verbal Intelligence and Verbal intelligence on Achievement in Malayalam Language Skills of standard VI pupils. *Pre-test - Post-test equivalent Group Experimental Design* was used to collect the needed data. The data collected and tabulated were analysed using three statistical techniques namely the Test of Significance of Difference between Means, Analysis of Covariance (ANCOVA) and Analysis of Variance (ANOVA).

Analysis of the consolidated data has been done based on three sets of specific objectives set for the study as specified in section 3.2.

Analysis of the data has been classified and presented under the following sections.

SECTION A. PRELIMINARY ANALYSIS

SECTION B. INVESTIGATION OF DIFFERENCE IN MEAN SCORES OF ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS OF EXPERIMENTAL GROUP AND CONTROL GROUP

SECTION C. INVESTIGATION OF THE MAIN EFFECT AND INTERACTION EFFECT OF INSTRUCTIONAL-LEARNING STRATEGIES AND SELECT COGNITIVE ENTRY BEHAVIOUR OF THE SAMPLE ON ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS

4.1.0 SECTION A. PRELIMINARY ANALYSIS

In this section attempt was made to determine the equivalence of the Experimental group and Control group with regard to select variables, since the study was conducted with intact class groups. This was taken up separately for Total sample; Boys and Girls in the sample.

The variables selected to determine the equivalence of the Experimental and Control group was, *i) Previous Knowledge of the Subject Matter, that is, Pre-Test scores ii) Verbal Intelligence and iii) Socio-Economic Status.*

Test of significance of difference between means of large as well as small independent sample with regard to the scores on the three select Control Variables was used for this purpose. Results were interpreted using the two-tailed test of significance for appropriate degrees of freedom.

The means, standard deviations and the critical ratios for the scores on Pre-Test, Verbal Intelligence and Socio-Economic Status of the Experimental group and Control group were calculated. The data and results of the test of significance of difference between means are summarised and presented in Table 4.1.

TABLE 4.1

**Data and Results of the Test of significance
of difference in the Scores of Pre-Test, Verbal Intelligence and Socio-Economic
Status Between Experimental group and Control group (Total Sample, Boys and Girls)**

Variable	Groups compared	Total				Boys				Girls			
		M	SD	N	t-value	M	SD	N	t-value	M	SD	N	t-value
Pre-Test	Experimental	12.8200	5.102	50	0.50	11.8000	5.281	30	0.38	14.3500	4.522	20	0.67
	Control	12.3000	5.292	50		11.2800	4.878	25		13.3200	5.588	25	
Verbal Intelligence	Experimental	41.5200	11.589	50	0.94	38.7667	11.729	30	0.02	45.6500	10.317	20	1.79
	Control	39.5000	9.873	50		38.7200	10.143	25		40.2800	9.940	25	
Socio-Economic Status	Experimental	81.6000	15.100	50	1.43	82.5000	16.281	30	1.76	80.2500	13.424	20	0.15
	Control	77.4000	14.294	50		75.2000	14.030	25		79.6000	14.500	25	

Non-Verbal Intelligence

As per Table 4.1 the obtained critical ratios for Pre-Test, Verbal Intelligence and Socio-Economic Status for the Total Sample, Boys and Girls are found to be not significant even at 0.05 level. (Critical value being less than 2.00 for df 53 and 2.02 for df 43). This means that no significant difference exists in the mean Pre-Test, Verbal Intelligence and Socio-Economic Status scores between the Experimental group and Control group for the Total Sample, Boys and Girls.

The t-test revealed that the Experimental group and Control group (Total Sample, Boys and Girls) are identical or equivalent with regard to the previous knowledge of the subject matter (Pre-Test scores), Verbal Intelligence and Socio-Economic Status.

4.2.0 MAJOR ANALYSIS

The major analysis of the data are presented in two Sections - Section B and Section C in the following order.

4.2.1. SECTION B

INVESTIGATION OF DIFFERENCE IN MEAN SCORES OF ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS OF EXPERIMENTAL GROUP AND CONTROL GROUP

4.2.2. SECTION C

INVESTIGATION OF THE MAIN EFFECT AND INTERACTION EFFECT OF INSTRUCTIONAL-LEARNING STRATEGIES AND SELECT COGNITIVE ENTRY BEHAVIOUR OF THE SAMPLE ON ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS

4.2.1. SECTION B

INVESTIGATION OF DIFFERENCE IN MEAN SCORES OF ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS OF EXPERIMENTAL GROUP AND CONTROL GROUP

In Section B, analysis of data regarding the comparison of Achievement in Malayalam Language Skills of Experimental group taught through 'Cooperative learning with built-in-Peer Teaching' Strategy with that of the Control group taught through 'Objective based instruction' method is presented. Four different analysis was taken up to examine significant changes if any exist in the mean scores on Achievement in Malayalam Language Skills after treatment. This was done for the mean total Achievement score and three objective wise Achievement scores separately for Total Sample of pupils, Boys and Girls. Results were interpreted using two-tailed test of significance. Data, results and interpretations of the results of these four analysis are directed towards seeking answers to objectives given in sections 3.2.1a, 3.2.1.b, 3.2.1.c. and 3.2.2. Analysis and interpretation of data are presented in following four sub-sections.

- 4.2.1.1. **Comparison of Mean Post-Test I scores (Achievement in Malayalam Language Skills) of Experimental and Control Group**
- 4.2.1.2. **Comparison of Mean Gain Scores (Achievement in Malayalam Language Skills) of Experimental and Control Group**
- 4.2.1.3. **Comparison of Mean Retention Scores (Achievement in Malayalam Language Skills Post-Test II) of Experimental and Control Group**
- 4.2.2. **Analysis of Covariance for Achievement in Malayalam Language Skills Post-Test I and Post-Test II (Objective wise and Total Score) For Total Sample**

4.2.1.1. Comparison of Mean Post-Test I Scores (Achievement in Malayalam Language Skills) of Experimental and Control Group

The means and standard deviation of Post-Test I scores (Objective wise and Total score) of Experimental group and Control group and the critical ratios are presented in Table 4.2.

TABLE 4.2

**Data and Results of the t-test for the Mean Scores of Post-Test I
(Objective wise and Total score) Between Experimental group and Control group (Total Sample, Boys and Girls)**

Sample	Variable	Experimental Group			Control Group			t-value	Level of Significance
		M ₁	N ₁	SD ₁	M ₂	N ₂	SD ₂		
Total	Knowledge category	4.64	50	1.562	3.26	50	1.454	4.57	.01
	Comprehension category	19.22	50	6.095	11.10	50	3.960	7.90	.01
	Application category	6.86	50	2.864	3.46	50	3.138	5.66	.01
	Achievement in Malayalam Language skills Total Score	30.72	50	9.296	17.82	50	6.416	8.08	.01
Boys	Knowledge category	4.30	30	1.803	2.76	25	1.363	3.51	.01
	Comprehension category	17.66	30	7.126	10.96	25	3.813	4.22	.01
	Application category	5.96	30	2.918	2.68	25	3.275	3.93	.01
	Achievement in Malayalam Language Skills Total Score	27.93	30	10.732	16.40	25	5.930	4.79	.01
Girls	Knowledge category	5.15	20	0.933	3.76	25	1.393	3.82	.01
	Comprehension category	21.55	20	2.964	11.24	25	4.176	9.31	.01
	Application category	8.20	20	2.238	4.24	25	2.847	5.08	.01
	Achievement in Malayalm Language Skills Total score	34.90	20	4.051	19.24	25	6.685	9.20	.01

As per Table 4.2. the obtained t-values for Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for the Experimental and Control group (Total Sample, Boys and Girls) are found significant at 0.01 level for appropriate degrees of freedom.

The obtained results indicate that, the performance of Experimental and Control group (Total Sample, Boys and Girls) on Post-Test-I are dissimilar. Since high means on Achievement in Malayalam Language Skills were associated with the Experimental group, this group can be considered to be advantageous over the Control group in the case of Post-Test I ie. Achievement in Malayalam Language Skills.

4.2.1.2. Comparison of Mean Gain Scores (Achievement in Malayalam Language Skills) of Experimental and Control Group

The mean Gain scores (Post-Test I minus Pre-Test) of the Experimental and Control group were compared and studied using the Test of significance of difference between means of large and small independent samples.

The means and standard deviations for the Gain scores of both the groups, results of the t-test are presented in Table 4.3.

TABLE 4.3

Data and Results of the t-test for the Mean Gain Scores (Post-Test I minus Pre-Test) Between the Experimental and Control group (Total Sample, Boys and Girls)

Sample	Experimental Group			Control Group			t-value	Level of Significance
	M ₁	N ₁	SD ₁	M ₂	N ₂	SD ₂		
Total	17.9200	50	7.194	5.5200	50	3.448	10.99	.01
Boys	16.1333	30	8.178	5.1200	25	3.407	6.29	.01
Girls	20.6000	20	4.333	5.9200	25	3.511	12.56	.01

The obtained t-values vide Table 4.3 for the comparison of mean Gain scores (Total Sample, Boys and Girls) are found significant at 0.01 level for appropriate df. The results reveal that there exist significant differences in the mean Gain scores of Achievement in Malayalam Language Skills for Total Sample, Boys and Girls. This suggest that the Experimental and Control group (Total Sample, Boys and Girls) are dissimilar with regard to the mean Gain scores.

High mean Gain scores are seen associated with the Experimental group in Total Sample, as well as Boys and Girls. This result indicates the advantage of Experimental group over the Control group.

4.2.13. Comparison of Mean Retention Scores Post-Test II (Achievement in Malayalam Language Skills) of Experimental and Control Group

To study how far the retention scores (Achievement in Malayalam Language Skills - Objective wise and Total scores) differentiate the Experimental and Control group, the mean retention scores (Post-Test II) were compared using the Test of significance of difference between means.

The data and results of the t-test of Post-Test II are presented in Table 4.4.

TABLE 4.4
Data and Results of the t-test for the Mean Retention Scores Post-Test II
(Objective wise and Total score) Between Experimental group and Control group (Total Sample, Boys and Girls)

Sample	Variable	Experimental Group			Control Group			t-value	Level of Significance
		M ₁	N ₁	SD ₁	M ₂	N ₂	SD ₂		
Total	Knowledge category	3.2800	50	1.341	2.0400	50	1.160	4.95	.01
	Comprehension category	15.2400	50	5.461	7.6400	50	3.174	8.51	.01
	Application category	4.3800	50	2.230	2.1400	50	2.030	5.25	.01
	Retention in Achievement in Malayalam Language Skills (Total Score)	22.9000	50	7.715	11.8200	50	4.852	8.60	.01
Boys	Knowledge category	2.6333	30	1.189	1.4000	25	.764	4.47	.01
	Comprehension category	13.0000	30	5.813	6.6800	25	2.322	5.10	.01
	Application category	3.5000	30	1.907	1.4800	25	1.782	4.03	.01
	Retention in Achievement in Malayalam Language Skills (Total Score)	19.1333	30	7.669	9.5600	25	2.931	5.89	.01
Girls	Knowledge category	4.2500	20	.910	2.6800	25	1.145	5.00	.01
	Comprehension category	18.6000	20	2.349	8.6000	25	3.640	10.63	.01
	Application category	5.7000	20	2.055	2.8000	25	2.082	4.67	.01
	Retention in Achievement in Malayalm Language Skills (Total score)	28.5500	20	2.781	14.0800	25	5.369	10.92	.01

The obtained 't' values as per Table 4.4. for the comparison of retention scores Post-Test II (Objective wise and Total score) for Total Sample, Boys and Girls were found significant at 0.01 level for appropriate df. The results revealed that Experimental and Control group (Total Sample, Boys and Girls) are dissimilar with regard to mean retention scores in Malayalam Language Skills (Post-Test II).

As high retention scores in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) are seen associated with the Experimental group in all the three samples studied viz. Total Sample, Boys and Girls. This result suggests that Experimental group have advantage over the Control group with regard to retention scores (Post-Test II).

4.2.1.4. Summary and Discussion of Mean Difference Analysis

Difference in mean Achievement in Malayalam Language Skills between the Experimental group and Control group was investigated with regard to the Post-Test I Scores, Gain scores and retention scores (Post-Test II). Mean difference analysis was taken up for the three samples namely, Total Sample, Boys and Girls separately. The critical ratios obtained for Total Sample, Boys and Girls are summarised and presented in Table 4.5 and discussed in this subsection.

TABLE 4.5

Critical Ratios Obtained for Mean Difference Analysis

Mean Scores	Sample	Knowledge category	Comprehe- n- sion category	Application category	Achievement in Malayalam Language Skills Total Score (Post-Test I/Post-Test II) :	Level of Significance
Achievement in Malayalam Language Skills (Post-Test I)	Total	4.57	7.90	5.66	8.08	0.01
	Boys	3.51	4.22	3.93	4.79	0.01
	Girls	3.82	9.31	5.08	9.20	0.01
Gain Scores	Total	..	..	..	10.99	0.01
	Boys	..	..	..	6.29	0.01
	Girls	..	..	..	12.56	0.02
Retention in Malayalam Language Skills (Post-Test II)	Total	4.95	8.51	5.25	8.60	0.01
	Boys	4.47	5.10	4.03	5.89	0.01
	Girls	5.00	10.63	4.67	10.92	0.01

Critical ratios as presented in Table 4.5 indicate significant difference in mean Post-Test I scores, Gain scores and Post-Test II scores between the Experimental group and Control group. In all comparisons, Experimental group show advantage over the Control group since high mean scores were associated with the Experimental group.

4.2.2. ANALYSIS OF COVARIANCE FOR ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS - POST-TEST I AND POST-TEST II (OBJECTIVE WISE AND TOTAL SCORE) FOR TOTAL SAMPLE

This part of the analysis was taken up with a view to study differences if any exists in the Post-Test scores of Achievement in Malayalam Language Skills of standard VI pupils when the initial differences in select variables were controlled. The variables controlled are Previous Knowledge of Subject Matter (Pre-Test on Achievement in Malayalam Language Skills), Non-Verbal and Verbal Intelligence separately and in combination of two variables at a time. Effectiveness of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I and Post-Test II of standard VI pupils was therefore studied using covariance analysis.

In the Two factor ANCOVA, employed in the present study, subjects were categorised into two levels based on Non-Verbal Intelligence (Below-Average Non-Verbal Intelligence group and Above-Average Non-Verbal Intelligence group). Based on Verbal Intelligence, subjects were again categorised as Below-Average Verbal Intelligence group and Above-Average Verbal Intelligence group. The two methods of Instructions are i) Cooperative Learning with built-in-Peer Teaching Strategy and ii) Conventional Objective-based Instruction Method. Achievement in Malayalam Language Skills Post-Test I and Post-Test II for the three objectives viz., Knowledge Category, Comprehension category and Application category and Total scores were considered as Dependent Variables.

Before proceeding to ANCOVA the data used for analysis was examined to know whether the data satisfy the major assumptions suggested by Winer (1977), Wildt and Ahtola (1978) and Ferguson (1996) to carryout covariance analysis. The basic assumptions examined in the present study are the following.

1. Scores on the Dependent Variables are a linear combination of four independent components, an overall mean, a treatment effect, a linear covariate effect and an error term.
2. The Error is normally and independently distributed with mean zero and variance σ^2_E .
3. The weighted sum of all groups of the treatment/group effect is zero.
4. The coefficient of the covariate (slope of the regression line) is the same for each treatment group.
5. The covariate is a fixed Mathematical variable measured without error, not a stochastic variable.

Covariance analysis was done using the Software, Statistical Package for Social Sciences (SPSS - Nie *et al.* 1975). Since the frequencies in the treatment cells are unequal in size, ANCOVA procedure for unequal cell frequencies was utilized for analysis.

4.2.2.1. Results of Analysis of Data for Basic Assumptions

The following basic assumptions of ANCOVA were examined by analysing the obtained data and the results are presented in the following sub sections.

4.2.2.1.a. Linear Relationship Between the Dependent Variables and the Covariates

Linear relationship between the Dependent variables (Achievement in Malayalam Language Skills - three Objective wise scores and Total scores of Post-Test I and Post-Test II and the covariates singly and in combination as mentioned in section 4.2.2) were examined using Scatter Plots. A visual examination of the Scatter Plots revealed the linear relationship of the Dependent Variables and the covariates singly and in combination. It is also observed that scores on the Dependent Variables and the covariates did not depart greatly from linearity (Scatter Plots not enclosed).

4.2.2.1.b. Homogeneity of Variance

To satisfy the assumption of homogeneity of variance, separate Analysis of Variance was undertaken to examine whether the slopes of the regression lines are the same (Homogeneity of within class regression) in the different levels of Independent variables. (Instructional-Learning Strategies; Non-Verbal Intelligence and Verbal Intelligence).

For each ANCOVA for Achievement in Malayalam Language Skills Post-Test I and Post-Test II using the covariates Pre-Test, Non-Verbal Intelligence and Verbal Intelligence singly; Pre-Test by Non-Verbal Intelligence and Pre-Test by Verbal Intelligence in combination, Separate Test of Homogeneity of Variance was employed. In all cases it was found that the within regression coefficients are homogeneous or the same for different levels of Independent Variables (Tables not attached). The out come of these tests do not rule against pooling the within class regression (Winer, 1977). Thus it is appropriate to fit the data with the ANCOVA model.

4.2.2.1.c. Analysis of Variance for Achievement in Malayalam Language Skills Post-Test I and Post-Test II

For each ANCOVA, separate Analysis of Variance for the criterion data was attempted disregarding the covariates singly or in combination. This was done to examine whether the Experimental and Control group differ significantly (after introducing treatment variable) in Achievement in Malayalam Language Skills Post-Test I and Post-Test II without considering the effect of select control variables. Altogether 40 ANOVA were undertaken. It was found that statistically significant difference exists in the treatment means at 0.01 level (df. 1,96) in all the 40 ANOVA. This is due to the fact that the treatment means appear to have different criterion means (Tables not presented).

The investigator has attempted to explore further, whether statistically significant difference in criterion means will exist even when statistical adjustments are made to remove the effect of select Control Variables. Forty ANCOVA were undertaken for this purpose. Details of ANCOVA are described in the following text.

4.2.3. Analysis of Covariance for Achievement in Malayalam Language Skills (Post-Test I Objective wise and Total score) By Previous Knowledge of Subject Matter (Pre-Test) for Total Sample

Two-way factorial ANCOVA with Pre-Test scores as covariate was employed to examine whether significant changes exists or not in the mean scores of Achievement in Malayalam Language Skills after treatment. The analysis was done for three objective wise (Knowledge, Comprehension and Application categories) and Total score on Achievement for the Total Sample only.

Summary of Two-way factorial ANCOVA used to study the relative effectiveness of Cooperative Learning with built-in-Peer Teaching Strategy and Conventional Method of Teaching is presented in Table 4.6.

TABLE 4.6

Summary of Two-way Factorial ANCOVA for Achievement in Malayalam
Language Skills Post-Test I (Objective wise and Total score) - Pre-Test Scores as Covariate for Total Sample

Dependent Variables	Sources of variation	Instructional-Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	45.48	1.51	1.99	165.15
	df	1	1	1	95
	MS	45.28	1.51	1.99	1.74
	F	26.16**	0.87	1.14	
Comprehension category	SS	1296.05	107.01	14.64	1630.85
	df	1	1	1	95
	MS	1296.05	107.01	14.64	17.17
	F	75.50**	6.23	0.85	
Application category	SS	237.06	4.51	1.96	482.85
	df	1	1	1	95
	MS	237.06	4.51	1.96	5.08
	F	46.64**	0.89	0.39	
Achievement in Malayalam Language Skills Post-Test I (Total Score)	SS	3380.40	126.27	1.03	2967.37
	df	1	1	1	95
	MS	3380.40	126.27	1.03	31.24
	F	108.22**	4.04	0.03	

** P < 0.01

Table 4.6 shows that the F-values obtained for the effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I are 26.16, 75.50, 46.64 and 108.22 respectively for Achievement in Knowledge category, Comprehension category, Application category and for Total Achievement in Malayalam language Skills. This indicates that statistically significant difference between the criterion means at 0.01 level (df 1,95) for the groups exist even after adjustment is made for the linear effect of the covariate, Pre-Test. That is, when linear adjustment for the effect of previous knowledge of the subject matter is made, there exists statistically significant difference between the Experimental group and Control group.

[F-values for the single effect of Verbal Intelligence and the effect of Instructional-Learning Strategies by Verbal Intelligence were not taken into consideration, because Verbal Intelligence was dealt with as a fixed factor in this analysis.]

Adjusted Means and Post-hoc Comparison

Further analysis was taken up to determine which of the two groups based on Instructional-Learning Strategies cause variation in the criterion means. In ANCOVA for this purpose, post hoc comparison was made with the adjusted criterion means.

Scheffé Test of Post-hoc comparison was employed to compare the criterion means of the Experimental and Control group (Ferguson, 1996).

For enabling comparison, first the F-ratios between pairs of adjusted criterion means were calculated using the within group variance estimate for Achievement in Malayalam Language Skills (three Objective wise category and Total score). Table of F was consulted to obtain the value of F required for significance at the 0.05 and 0.01 level for $df_1 = (K-1)$ and $df_2 = (N-K)$ for the Total

sample. Using the formula $F' = (K-1)F$ required for significance at 0.05 and 0.01 levels was found out. The values of F were compared with the values of F' to decide the significance of the difference between the adjusted criterion means.

Adjusted means of Post-Test I and the results of the Scheffé Test of Post-hoc comparisons are summarised and presented in Table 4.7.

TABLE 4.7

**Data and Results of the Scheffé Test of Post-hoc comparisons Between
Adjusted Means of Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample**

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁ Experimental group	M ₂ Control group		0.05	0.01	
Knowledge category	4.65	3.81	7.99	3.94	6.90	0.01
Comprehension category	18.56	11.19	63.81	3.94	6.90	0.01
Application category	6.66	3.51	32.04	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post-Test I (Total Score)	29.87	17.99	69.87	3.94	6.90	0.01

As per Table 4.7, the obtained F-ratios for the comparison between the Experimental group and Control group in Achievement in Malayalam Language skills for the objectives Knowledge, Comprehension, Application and Total score are 7.99, 63.81, 32.04 and 69.87 respectively. Significant difference in the adjusted criterion means (Objective wise and Total score) of Experimental group and Control group was noticed as the corresponding F-values are found greater than the value of F' required for significance at 0.01 level (6.90 for df 1,98).

High adjusted means were associated with the Experimental group for Achievement in Malayalam Language Skills (Objective wise and Total score). This indicates the advantage of Experimental group taught through Cooperative Learning Strategy over the Control group taught through Conventional objective-based instruction method in Achievement in Malayalam Language Skills.

4.2.4 Analysis of Covariance for Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) By Non-Verbal Intelligence for Total Sample

Two-way factorial ANCOVA was utilized to examine the relative effectiveness of Cooperative Learning with built-in-Peer Teaching Strategy and Conventional Method of Teaching Malayalam Language Skills of standard VI pupils. In Two-factor ANCOVA, the groups (Experimental and Control) based on Instructional-Learning strategies and two levels of Verbal Intelligence (Below-Average and Above-Average) were incorporated as Independent variables. Non-Verbal Intelligence was the covariate. Summary of Two-way factorial ANCOVA is given in Table 4.8.

TABLE 4.8

**Summary of Two-way Factorial ANCOVA for Achievement in Malayalam
Language Skills Post-Test I (Objective wise and Total score) - Non-Verbal Intelligence as Covariate for Total Sample**

Dependent Variables	Sources of variation	Instructional Learning Strategies	Verbal Intelligence	Instructional Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	26.44	3.99	2.94	205.08
	df	1	1	1	95
	MS	26.44	3.99	2.94	2.16
	F	12.25**	1.85	1.36	
Comprehension category	SS	916.24	466.64	8.75	1968.91
	df	1	1	1	95
	MS	916.24	466.64	8.75	20.73
	F	44.21**	22.52	0.42	
Application category	SS	157.37	114.82	4.94	726.82
	df	1	1	1	95
	MS	157.37	114.82	4.94	7.65
	F	20.57**	15.01	0.65	
Achievement in Malayalam Language Skills Post-Test I (Total Score)	SS	4143.99	2299.74	1177.45	4607.54
	df	1	1	1	95
	MS	4143.99	2299.74	1177.45	48.50
	F	47.42**	24.28	0.02	

** P < 0.01

As per Table 4.8 the obtained F-values for Instructional-Learning Strategies on three Objective wise scores and Total Achievement in Malayalam Language Skills are 12.25, 44.21, 20.57 and 47.42 respectively. All F-values are well beyond the tabled value (6.90) for 1,95 df at 0.01 level of significance. Hence it may be inferred that difference in Instructional-Learning Strategies is followed by significant differences between the criterion means that is, Achievement in Malayalam Language Skills when Non-Verbal intelligence is controlled.

F-value of Verbal Intelligence and its interaction with Instructional-Learning Strategies were not considered since Verbal Intelligence is taken as a fixed factor in ANCOVA.

Adjusted Means and Post-hoc Comparison

Since significant F-values are obtained in ANCOVA, Scheffé's Test of Post-hoc comparison was done to examine which of the two groups categorised on the basis of Instructional-Learning Strategies cause the difference. Post-hoc comparison was made on the adjusted criterion means. Procedure used for Scheffé's Test has already been described in section 4.2.3.

Adjusted criterion means and the summary of the result of Scheffé Test of a posteriori comparisons are presented in Table 4.9.

TABLE 4.9

Data and Results of the Scheffé Test of Post-hoc comparisons Between Adjusted Means of Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁	M ₂		0.05	0.01	
	Experimental group	Control group				
Knowledge category	4.52	3.40	14.13	3.94	6.90	0.01
Comprehension category	18.16	11.59	50.71	3.94	6.90	0.01
Application category	6.45	3.72	24.07	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post-Test I (Total Score)	29.13	18.71	53.75	3.94	6.90	0.01

As per Table 4.9, the obtained F-ratios of comparison for the Experimental and Control group with regard to Achievement in Malayalam Language Skills were 14.13 (Knowledge category), 50.71 (Comprehension category), 24.07 (Application category) and 53.75 (Total score). Since all the F-values exceed the values of F' required for significance at 0.01 level (6.90 for 1,98 df), it can be concluded that significant difference exists in the adjusted criterion means (Objective wise and Total score) of the Experimental and Control group.

Experimental group to which the Cooperative Learning Strategy is applied shows high adjusted criterion means (Objective wise and Total score). This indicates the effectiveness of Cooperative Learning with built-in-Peer Teaching strategy over the conventional Method (Control group) of teaching Malayalam Language skills of standard VI pupils.

4.2.5 Analysis of Covariance for Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) By Verbal Intelligence for Total Sample

The relative effectiveness of Cooperative Learning Strategy with built-in-Peer Teaching and Conventional Objective-based instruction was examined by employing Two-factor ANCOVA. Sample was categorised into two groups (Experimental and Control) based on Instructional-Learning Strategies and further into two levels on the basis of Non-Verbal Intelligence (Below-Average group and Above-Average group). Verbal Intelligence was treated as covariate. Achievement in Malayalam Language skills were compared. Summary of Two-way factorial ANCOVA is presented in Table 4.10.

TABLE 4.10

Summary of Two-way Factorial ANCOVA for Achievement in Malayalam
Language Skills Post-Test I (Objective wise and Total score) - Verbal Intelligence as Covariate for Total Sample

Dependent Variables	Sources of variation	Instructional Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	31.44	2.15	0.47	190.76
	df	1	1	1	95
	MS	31.44	2.15	0.47	2.01
	F	15.66**	1.07	0.23	
Comprehension category	SS	1234.07	13.94	3.13	1978.61
	df	1	1	1	95
	MS	1234.07	13.94	3.13	20.83
	F	59.25**	0.67	0.15	
Application category	SS	207.71	5.00	1.93	747.45
	df	1	1	1	95
	MS	207.71	5.00	1.93	7.87
	F	26.40**	0.64	0.24	
Achievement in Malayalam Language Skills Post-Test I (Total Score)	SS	3041.37	55.30	14.76	4482.56
	df	1	1	1	95
	MS	3041.37	55.30	14.76	47.18
	F	64.46**	1.17	0.31	

** P < 0.01

Table 4.10 reveals that the obtained F-values for the single effect of Instructional-Learning Strategies after statistically controlling Verbal Intelligence on Objective wise and Total Achievement in Malayalam Language Skills Post-Test I - are 15.66, 59.25, 26.40 and 64.46. Since all the F-values are well beyond the tabled value (6.90 for df 1,95) it can be noted that significant difference exists between the Experimental group and Control group in criterion means at 0.01 level.

Results of the covariance analysis suggest that when linear adjustment for the variation due to Verbal Intelligence was made, significant difference exists between the two groups based on Instructional-Learning Strategies with respect to Achievement in Malayalam Language Skills.

[Since Non-Verbal Intelligence was considered as a fixed factor, F-values for Non-Verbal Intelligence and its interaction with Instructional-Learning Strategies were not taken into account.]

Adjusted Means and Post-hoc Comparison

In order to understand which of the two groups formed on the basis of Instructional-Learning Strategies cause difference in criterion means, Scheffé Test of Post-hoc comparison was employed. In ANCOVA, this post-hoc comparison is made specifically with the adjusted criterion means.

Adjusted criterion means (Objective wise and Total score) for the Experimental and Control group and the data and results of the Scheffé Test of Post-hoc comparisons are summarised and presented in Table 4.11.

TABLE 4.11

Data and Results of the Scheffé Test of Post-hoc comparisons Between Adjusted Means of Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁	M ₂		0.05	0.01	
	Experimental group	Control group				
Knowledge category	4.56	3.37	15.80	3.94	6.90	0.01
Comprehension category	18.98	11.56	53.08	3.94	6.90	0.01
Application category	6.78	3.67	27.05	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post-Test I (Total Score)	30.26	18.60	55.02	3.94	6.90	0.01

As per Table 4.11 the F-ratios obtained for the comparison between Experimental and Control group on Achievement in Malayalam Language Skills are 15.8 (Knowledge category), 53.08 (Comprehension category), 27.05 (Application category) and 55.02 (Total score). All the F-ratios are found greater than the value of F' required for significance at 0.01 level (6.90 for df 1,98). Therefore significant difference is found to exist in the adjusted criterion means (Objective wise and Total score) of the two groups.

High adjusted means (Objective wise and Total score) are seen associated with the Experimental group taught through Cooperative Learning Strategy. This indicates the effectiveness of Cooperative Learning with built-in-Peer Teaching strategy over the Conventional Method (Control group) of Teaching Malayalam Language Skills.

4.2.6 Analysis of Covariance for Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) By Previous Knowledge of Subject Matter (Pre-Test) By Non-Verbal Intelligence for Total Sample

In this part of the Two-factor ANCOVA, 'Instructional-Learning Strategies' and 'Verbal Intelligence' were taken as the two Independent Variables and Previous Knowledge of Subject Matter ie. 'Pre-Test scores and 'Non-Verbal Intelligence' combined were taken up as the two covariates. Summary of Two-way factorial ANCOVA is presented in Table 4.12.

TABLE 4.12

**Summary of Two-way Factorial ANCOVA for
Achievement in Malayalam Language Skills Post-Test I (Objective wise and
Total score) - Pre-Test Scores and Non-Verbal Intelligence in Combination as Covariates for Total Sample**

Dependent Variables	Sources of variation	Instructional Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	33.62	1.68	1.85	162.97
	df	1	1	1	94
	MS	33.62	1.68	1.85	1.73
	F	19.39**	0.97	1.06	
Comprehension category	SS	1030.61	102.50	15.86	1609.63
	df	1	1	1	94
	MS	1030.61	102.50	15.86	17.12
	F	60.19**	5.99	0.93	
Application category	SS	199.59	4.34	1.88	482.15
	df	1	1	1	94
	MS	199.59	4.34	1.88	5.13
	F	38.91**	0.85	0.37	
Achievement in Malayalam Language Skills Post-Test I (Total Score)	SS	2707.05	119.03	1.57	2919.49
	df	1	1	1	94
	MS	2707.05	119.03	1.57	31.06
	F	87.16**	3.83	0.05	

** P < 0.01

The obtained F-values as per Table 4.12 for the effect of Instructional Learning Strategies after statistically controlling the Pre-Test scores and Verbal Intelligence in combination on Achievement in Malayalam Languages Skills (Objective wise and Total score) are all well beyond the tabled value (6.90; df 1.94) at 0.01 level (obtained F values are 19.39 for Knowledge category, 60.19 for Comprehension category, 38.91 for Application category and 87.16 for Total score). Statistically significant differences therefore exist between the criterion means.

Results of the covariance analysis indicate that significant differences exist between the Experimental and Control group in all the four categories of Achievement in Malayalam Language Skills even after linear adjustments were made for the effect of variation due to Pre-Test scores and Non-Verbal Intelligence combined.

Since Verbal Intelligence is treated as a fixed factor in the Two-factor ANCOVA, its F-values are not considered for interpretation.

Adjusted Means and Post-hoc Comparison

Two-way factorial ANCOVA was followed by Scheffé Test of Post-hoc comparison, as the F-values for the effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills (Objective wise and Total score) were found significant. This was done to examine which of the two groups (Experimental or Control) categorised on the basis of Instructional-Learning Strategies produce difference in criterion means. In ANCOVA this post-hoc comparison is made on the adjusted criterion means.

Results of the Scheffé Test of Post-hoc comparisons and adjusted criterion means are summarised and presented in Table 4.13.

TABLE 4.13

Data and Results of the Scheffé Test of Post-hoc comparisons Between Adjusted Means of Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁ Experimental group	M ₂ Control group		0.05	0.01	
Knowledge category	4.59	3.33	17.88	3.94	6.90	0.01
Comprehension category	18.38	11.37	57.73	3.94	6.90	0.01
Application category	6.63	3.54	30.84	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post-Test I (Total Score)	29.60	18.23	64.00	3.94	6.90	0.01

As per Table 4.13, the F-ratios obtained for the comparison of adjusted criterion means between the Experimental and Control group are 17.88 for Achievement in Malayalam Language skills Knowledge category; 57.73 for Comprehension category; 30.84 for Application category and 64.00 for Total score. All F-values were found exceeding the value of F' required for significance at 0.01 level (6.90 for 1,98 df). Hence it can be noted that significant difference exists in the adjusted criterion means (Objective wise and Total score) of the Experimental and Control group.

High adjusted means were associated with the Experimental group for Achievement in Malayalam Language Skills (Objective wise and Total score). This indicate the advantage of Experimental group for which Cooperative Learning with built-in-Peer Teaching strategy was adopted over the Control group which was taught through the Conventional Objective-based method.

4.2.7. Analysis of Covariance for Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) By Previous Knowledge of Subject Matter (Pre-Test) By Verbal Intelligence for Total Sample

Relative effectiveness of Cooperative Learning strategy with built-in-Peer Teaching and Conventional Objective-based instruction was studied using Two-factor ANCOVA. Instructional-Learning Strategies and Non-Verbal Intelligence were taken up as the two Independent Variables. Previous Knowledge of the Subject Matter (Pre-Test scores) and Verbal Intelligence combined were treated as two covariates. Summary of Two-factor ANCOVA is presented in Table 4.14.

TABLE 4.14

**Summary of Two-way Factorial ANCOVA for
Achievement in Malayalam Language Skills Post-Test I (Objective wise
and Total score) - Pre-Test Scores and Verbal Intelligence in Combination as Covariates for Total Sample**

Dependent Variables	Sources of variation	Instructional-Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	32.91	1.15	0.57	164.07
	df	1	1	1	94
	MS	32.91	1.15	0.57	1.75
	F	18.85**	0.66	0.32	
Comprehension category	SS	1266.28	5.48	4.03	1640.25
	df	1	1	1	94
	MS	1266.28	5.48	4.03	17.45
	F	72.57**	0.31	0.23	
Application category	SS	219.58	1.03	2.56	485.21
	df	1	1	1	94
	MS	219.58	1.03	2.56	5.16
	F	42.54**	0.20	0.50	
Achievement in Malayalam Language Skills Post-Test I (Total Score)	SS	3151.66	19.59	19.01	2902.12
	df	1	1	1	94
	MS	3151.66	19.59	19.01	30.87
	F	102.08**	0.63	0.62	

** P < 0.01

The F-values obtained for the effect of Instructional-Learning Strategies, after statistically controlling the Pre-Test scores and Verbal Intelligence in combination, on Achievement in Malayalam Language Skills vide Table 4.14 are 18.85 (Knowledge category), 72.57 (Comprehension category), 42.54 (Application category) and 102.08 (Total score). Since all the F-values are well beyond the tabled value (6.90 $P < 0.01$) for 1,94 df, it can be concluded that statistically significant difference exists between Experimental group and Control group in the criterion means at 0.01 level.

Results of the covariance analysis indicate that even when linear adjustment for the effect of variation in Pre-Test scores and Verbal Intelligence in combination is made, significant difference in mean scores of Achievement in Malayalam Language Skills exist.

F-values for Non-Verbal Intelligence and its interaction with Instructional-Learning Strategies were not considered, since it was treated as a fixed factor in Two-way factorial ANCOVA.

Adjusted Means and Post-hoc Comparison

Since the F-values for Instructional-Learning Strategies were found significant in Two-way ANCOVA, an attempt was made to explore which of the two groups (Experimental or Control) differ in criterion means due to variation in treatment variables. Scheffé Test of Post-hoc comparison was therefore used with the adjusted criterion means.

Summary of the Scheffé Test of Post-hoc comparison and adjusted criterion means are given in Table 4.15.

TABLE 4.15

Data and Results of the Scheffé Test of Post-hoc Comparisons Between Adjusted Means of Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁	M ₂		0.05	0.01	
	Experimental group	Control group				
Knowledge category	4.57	3.36	16.34	3.94	6.90	0.01
Comprehension category	19.03	11.51	54.52	3.94	6.90	0.01
Application category	6.76	3.63	27.04	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post -Test I (Total Score)	30.39	18.05	61.62	3.94	6.90	0.01

Table 4.15 shows that the F-ratios between Experimental and Control group in Achievement in Malayalam Language Skills were 16.34 (Knowledge category), 54.52 (Comprehension category), 27.04 (Application category) and 61.62 (Total score). Since all the F-values were exceeding the value of F' required for significance at 0.01 level (6.90 for 1,98 df) significant difference exists in the adjusted criterion means (Objective wise and Total score) of the Experimental and Control group.

High adjusted means were seen associated with the Experimental group for which the Cooperative Learning Strategy was adopted. This is indicative of the effectiveness of Cooperative Learning Strategy with built-in-Peer Teaching over the Conventional Objective-based instruction (Control group) for Malayalam Language skills of standard VI pupils.

4.2.8 ANALYSIS OF COVARIANCE FOR ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS POST-TEST II (OBJECTIVE WISE AND TOTAL SCORE) CONTROLLING SELECT VARIABLES FOR TOTAL SAMPLE

This part of the analysis was intended to study whether differences exist in Achievement in Malayalam Language Skills of standard VI pupils when the subjects are tested one month after experimental treatment was given. Post-Test II was administered for this purpose. The analysis was taken up after controlling the initial differences in the select variables singly, and in combination of two at a time. This analysis will enable the investigator to know whether Cooperative Learning Strategy in teaching Malayalam Language influence better retention. Two-way factorial ANCOVA was used to study to analyse the influences of Instructional-Learning Strategies on Achievement in Malayalam Language Skills - Post-Test II by controlling the variables as follows:

- i) *Previous Knowledge of Subject Matter, that is Pre-Test singly*
- ii) *Non-Verbal Intelligence singly*
- iii) *Verbal Intelligence singly*
- iv) *Pre-Test by Non-Verbal Intelligence*
- v) *Pre-Test by Verbal Intelligence*

Where ever, significant F-values are obtained, Scheffé Test of Post-hoc comparisons of adjusted means was made use of for identifying the advantageous group.

The analysis of results of ANCOVA are described and presented in the order given above.

4.2.8.1 Analysis of Covariance for Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) By Previous Knowledge of Subject Matter (Pre-Test) for Total Sample

The data and results of 2x2 ANCOVA of Post-Test II by Previous Knowledge of Subject Matter, that is Pre-Test are presented in Table 4.16.

TABLE 4.16

Summary of Two-way Factorial ANCOVA for Retention in Achievement
in Malayalam Language Skills Post-Test II (Objective wise and Total Score) - Pre-Test score as Covariate for Total Sample

Dependent Variables	Sources of variation	Instructional Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	36.29	0.74	0.02	136.77
	df	1	1	1	95
	MS	36.29	0.74	0.02	1.44
	F	25.21**	0.51	0.01	
Comprehension category	SS	1155.33	73.45	33.87	1430.70
	df	1	1	1	95
	MS	1155.33	73.45	33.87	15.06
	F	76.72**	4.88	2.25	
Application category	SS	105.55	1.30	0.98	310.57
	df	1	1	1	95
	MS	105.55	1.30	0.98	3.27
	F	32.29**	0.40	0.30	
Retention in Achievement in Malayalam Language Skills Post-Test II (Total Score)	SS	2528.87	78.37	22.18	2673.04
	df	1	1	1	95
	MS	2528.87	78.37	22.18	28.14
	F	89.88**	2.79	0.79	

** P < 0.01

The obtained F-values as per Table 4.16 are 25.21 for retention in Achievement in Malayalam Language Skills Knowledge category, 76.72 for Comprehension category, 32.29 for Application category and 89.88 for Total score. All the F-values are significant beyond 0.01 level ($F < 6.90$ for $df 1,95$). Significant differences therefore are found to exist in the criterion means between the Experimental and Control group at 0.01 level even adjustment is made for the linear effect of the covariate - Pre-Test scores.

F-values for Verbal Intelligence and its interaction with Instructional-Learning Strategies were not taken up since, Verbal Intelligence was dealt as a fixed factor in the ANCOVA.

Scheffé Test of Post-hoc comparison was employed to compare the adjusted criterion means of the Experimental and Control group.

Adjusted criterion means and results of the Scheffé Test of Post-hoc comparisons are summarised and presented in Table 4.17.

TABLE 4.17

Data and Results of the Scheffé Test of Post-hoc Comparisons Between Adjusted Means of Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁	M ₂		0.05	0.01	
	Experimental group	Control group				
Knowledge category	3.27	2.04	23.79	3.94	6.90	0.01
Comprehension category	14.65	7.69	71.57	3.94	6.90	0.01
Application category	4.27	2.17	26.57	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post-Test II (Total Score)	22.19	11.90	74.42	3.94	6.90	0.01

The obtained F-ratios for the comparison of the Experimental group and the Control group in mean retention scores are 23.29 (Knowledge category), 71.57 (Comprehension category), 26.57 (Application category) and 74.42 (Retention Total). All the F-values are greater than the critical value of F' for significance at 0.01 level ($F < 6.90$).

From the results of the Scheffé Test of Post-hoc comparisons, it can be noted that high adjusted means are associated with the Experimental group indicating its advantage over the Control group in the retention test.

4.2.8.2 Analysis of Covariance for Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) By Non-Verbal Intelligence for Total Sample

Data and results of 2x2 ANCOVA of Post-Test II by Non-Verbal Intelligence are presented in Table 4.18.

TABLE 4.18

Summary of Two-way Factorial ANCOVA for Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) - Non-Verbal Intelligence as Covariate for Total Sample

Dependent Variables	Sources of variation	Instructional Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	24.15	0.85	0.08	148.96
	df	1	1	1	95
	MS	24.15	0.85	0.08	1.57
	F	15.40**	0.54	0.05	
Comprehension category	SS	867.92	270.50	27.42	1587.06
	df	1	1	1	95
	MS	867.92	270.50	27.42	16.71
	F	51.95**	16.19	1.64	
Application category	SS	65.30	34.93	1.97	385.03
	df	1	1	1	95
	MS	65.30	34.93	1.97	4.05
	F	16.11**	8.62	0.49	
Achievement in Malayalam Language Skills Post-Test II (Total Score)	SS	1802.46	541.96	12.58	3279.96
	df	1	1	1	95
	MS	1802.46	541.96	12.58	34.53
	F	52.21**	15.70	0.36	

** P < 0.01

As per Table 4.18 the obtained F-values for retention in Achievement in Malayalam Language Skills are 15.40 (Knowledge category), 51.95 (Comprehension category), 16.11 (Application category) and 52.21 (Retention Total score). All F-values are found significant beyond 0.01 level ($F < 6.90$, df 1,95). Statistically significant difference in the criterion means exist between the Experimental and Control group when adjustment is made for the effect of the Covariate, Non-Verbal Intelligence.

F-values of Verbal Intelligence is not taken into consideration since, Verbal Intelligence is treated as a fixed factor.

Scheffé Test of Post-hoc comparison was employed to compare the adjusted criterion means of Experimental and Control group.

Adjusted criterion means, data and results of the Scheffé Test are summarised and presented in Table 4.19.

TABLE 4.19

Data and Results of the Scheffé Test of Post-hoc Comparisons Between Adjusted Means of Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁ Experimental group	M ₂ Control group		0.05	0.01	
Knowledge category	3.19	2.12	18.00	3.94	6.90	0.01
Comprehension category	14.37	7.97	60.52	3.94	6.90	0.01
Application category	4.10	2.34	18.66	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post-Test II (Total Score)	21.66	12.43	59.88	3.94	6.90	0.01

The obtained F-values for the comparison of Experimental and Control group in adjusted criterion means as per Table 4.19 are 18.00 (Knowledge category), 60.52 (Comprehension category), 18.66 (Application category) and 59.88 (Retention Total Score).

All F-values are found significant beyond 0.01 level of significance ($F < 6.90$) since the values of F is greater than the critical value of F'.

From the results of Scheffé Test, it may be concluded that high adjusted means were associated with the Experimental group indicating its advantage over the Control group in retention.

4.2.8.3 Analysis of Covariance for Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) By Verbal Intelligence for Total Sample

Summary of the data and results of Two-factor ANCOVA of retention in Achievement in Malayalam Language Skills (Post-Test II) are presented in Table 4.20.

TABLE 4.20

**Summary of Two-way Factorial ANCOVA for Retention in Achievement in Malayalam
Language Skills Post-Test II (Objective wise and Total Score) - Verbal Intelligence as Covariate for Total Sample**

Dependent Variables	Sources of variation	Instructional Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	27.55	1.15	1.10	139.22
	df	1	1	1	95
	MS	27.55	1.15	1.10	1.47
	F	18.80**	0.78	0.75	
Comprehension category	SS	1133.31	4.85	7.33	1589.08
	df	1	1	1	95
	MS	1133.31	4.85	7.33	16.73
	F	67.75**	0.29	0.44	
Application category	SS	814.59	7.64	1.10	395.34
	df	1	1	1	95
	MS	814.59	7.64	1.10	4.16
	F	20.33**	1.84	0.26	
Achievement in Malayalam Language Skills Post-Test II (Total Score)	SS	2314.66	36.46	23.09	3181.41
	df	1	1	1	95
	MS	2314.66	36.46	23.09	33.49
	F	69.12**	1.09	0.69	

** P < 0.01

Table 4.20 shows that the F-values obtained for retention in Achievement in Malayalam Language Skills 18.80 (Knowledge category), 67.75 (Comprehension category), 20.33 (Application category) and 69.12 (Retention Total score). When linear adjustment was made for the effect of Verbal Intelligence, there exists significant difference between the Experimental group and Control group in mean retention scores.

Since Non-Verbal Intelligence is treated as a fixed factor, its F-values were not taken into consideration.

Scheffé Test of Post-hoc comparison was attempted to compare the adjusted criterion means of Experimental group.

Adjusted criterion means, data and results of Scheffé Test are summarised and presented in Table 4.21.

TABLE 4.21

Data and Results of the Scheffé Test of Post-hoc Comparisons Between Adjusted Means of Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁ Experimental group	M ₂ Control group		0.05	0.01	
Knowledge category	3.21	2.10	19.75	3.94	6.90	0.01
Comprehension category	15.04	7.92	63.85	3.94	6.90	0.01
Application category	4.25	3.30	05.07	3.94	6.90	0.05
Achievement in Malayalam Language Skills Post-Test II (Total Score)	22.49	12.32	63.78	3.94	6.90	0.01

The F-ratios for the comparison of mean retention scores between the Experimental group and Control group are 19.75 (Knowledge category), 63.85 (Comprehension category), 05.07 (Application category) and 63.78 (Retention Total) as shown in Table 4.21. It is noted that all the F-values are greater than the value of F' required for significance at 0.01 level ($df = 1,98$) except for retention in Application category ($P < 0.05$).

High adjusted criterion means were associated with the Experimental group indicated its advantage in retention (Post-Test II) (Objective wise and Total score) over the Control group.

4.2.8.4 Analysis of Covariance for Retention in Malayalam Language Skills Post-Test II (Objective wise and Total score) By Previous Knowledge of Subject Matter (Pre-Test) By Non-Verbal Intelligence for Total Sample

Summary of the data and results of 2×2 factor ANCOVA is presented in Table 4.22.

TABLE 4.22

**Summary of Two-way Factorial ANCOVA for
Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise
and Total score) - Pre-Test Scores and Non-Verbal Intelligence as Covariates in Combination for Total Sample**

Dependent Variables	Sources of variation	Instructional Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	27.79	0.82	0.01	135.65
	df	1	1	1	94
	MS	27.79	0.82	0.01	1.44
	F	19.26**	0.57	0.01	
Comprehension category	SS	940.24	70.71	35.18	1419.53
	df	1	1	1	94
	MS	940.24	70.71	35.18	15.10
	F	62.26**	4.68	2.33	
Application category	SS	80.44	1.11	0.85	307.10
	df	1	1	1	94
	MS	80.44	1.11	0.85	3.27
	F	24.62**	0.34	0.26	
Achievement in Malayalam Language Skills Post-Test II (Total Score)	SS	2016.38	73.25	24.22	2633.82
	df	1	1	1	94
	MS	2016.38	73.25	24.22	28.02
	F	71.96**	2.61	0.86	

** P < 0.01

From Table 4.22 the F-values obtained for Instructional-Learning Strategies are 19.26 (Knowledge category), 62.26 (Comprehension category), 24.62 (Application category) and 71.96 (Retention Total). All the F-values are found significant since the values exceed the tabled value (6.90) at 0.01 level for 1,94 df. Significant difference was noticed in mean retention scores - Post-Test II (Objective wise and Total score) between the Experimental and Control group after a linear adjustment is made for the effect of the two covariates in combination (Pre-Test scores and Non-Verbal Intelligence).

The F-values of Verbal Intelligence is not taken into consideration because, Verbal Intelligence is treated as a fixed factor in this Two-way ANCOVA.

Scheffé Test of Post-hoc comparison was employed to compare the adjusted criterion means for the Experimental group and the Control group. Adjusted criterion means, data and results of Scheffé Test are presented in Table 4.23.

TABLE 4.23

Data and Results of the Scheffé Test of Post-hoc Comparisons Between Adjusted Means of Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁	M ₂		0.05	0.01	
	Experimental group	Control group				
Knowledge category	3.23	2.07	21.16	3.94	6.90	0.01
Comprehension category	14.52	7.82	66.33	3.94	6.90	0.01
Application category	4.20	2.24	23.14	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post-Test II (Total Score)	21.95	12.13	67.78	3.94	6.90	0.01

As per Table 4.23 the F-values obtained for the comparison of adjusted criterion means between the Experimental group and the Control group are as follows. 21.16 (Knowledge category), 66.33 (Comprehension category), 23.14 (Application category) and 67.78 (Total retention). All F-values were greater than the values of F' required for significance at 0.01 level. Statistically significant difference in the adjusted criterion means (Objective wise and Total score) between the Experimental group and the Control group were noticed.

In all Post-hoc comparisons high adjusted means were seen associated with the Experimental group. Thus it may be concluded that the Experimental group to which Cooperative Learning Strategy was applied has advantage over the Control group which is taught through the Conventional Method of Teaching Malayalam Language Skills.

4.2.8.5 Analysis of Covariance for Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) By Previous Knowledge of Subject Matter (Pre-Test) By Verbal Intelligence for Total Sample

Data and results of 2x2 Factorial ANCOVA is summarised in Table 4.24.

TABLE 4.24

**Summary of Two-way Factorial ANCOVA for
Achievement in Malayalam Language Skills Post-Test II (Objective wise and
Total score) - Pre-Test Scores and Verbal Intelligence as Covariates in Combination for Total Sample**

Dependent Variables	Sources of variation	Instructional Learning Strategies	Verbal Intelligence	Instructional-Learning Strategies x Verbal Intelligence	Within cells
Knowledge category	SS	28.20	0.78	1.17	133.06
	df	1	1	1	94
	MS	28.20	0.78	1.17	1.42
	F	19.92**	0.55	0.83	
Comprehension category	SS	1153.12	1.68	8.20	1445.75
	df	1	1	1	94
	MS	1153.12	1.68	8.20	15.38
	F	74.97**	0.14	0.53	
Application category	SS	88.98	4.20	1.37	306.90
	df	1	1	1	94
	MS	88.98	4.20	1.37	3.26
	F	27.25**	1.29	0.42	
Achievement in Malayalam Language Skills Post-Test II (Total Score)	SS	2371.76	17.87	26.17	2612.23
	df	1	1	1	94
	MS	2371.76	17.87	26.17	27.79
	F	85.35**	0.64	0.94	

** P < 0.01

As per Table 4.24 the obtained F-values for Instructional-Learning Strategies after controlling the Pre-Test scores and Verbal Intelligence in combination, are found significant at 0.01 level for 1,94 df. The F-values are 19.92 (Knowledge category), 74.97 (Comprehension category), 27.25 (Application category) and 85.35 (Total score).

It may be concluded from the results of Covariance Analysis that the Experimental and Control group differ significantly in mean retention scores (Post-Test II) after controlling the effect of Pre-Test scores and Verbal Intelligence in combination.

Non-Verbal Intelligence is treated as a fixed factor in the ANCOVA so that its F-values are not considered for interpretation.

Two-way ANCOVA is followed by Scheffé Test of Post-hoc comparison of adjusted criterion means between the Experimental and Control group.

Adjusted criterion means of Experimental and Control group, data and results of Scheffé Test are summarised and presented in Table 4.25.

TABLE 4.25

Data and Result of the Scheffé Test of Post-hoc Comparisons Between Adjusted Means of Retention in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample

Dependent Variables	Adjusted Means		F-value	Values of F'		Level of significance
	M ₁	M ₂		0.05	0.01	
	Experimental group	Control group				
Knowledge category	3.21	2.08	20.46	3.94	6.90	0.01
Comprehension category	15.07	7.89	64.93	3.94	6.90	0.01
Application category	4.27	2.28	22.25	3.94	6.90	0.01
Achievement in Malayalam Language Skills Post-Test II (Total Score)	22.55	12.26	65.30	3.94	6.90	0.01

Table 4.25 shows the F-values obtained for the comparison of adjusted criterion means between the Experimental group and the Control group. The values are 20.46 (Knowledge category), 64.93 (Comprehension category), 22.25 (Application category) and 65.30 (Retention Total score). All F values were found significant beyond 0.01 level since the F-values are exceeding the value of F' required for significance (6.90) at 0.01 level. Hence, it may be noted that significant difference exists between the adjusted criterion means (Objective wise and Total score) of the Experimental and Control group.

High adjusted means were seen associated with the Experimental group in all comparisons. This indicates the advantage of Experimental group which is taught through Cooperative Learning Strategy over the Control group which is taught through Conventional Method.

4.2.9 Summary and Discussion of Two-way Factorial ANCOVA

Forty, 2x2 ANCOVA were undertaken to study whether differences exist in Achievement in Malayalam Language Skills tested immediately after experiment (Post-Test I) and one month after the initial differences in select variables were controlled. The variables controlled for the Experiment were Previous Knowledge of Subject Matter (Pre-Test scores), Non-Verbal Intelligence and Verbal Intelligence separately and in combination. The relative effectiveness of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching versus Conventional Method of Teaching) in immediate Achievement in Malayalam Language Skills and retention were studied separately for the Total sample.

Twenty Covariance analysis were undertaken for the Dependent Variable Achievement in Malayalam Language Skills (Post-Test I) with Pre-Test score, Non-Verbal Intelligence and Verbal Intelligence singly and in combinations of two. The Dependent variables for ANCOVA were three Objective wise

Achievement in Malayalam Language Skills (Knowledge category, Comprehension category and Application category) and Total Achievement scores. Similarly, Twenty ANCOVA were also employed for the Dependent Variable retention in Achievement in Malayalam Language Skills (Post-Test II) for the Total sample. The F-values obtained for 40 ANCOVA are summarised and presented in Table 4.26 and discussed.

TABLE 4.26

Summary of 2x2 Factorial ANCOVA (Post-Test I and Post-Test II)

DEPENDENT VARIABLES		Instructional-Learning Strategies (F-Values)					Level of significance
		COVARIATES					
		Pre-Test score	Non-Verbal Intelligence	Verbal Intelligence	Pre-Test score and Non-Verbal Intelligence	Post-Test score and Verbal Intelligence	
Achievement in Malayalam Language Skills (Post-Test I)	Knowledge category	26.16	12.25	15.66	19.39	18.85	0.01
	Comprehension category	75.50	44.21	59.25	60.19	72.57	0.01
	Application category	46.64	20.57	26.40	38.91	42.54	.01
	Total Score	108.22	47.42	64.46	87.16	102.08	0.01
Retention in Achievement in Malayalam Language Skills (Post-Test II)	Knowledge category	25.21	15.40	18.80	19.26	19.92	0.01
	Comprehension category	76.72	51.95	67.75	62.26	74.97	0.01
	Application category	32.19	16.11	20.33	24.62	27.25	0.01
	Total Score	89.88	52.21	69.12	71.96	85.35	0.01

All the F-values obtained in the Analysis of Covariance are found to be significant beyond 0.01 level. The results therefore indicate that significant differences exist in the criterion means (Post-Test I and II) between Experimental and Control group even after the effect of Previous Knowledge of the Subject, Verbal Intelligence and Non-Verbal Intelligence were controlled singly and in combination of two variables at a time.

Since all the F-values were found significant in ANCOVA, Scheffé Test of Post-hoc comparison was undertaken. This was done with a view to study which of the two groups (Experimental or Control) differ in the criterion means. Post-hoc comparisons between the adjusted criterion means of Experimental and Control group revealed significant differences in mean Achievement and retention in Malayalam Language skills Post-Test I and II (Objective wise and Total score). In all comparisons the Experimental group have high criterion means. The results suggest the advantage of Experimental group taught through Cooperative Learning Strategy in Achievement and retention over the Control group taught through Conventional Method of Teaching.

4.3 SECTION C

INVESTIGATION OF THE MAIN EFFECTS AND INTERACTION EFFECT OF INSTRUCTIONAL-LEARNING STRATEGIES AND SELECT COGNITIVE ENTRY BEHAVIOUR OF THE SAMPLE ON ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS

This section of analysis is directed towards seeking answer to the third set of objectives set for the study. Attempt was made to find out whether variation in Achievement in Malayalam Language Skills is depended on variation in the select independent variables or not. The Independent Variables selected were Instructional-Learning Strategies and select Cognitive Entry Behaviour, namely, Non-Verbal Intelligence and Verbal Intelligence of the sample - pupils of standard VI. For this purpose, 2x2 ANOVA were undertaken for Achievement in Malayalam Language Skills - Objective wise score and Total score - separately for immediate Post-Test and delayed Post-Test. ANOVA was undertaken for the Total Sample (N=100) Boys (N = 55) and Girls (N = 45) separately. Wherever significant F-values are obtained, Scheffé Test of Post-hoc comparison was made to find out the advantageous group.

All computations were done using the computer programme Statistical Package for Social Sciences (SPSS - Nie *et al.*, 1975). Before the actual computation of ANOVA, the SPSS programme ensured the important basic assumptions of ANOVA. SPSS sub-programme of Two-way ANOVA for unequal cell frequencies was used for all computations. Forty eight ANOVA were computed for studying the main effect and interaction effect of the two Independent Variables viz., Instructional-Learning Strategies by select Cognitive Entry Behaviour (Non-Verbal Intelligence and Verbal Intelligence) on four Dependent Variables; i) Achievement in Malayalam Language Skills - knowledge category, ii)

Comprehension category iii) Application category and iv) Total score for three sample (Total Sample, Boys and Girls). ANOVA performed were as follows:

1. 12 ANOVA of Achievement in Malayalam Language Skills Post Test-I (4 Dependent Variables) by Instructional-Learning Strategies by Non-Verbal Intelligence in three samples.
2. 12 ANOVA of Achievement in Malayalam Language Skills Post Test-II (4 Dependent Variables) by Instructional-Learning Strategies by Non-Verbal Intelligence in three samples.
3. 12 ANOVA of Achievement in Malayalam Language Skills Post Test-I (4 Dependent Variables) by Instructional-Learning Strategies by Verbal Intelligence in three samples.
4. 12 ANOVA of Achievement in Malayalam Language Skills Post Test-II (4 Dependent Variables) by Instructional-Learning Strategies by Verbal Intelligence in three samples.

Categorisation of the samples into two levels on the basis of Instructional-Learning-Strategies and two levels on the basis of Non-Verbal Intelligence and Verbal Intelligence were described in detail in Chapter 3 Methodology (Section 3.4.3.2(iii)).

4.3.1 Main Effect and Interaction Effect of Instructional-Learning Strategies and Non-Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample, Boys and Girls

Data and results of 12 ANOVA computed to study the effects of Instructional-Learning Strategies and Non-Verbal Intelligence on Achievement in Malayalam Language Skills Post -Test I are presented in Table 4.27.

TABLE 4.27

Data and Results of Two-way ANOVA of Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) By Instructional-Learning Strategies By Non-Verbal Intelligence for Total Sample, Boys and Girls

Sample	Dependent Variable		Main effect of Instructional-Learning Strategies	Main Effect of Non-Verbal Intelligence	Interaction effect of Instructional Learning Strategies and Non-Verbal Intelligence
Total (N=100)	Achievement in Malayalam Language Skills - Post Test I Knowledge category	SS	31.726	7.968	0.022
		MSS	31.726	7.968	0.022
		df	1	1	1
		F	14.156**	3.555	0.010
	Comprehension category	SS	1247.829	95.949	4.260
		MSS	1247.829	95.949	4.260
		df	1	1	1
		F	48.131**	3.701	.164
	Application category	SS	209.454	25.972	.153
		MSS	209.454	25.972	.153
		df	1	1	1
		F	23.427**	2.905	.017
Total Score	SS	3072.450	313.801	6.777	
	MSS	3072.450	313.801	6.777	
	df	1	1	1	
	F	49.732**	5.079*	110	
Boys (N = 55)	Achievement in Malayalam Language Skills Post-Test II Knowledge category	SS	23.112	8.933	.045
		MSS	23.112	8.933	.045
		df	1	1	1
		F	9.075**	3.508	0.018
	Comprehension category	SS	512.102	35.204	.401
		MSS	512.102	35.204	.401
		df	1	1	1
		F	14.623**	1.005	011
	Application category	SS	135.031	.475	16.300
		MSS	135.031	.475	16.300
		df	1	1	1
		F	14.122**	.050	1.705
Total score	SS	1525.482	92.373	19.889	
	MSS	1525.482	92.373	19.889	
	df	1	1	1	
	F	19.108**	1.157	.249	
Girls (N = 45)	Achievement in Malayalam Language Skills Post-Test I Knowledge category	SS	14.848	.720	.707
		MSS	14.848	14.848	.707
		df	1	1	1
		F	9.870**	.479	470
	Comprehension category	SS	805.273	46.016	28.447
		MSS	805.273	46.016	28.447
		df	1	1	1
		F	64.605**	3.692	2.282
	Application Category	SS	84.007	45.570	36.364
		MSS	84.007	45.570	36.364
		df	1	1	1
		F	16.573**	8.990**	7.174*
Total score	SS	1713.648	206.866	148.955	
	MSS	1713.648	206.866	148.955	
	df	1	1	1	
	F	68.310**	8.246**	5.938*	

* - P < 0.05

** - P < 0.01

4.3.1.1. *Main Effect of Instructional-Learning Strategies*

It may be noted from Table 4.27 that the obtained F-values for the main effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample, Boys and Girls in the sample exceed well beyond the tabled values for appropriate degrees of freedom at 0.01 level of significance. ($F < 6.90$ for df 1, 96, $F < 7.08$ for df 1, 51 and $F < 7.08$ for df 1, 41).

The results of ANOVA, suggest that variation in Achievement in Malayalam Language Skills (Objective wise and Total score) is attributable to changes in the Instructional-Learning strategies for the Total Sample, Boys and Girls.

4.3.1.2. *Main Effect of Non-Verbal Intelligence*

As per Table 4.27 significant F-values for the main effect of Non Verbal Intelligence on Achievement in Malayalam Language Skills were noticed only for three out of twelve ANOVA. They are,

- i) Achievement in Malayalam Language Skills Total score in the Total Sample ($F = 5.07$, $P < .05$ level).
- ii) Achievement in Malayalam Language Skills - Application category in Girls, ($F = 8.99$, $P < .01$ level) and,
- iii) Achievement in Malayalam Language Skills Total score in Girls ($F = 8.246$ & $P < .01$ level).

No significant main effect of Non-Verbal Intelligence on Achievement in Malayalam Language Skills (Objective wise and Total score) of Post-Test I was in other categories.

4.3.1.3. Interaction Effect of Instructional-Learning Strategies and Non-Verbal Intelligence

The F-values obtained for the interaction effect of Instructional-Learning Strategies and Non-Verbal Intelligence on Achievement in Malayalam Language Skills Post Test I (Objective wise and Total score) were found to be significant at .05 level in two out of twelve ANOVA. They are for Achievement in Malayalam Language Skills-Application category ($F = 7.174$) and Total score ($F = 5.938$) for Girls in the sample.

The results indicate that Achievement in Malayalam Language Skills of standard VI pupils are independent of changes due to the combined effect of Instructional-Learning Strategies and Non-Verbal Intelligence.

4.3.1.4. Comparison of Mean Scores of Achievement in Malayalam Language Skills Post-Test I Between Two Groups Categorised Based on Instructional-Learning Strategies

Significant F-values were obtained in the study of single effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills of Total Sample, Boys and Girls. Therefore, mean Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) of the two groups of pupils categorised based on Instructional-Learning Strategies (Cooperative Learning Strategy group - CLS and Conventional Method of Teaching group - CMT) were compared using Scheffé Test of Post-hoc comparison.

Data and results of the Scheffe Test of Post-hoc comparisons between the mean Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) of CLS Group and CMT Group are presented in Table 4.28.

TABLE 4.28

**Data and Results of the Scheffé Test of Post-Hoc Comparison Between Means
of Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score)
of the Two Groups of Sample Based on Instructional-Learning Strategies for Total Sample, Boys and Girls**

Sample	Dependent Variables	Means		F value	Value of F'		Level of significance
		M ₁ CLS	M ₂ CMT		0.05	0.01	
Total N = 50-50	Achievement in Malayalam Language Skills Knowledge category	4.64	3.26	21.25	3.94	6.90	0.01
	Comprehension category	19.22	11.10	63.57	3.94	6.90	0.01
	Application category	6.86	3.46	32.33	3.94	6.90	0.01
	Total Score	30.72	17.82	67.34	3.94	6.90	0.01
Boys (N = 30-25)	Achievement in Malayalam Language Skills Knowledge category	4.30	2.76	12.68	4.02	7.12	0.01
	Comprehension category	17.67	10.96	34.95	4.02	7.12	0.01
	Application category	5.97	2.68	15.46	4.02	7.12	0.01
	Total Score	27.93	16.40	22.71	4.02	7.12	0.01
Girls (N = 20-25)	Achievement in Malayalam Language Skills Knowledge category	5.15	3.76	14.31	4.06	7.24	0.01
	Comprehension category	21.55	11.24	94.86	4.06	7.24	0.01
	Application category	8.20	4.24	34.16	4.06	7.24	0.01
	Total Score	34.90	19.24	106.69	4.06	7.24	0.01

CLS - Cooperative Learning Strategy with Built-in-Peer Teaching

CMT - Conventional Method of Teaching

Results summarised in Table 4.28 revealed that F-ratios of all the twelve comparisons (four Dependent Variables each in three samples) between the CLS group and CMT group in mean Achievement in Malayalam Language Skills are significant well beyond 0.01 level (For Total Sample $F < 6.90$, df. 1,98; For Boys $F < 7.12$ df. 1,53; For Girls $F < 7.12$, df. 1,43).

It may be noted that in all the comparisons, high mean scores were found associated with the CLS group in all the three samples. This indicates the advantage of Experimental group taught through CLS over the control group taught through Conventional Method of Teaching.

4.3.1.5. Comparison of Mean Scores of Achievement in Malayalam Language Skills Post-Test I Between two Groups Categorised Based on Non-Verbal Intelligence

Post-hoc comparison between the mean Achievement in Malayalam Language Skills of two groups of subjects categorised based on Non-Verbal Intelligence (Below Average Non-Verbal Intelligence - BANI and Above Average Non-Verbal Intelligence - AANI) were undertaken using Scheffe procedure. F-values for Non-Verbal Intelligence were found significant only in one ANOVA (Achievement Total score) for Total Sample and in two ANOVA (Application category and Achievement Total score) for Girls only. In case of Boys in the sample no significant F-values were found.

In Table 4.29 Data and results of the Scheffé Test of Post-hoc comparisons between the BANI and AANI groups for mean Achievement scores are presented for the Total Sample and Girls.

TABLE 4.29

**Data and Results of the Scheffé Test of Post-Hoc
Comparison Between Means of Achievement in Malayalam Language Skills Post-Test I
(Objective wise and Total score) of Two Groups of Sample Based on Non-Verbal Intelligence for Total Sample and Girls**

Sample	Dependent Variables	Means		F value	Value of F'		Level of significance
		M ₁ BANI	M ₂ AANI		0.05	0.01	
Total (N = 52-48)	Achievement in Malayalam Language Skills Total score	20.67	28.02	21.83	3.94	6.90	0.01
	Achievement in Malayalam Language Skills Application category	4.38	7.85	26.92	4.06	7.24	0.01
Girls (24-21)	Total Score	21.34	31.76	48.49	4.06	7.24	0.01

BANI - Below Average Non-Verbal Intelligence

AANI - Above Average Non-Verbal Intelligence

Significant F-values obtained at 0.01 level for the comparisons of mean Achievement in Malayalam Language Skills between the BANI and AANI Groups of subjects as per Table 4.29. All F-values are found beyond the value of F' required for significance at 0.01 level. This shows that significant difference in mean Achievement scores between the BANI and AANI groups of Total Sample and Girls exists.

It may be noted that high mean Achievement scores are seen associated with the AANI group in the three comparisons. This indicates the advantage of AANI group in Achievement in Malayalam Language Skills over the BANI group of subjects (Application category for Girls; Achievement Total score for Total Sample and Girls).

4.3.2.0 Main Effect and Interaction Effect of Instructional-Learning Strategies and Non-Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample, Boys and Girls

Significant main effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I was noticed in all the sample in the analysis described in 4.3.1. In this part, attempt was made to find out whether variation in the treatment influence retention of the subject matter. Therefore ANOVA was undertaken with Post-Test II as Dependent Variables (Objective wise and Total score). The criterion test treated as Post-Test II was administered one month after the completion of treatment. Here also twenty four ANOVA were computed and the results are discussed in the following sections.

Data and results of Two-way ANOVA for Achievement in Malayalam Language Skills Post-Test II by Instructional-Learning Strategies by Non-Verbal Intelligence for the three samples (Total, Boys and Girls) are summarised and presented in Table 4.30.

TABLE 4.30

**Data and Results of Two-way ANOVA of Achievement in
Malayalam Language Skills Post-Test II (Objective wise and Total score)
By Instructional Learning Strategies By Non-Verbal Intelligence for Total Sample, Boys and Girls**

Sample	Dependent Variable		Main effect of Instructional-Learning Strategies	Main Effect of Non-Verbal Intelligence	Interaction effect of Instructional Learning Strategies and Non- Verbal Intelligence
Total (N=100)	Achievement in Malayalam Language Skills Post-Test II	SS	27.430	3.945	.260
		MSS	27.430	3.945	.260
		df	1	1	1
	Knowledge category	F	17.579**	2.528	167
	Comprehension category	SS	1139.749	48.852	.086
		MSS	1139.749	48.852	.086
		df	1	1	1
		F	57.415**	2.461	.004
	Application category	SS	84.938	18.945	.011
		MSS	84.938	18.945	.011
		df	1	1	1
		F	19.103**	4.261*	.002
Total Score	SS	2324.564	177.638	.103	
	MSS	2324.564	177.638	.103	
	df	1	1	1	
	F	57.336**	4.381*	.003	
Boys (N = 55)	Achievement in Malayalam Language Skills Post-Test II	SS	15.662	3.781	.026
		MSS	15.662	3.781	.026
		df	1	1	1
	Knowledge category	F	15.613**	3.769	.026
	Comprehension category	SS	466.866	19.458	.433
		MSS	466.866	19.458	.433
		df	1	1	1
		F	21.853**	.911	.020
	Application category	SS	48.057	1.690	9.112
		MSS	48.057	1.690	9.112
		df	1	1	1
		F	14.338**	.504	2.719
Total Score	SS	1056.051	58.608	12.359	
	MSS	1056.051	58.608	12.359	
	df	1	1	1	
	F	29.260**	1.624	.342	
Girls (N = 45)	Achievement in Malayalam Language Skills Post-Test I	SS	20.376	.328	.037
		MSS	20.376	.328	.037
		df	1	1	1
	Knowledge category	F	17.841**	.287	.032
	Comprehension category	SS	816.245	16.641	15.905
		MSS	816.245	16.641	15.905
		df	1	1	1
		F	85.755**	1.748	1.671
	Application category	SS	45.845	23.069	18.083
		MSS	45.845	23.069	18.083
		df	1	1	1
		F	13.140**	6.612*	5.183*
Total Score	SS	1588.412	89.393	71.112	
	MSS	1588.412	89.393	71.112	
	df	1	1	1	
	F	96.014**	5.403*	4.298*	

* < P < 0.05

** - P < 0.01

4.3.2.1. Main Effect of Instructional-Learning Strategies

Results of ANOVA as per Table 4.30 reveal that the obtained F-values for the main effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample, Boys and Girls exceed the critical limit set for significant at 0.01 level for appropriate degrees of freedom.

This result suggests that, changes in the levels of Instructional-Learning Strategies have significant influence upon the Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample, Boys and Girls.

4.3.2.2. Main Effect of Non-Verbal Intelligence

The F-values obtained for the main effect of Non-Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test II were found to be significant at .05 level only in four out of twelve ANOVA. They are i) For Total Sample Achievement in Application category and Total score and ii) For Girls Achievement in Application category and Total score).

No significant single effect was noticed in other eight ANOVA.

4.3.2.3. Interaction Effect of Instructional-Learning Strategies and Non-Verbal Intelligence

When the result of interaction effect on Achievement in Malayalam Language Skills Post-Test II was studied, only two out of twelve F-values found significant. Significant F-values are noticed for Application category and Total Achievement scores for Girls in the sample.

The results suggest that Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) do not depend on Instructional-Learning Strategies and Non-Verbal Intelligence Combined.

4.3.2.4. Comparison of Mean Scores of Achievement in Malayalam Language Skills Post-Test II Between Two Groups Categorised Based on Instructional-Learning Strategies

Mean scores of Achievement in Malayalam Language Skills - Post Test II (Objective wise and Total score) of two groups categorised based on Instructional-Learning Strategies (CLS and CMT) were compared using Scheffé Test of Post-hoc comparison. Significant main effect of Instructional-Learning Strategies were noticed in all ANOVA. Therefore, Scheffé Test was undertaken for the Total Sample, Boys and Girls.

In Table 4.31 Data and results of the Scheffe Test of Post-hoc comparisons are presented.

TABLE 4.31

Data and Results of the Scheffé Test of Post-Hoc Comparison Between Means of Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) of the Two Groups of Sample Based on Instructional-Learning Strategies for Total Sample, Boys and Girls

Sample	Dependent Variables	Means		F value	Value of F'		Level of significance
		M ₁ CLS	M ₂ CMT		0.05	0.01	
Total (N = 50-50)	Achievement in Malayalam Language Skills Post Test II Knowledge category	3.28	2.04	24.64	3.94	6.90	0.01
	Comprehension category	15.24	7.64	72.75	3.94	6.90	0.01
	Application category	4.38	2.14	28.19	3.94	6.90	0.01
	Total Score	22.90	11.82	75.70	3.94	6.90	0.01
Boys (N = 30-25)	Achievement in Malayalam Language Skills Post-Test II Knowledge category	2.63	1.40	20.57	4.02	7.12	0.01
	Comprehension category	13.00	6.68	25.50	4.02	7.12	0.01
	Application category	3.50	1.48	16.61	4.02	7.12	0.01
	Total Score	19.13	9.56	34.60	4.02	7.12	0.01
Girls (N = 20-25)	Achievement in Malayalam Language Skills Post-Test II Knowledge category	4.25	2.68	33.00	4.06	7.24	0.01
	Comprehension category	18.60	8.60	116.71	4.06	7.24	0.01
	Application category	5.70	2.80	26.78	4.06	7.24	0.01
	Total Score	28.55	14.08	140.65	4.06	7.24	0.01

CLS - Cooperative Learning Strategy with Built-in-Peer Teaching

CMT - Conventional Method of Teaching

Table 4.31 shows the F-values obtained for the comparison of mean retention scores (Post-Test II Objective wise and Total score) for the Total Sample, Boys and Girls.

All F-values are found greater than the values of F' required for significance at 0.01 level (df = 1,98). This shows significant difference in the mean retention scores (Post-Test II Objective wise and Total score) between the CLS and CMT group of pupils in the Total Sample, Boys and Girls.

In all comparisons, high mean scores were seen associated with the CLS group indicating its advantage over the CMT group.

4.3.2.5. Comparison of Mean Scores of Achievement in Malayalam Language Skills Post-Test II Between Two Groups categorised Based on Non-Verbal Intelligence

Post-hoc comparisons between the mean Achievement (Post-Test II) of two groups of pupils categorised on the basis of Non-Verbal Intelligence (BANI and AANI) were attempted using the Scheffé procedure. In the Two-way ANOVA significant F-values for the main effect of Non-Verbal Intelligence were obtained on Achievement in Application category and Total score for the Total Sample and Girls. In Boys in the sample, no significant main effect was noticed. Therefore, Post-hoc comparisons were done only for the Total Sample and Girls.

Data and results of the Scheffé Test of Post-hoc comparisons are presented in Table 4.32.

TABLE 4.32

**Data and Results of the Scheffé Test of Post-Hoc
Comparison Between Means of Achievement in Malayalam Language Skills Post-Test II
of the Two Groups of Sample Based on Non-Verbal Intelligence For Total Sample and Girls**

Sample	Dependent Variables	Means		F value	Value of F'		Level of significance
		M ₁ BANI	M ₂ AANI		0.05	0.01	
Total (N = 52-48)	Achievement in Malayalam Language Skills Post-Test II Application category	2.56	4.06	12.65	3.94	6.90	0.01
	Total Score	14.44	20.52	22.76	3.94	6.90	0.01
Girls (N = 24-21)	Achievement in Malayalam Language Skills Post-Test II Application category	2.92	5.43	20.22	4.06	7.24	0.01
	Total Score	16.50	25.09	49.97	4.06	7.24	0.01

BANI - Below Average Non-Verbal Intelligence

AANI - Above Average Non-Verbal Intelligence

As shown in Table 4.32 significant F-values were obtained for the comparison of mean scores of Achievement (Application category and Total score) between the BANI group and AANI group for the Total Sample and Girls. The F-values are greater than the values of F' required for significance at 0.01 level for appropriate degrees of freedom.

High mean scores are associated with the AANI group of the sample than the BANI group indicate its advantage over the BANI group of pupils.

4.3.3.0. Main Effect and Interaction Effect of Instructional-Learning Strategies and Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample, Boys and Girls

Data and results of twelve ANOVA undertaken to examine the main effect and interaction effect of Instructional-Learning Strategies and Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test I are presented Table 4.33.

TABLE 4.33

Data and Results of Two-way ANOVA of Achievement in Malayalam Language Skills Post-Test I
(Objective wise and Total score) By Instructional-Learning Strategies By Verbal Intelligence for Total Sample, Boys and Girls

Sample	Dependent Variable		Main effect of Instructional-Learning Strategies	Main Effect of Verbal Intelligence	Interaction effect of Instructional Learning Strategies and Verbal Intelligence	
Total (N=100)	Achievement in Malayalam Language Skills Post-Test I	SS	39.974	6.569	3.410	
		MSS	39.974	6.569	3.410	
		df	1	1	1	
	Knowledge category	F	18.003**	2.958	1.536	
		Comprehension category	SS	1276.467	539.624	6.570
			MSS	1276.467	539.624	6.570
	df		1	1	1	
	Application category	F	59.984**	25.358**	.309	
		SS	213.619	135.239	5.825	
		MSS	213.619	135.239	5.825	
	Total Score	df	1	1	1	
		F	27.587**	17.465**	.752	
SS		3211.022	1400.401	2.879		
Boys (N = 55)	Achievement in Malayalam Language Skills Post-Test II	MSS	3211.022	1400.401	2.879	
		df	1	1	1	
		F	63.582**	27.730**	0.57	
	Knowledge category	SS	28.322	2.969	.747	
		MSS	28.322	2.969	.747	
		df	1	1	1	
	Comprehension category	F	10.688**	1.121	.282	
		SS	439.680	432.878	84.792	
		MSS	439.680	432.878	84.792	
	Application category	df	1	1	1	
		F	17.197**	16.931**	3.316	
		SS	108.894	85.301	.001	
Total Score	MSS	108.894	85.301	.001		
	df	1	1	1		
	F	13.251**	10.380**	.000		
Girls (N = 45)	Achievement in Malayalam Language Skills Post-Test I	SS	1348.774	1008.999	69.225	
		MSS	1348.774	1008.999	69.225	
		df	1	1	1	
	Knowledge category	F	22.149**	16.569**	1.137	
		SS	18.393	.825	4.727	
		MSS	18.393	.825	4.727	
	Comprehension category	df	1	1	1	
		F	13.102**	.587	3.367	
		SS	977.372	82.050	123.337	
	Application category	MSS	977.372	82.050	123.337	
		df	1	1	1	
		F	105.419**	8.850**	13.303**	
Total Score	SS	135.575	25.243	27.057		
	MSS	135.575	25.243	27.057		
	df	1	1	1		
Total Score	F	23.408**	4.358*	4.672*		
	SS	2227.399	224.711	341.563		
	MSS	2227.399	224.711	341.563		
	df	1	1	1		
	F	111.631**	11.262**	17.118**		

* 0- P < 0.05

** - P < 0.01

4.3.3.1. *Main Effect of Instructional-Learning Strategies*

Table 4.33 shows that all the F-values for the main effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) were found significant at 0.01 level ($F < 6.90$, df: 1,96); for Total Sample, Boys ($F < 7.08$, df: 1,51) and Girls ($F < 7.23$, df: 1,41).

Results of ANOVA, suggest that variation in Achievement in Malayalam Language Skills (Post-Test I Objective wise and Total score) is attributable to the changes in Instructional-Learning Strategies.

4.3.3.2. *Main Effect of Verbal Intelligence*

The obtained F-values for the main effect of Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test I for the Objectives namely comprehension category, Application category and Total score were found significant at 0.01 level for Total Sample, Boys and Girls ($P < 0.05$ Total Score) for appropriate degrees of freedom.

From the result of ANOVA it may be concluded that Achievement in Malayalam Language Skills Post-Test I for the Objective Comprehension and Application and Total score are depend on changes in the levels of Verbal Intelligence.

4.3.3.3. *Interaction Effect of Instructional-Learning Strategies and Verbal Intelligence*

In the case of Girls in the sample only, the interaction effect of Instructional-Learning Strategies and Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test I Comprehension category and Total score ($P < 0.01$) and Application category ($P < 0.05$) were found significant for appropriate degrees of freedom.

Results of ANOVA suggest that in the case of Girls, Achievement in Malayalam Language Skills Post-Test I (Comprehension category, Application category and Total score) vary with regard to the joint effect of Instructional-Learning Strategies and Verbal Intelligence, and not as in Total Sample and Boys.

4.3.3.4. *Comparison of Mean Scores of Achievement in Malayalam Language Skills Post-Test I Between Two Groups Categorised Based on Instructional-Learning Strategies*

Mean scores of Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) of two groups categorised based on Instructional-Learning Strategies (CLS and CMT) were compared using Scheffé Test. In twelve ANOVA undertaken, significant F-values obtained for Instructional-Learning Strategies. Therefore, comparison was done for the Total Sample, Boys and Girls.

Data and results of the Scheffé Test of Post-hoc comparisons are presented in Table 4.34.

TABLE 4.34

**Data and Results of the Scheffé Test of Post-Hoc
Comparison Between Means of Achievement in Malayalam Language Skills Post-Test I
of the Two Groups of Sample Based on Instructional-Learning Strategies For Total Sample, Boys and Girls**

Sample	Dependent Variables	Means		F value	Value of F'		Level of significance
		M ₁ CLS	M ₂ CMT		0.05	0.01	
Total (N = 50-50)	Achievement in Malayalam Language Skills Post-Test I Knowledge category	4.64	3.26	21.46	3.94	6.90	0.01
	Comprehension category	19.22	11.10	77.46	3.94	6.90	0.01
	Application category	6.86	3.46	37.34	3.94	6.90	0.01
	Total Score	30.72	17.82	82.38	3.94	6.90	0.01
Boys (N = 30-25)	Achievement in Malayalam Language Skills Post-Test I Knowledge category	4.30	2.76	22.37	4.02	7.12	0.01
	Comprehension category	17.67	10.96	44.02	4.02	7.12	0.01
	Application category	5.97	2.68	32.96	4.02	7.12	0.01
	Total Score	27.93	16.40	54.57	4.02	7.12	0.01
Girls (N = 20-25)	Achievement in Malayalam Language Skills Post-Test I Knowledge category	5.15	3.76	34.50	4.06	7.24	0.01
	Application category	21.55	11.24	286.66	4.06	7.24	0.01
	Total Score	34.90	19.24	307.31	4.06	7.24	0.01

CLS - Cooperative Learning Strategy

CMT - Conventional Method of Teaching

All the obtained F-values for the comparison of mean Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) were found significant beyond 0.01 level for three samples.

In all comparisons, high mean scores were associated with the CLS group indicating its advantage over the CMT group.

4.3.3.5. *Comparison of Mean Achievement in Malayalam Language Skills Post-Test I between Two Groups Categorised Based on Verbal Intelligence*

Mean Achievement in Malayalam Language Skills Post-Test I of two groups of pupils based on Verbal Intelligence (Below Average Verbal Intelligence - BAVI and Above Average Verbal Intelligence - AAVI) were compared using Scheffé Test. Significant F-values for Verbal Intelligence were obtained only for Achievement in Malayalam Language Skills Total score and Application category for the Total Sample Boys and Girls.

Data and results of the Scheffé Test of Post-hoc Comparison are presented in Table 4.35.

TABLE 4.35

**Data and Results of the Scheffé Test of Post-Hoc
Comparison Between Means of Achievement in Malayalam Language Skills Post-Test I
of the Two Groups of Sample Based on Verbal Intelligence For Total Sample, Boys and Girls**

Sample	Dependent Variables	Means		F value	Value of F'		Level of significance
		M ₁ BAVI	M ₂ AAVI		0.05	0.01	
Total (N = 45-55)	Achievement in Malayalam Language Skills Post-Test I Application category	3.56	6.47	30.93	3.94	6.90	0.01
	Total Score	18.91	28.65	46.49	3.94	6.90	0.01
Boys (N = 28-27)	Achievement in Malayalam Language Skills Post-Test I Application category	3.00	6.00	15.03	4.02	7.12	0.01
	Total Score	17.61	27.96	24.18	4.02	7.12	0.01
Girls (N = 17-28)	Achievement in Malayalam Language Skills Post-Test I Application category	4.47	6.93	11.19	4.06	7.24	0.01
	Total Score	21.06	29.32	36.08	4.06	7.24	0.01

BAVI - Below Average Verbal Intelligence

AAVI - Above Average Verbal Intelligence

As presented in Table 4.35 the F-values obtained for the comparisons of mean Achievement scores between BAVI and AAVI are found significant beyond 0.01 level for Total Sample Boys and Girls.

The results indicated that the AAVI groups of subjects in the relevant sample are advantageous than the BAVI group with regard to their Achievement in Malayalam Language Skills. This is due to the high mean scores associated with the AAVI group.

4.3.4.0. Main Effect and Interaction Effect of Instructional-Learning Strategies and Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample, Boys and Girls

The Data and results of Two-way ANOVA is summarised and presented in Table 4.36.

TABLE 4.36

Data and Results of Two-way ANOVA of Achievement in
Malayalam Language Skills Post-Test II (Objective wise and Total score)
By Instructional-Learning Strategies By Verbal Intelligence for Total Sample, Boys and Girls

Sample	Dependent Variable		Main effect of Instructional-Learning Strategies	Main Effect of Verbal Intelligence	Interaction effect of Instructional Learning Strategies and Verbal Intelligence
Total (N=100)	Achievement in Malayalam Language Skills Post-Test II Knowledge category	SS	34.474	1.565	.137
		MSS	34.474	1.565	.137
		df	1	1	1
		F	21.730**	.986	.086
	Comprehension category	SS	1170.191	306.072	24.615
		MSS	1170.191	306.072	24.615
		df	1	1	1
		F	69.176**	18.093**	1.455
	Application category	SS	96.219	44.447	2.489
		MSS	96.219	44.447	2.489
		df	1	1	1
		F	23.158**	10.698**	.599
Total Score	SS	2488.873	645.799	9.081	
	MSS	2488.873	645.799	9.081	
	df	1	1	1	
	F	69.965**	18.154**	.255	
Boys (N = 55)	Achievement in Malayalam Language Skills Post-Test II Knowledge category	SS	20.485	.044	.036
		MSS	20.485	.044	.036
		df	1	1	1
		F	19.034**	0.41	.033
	Comprehension category	SS	429.940	188.532	90.862
		MSS	429.940	188.532	90.862
		df	1	1	1
		F	26.416**	11.584**	5.583*
	Application category	SS	45.344	14.042	.001
		MSS	45.344	14.042	.001
		df	1	1	1
		F	13.790**	4.270**	.000
Total Score	SS	1023.666	298.191	86.773	
	MSS	1023.666	298.191	86.773	
	df	1	1	1	
	F	34.167**	9.961**	2.899	
Girls (N = 45)	Achievement in Malayalam Language Skills Post-Test II Knowledge category	SS	26.460	.282	.078
		MSS	26.460	.282	.078
		df	1	1	1
		F	23.165**	.247	.068
	Comprehension category	SS	1102.614	.436	21.155
		MSS	1102.614	.436	21.155
		df	1	1	1
		F	112.677**	.045	2.162
	Application category	SS	83.412	18.924	6.307
		MSS	83.412	18.924	6.307
		df	1	1	1
		F	21.513**	4.881**	1.627
Total Score	SS	2254.592	17.819	46.680	
	MSS	2254.592	17.819	46.680	
	df	1	1	1	
	F	119.384**	.944	2.472	

* - P < 0.05

** - P < 0.01

4.3.4.1. *Main Effect of Instructional Learning Strategies*

Table 4.36 shows significant F-values ($P < 0.01$) obtained for the main effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample Boys and Girls for appropriate degrees of freedom.

Results of ANOVA suggest that a change in the levels of Instructional Learning Strategies produce a change in Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample, Boys and Girls.

4.3.4.2.. *Main Effect of Verbal Intelligence*

Significant F-values were obtained for the main effect of Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test II (Comprehension category, Application category and Total score) for Total Sample and Boys ($P < 0.01$) and Application category only for Girls ($P < 0.05$) as per Table 4.36.

Results of ANOVA suggest that variation in Achievement in Malayalam Language Skills Post-Test II (Comprehension category, Application category and Total score) for Total Sample and Boys, (Application category) only for Girls are attributed to the changes in the level of Verbal Intelligence.

4.3.4.3. *Interaction Effect of Instructional-Learning Strategies and Verbal Intelligence*

Interaction effect of Instructional Learning Strategies X Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for the Total Sample, Boys and Girls were studied. For Boys in the sample, significant interaction effect was found on Achievement in Malayalam

Language Skills. Comprehension category ($P < 0.05$) The obtained F-values for Total Sample and Girls were not found significant even at 0.05 level.

Results of 2×2 ANOVA indicated that Achievement in Malayalam Language Skills Post-Test II (Comprehension category) of Boys vary with regard to the combined effect of Instructional Learning Strategies and Verbal Intelligence.

4.3.4.4. Comparison of Mean Scores of Achievement in Malayalam Language Skills Post-Test II Between Two Groups Categorised Based on Instructional-Learning Strategies

Significant F-values were obtained in twelve ANOVA for Instructional Learning Strategies. Therefore, mean scores of Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) of two groups categorised on the basis Instructional-Learning Strategies (CLS and CMT) were compared.

Data and results of the Scheffé Test of Post-hoc comparisons are summarised and presented in Table 4.37.

TABLE 4.37

**Data and Results of the Scheffé Test of Post-Hoc
Comparison Between Means of Achievement in Malayalam Language Skills Post-Test II
of the Two Groups of Sample Based on Instructional-Learning Strategies For Total Sample, Boys and Girls**

Sample	Dependent Variables	Means		F value	Value of F'		Level of significance
		M ₁ CLS	M ₂ CMT		0.05	0.01	
Total (N = 50-50)	Achievement in Malayalam Language Skills Post-Test II Knowledge category	3.28	2.04	24.33	3.94	6.90	0.01
	Comprehension category	15.24	7.64	85.39	3.94	6.90	0.01
	Application category	4.38	2.14	30.23	3.94	6.90	0.01
	Total Score	22.90	11.82	116.95	3.94	6.90	0.01
Boys (N = 30-25)	Achievement in Malayalam Language Skills Post -Test II Knowledge category	2.63	1.40	35.02	4.02	7.12	0.01
	Comprehension category	13.00	6.68	61.37	4.02	7.12	0.01
	Application category	3.50	1.48	31.00	4.02	7.12	0.01
	Total Score	19.13	9.56	76.47	4.02	7.12	0.01
Girls (N = 20-25)	Achievement in Malayalam Language Skills Post-Test II Knowledge category	4.25	2.65	56.14	4.06	7.24	0.01
	Comprehension category	18.60	8.60	255.36	4.06	7.24	0.01
	Application category	5.70	2.80	54.19	4.06	7.24	0.01
	Total Score	28.55	14.08	277.10	4.06	7.24	0.01

CLS - Cooperative Learning Strategy

CMT - Conventional Method of Teaching

As per Table 4.37 significant difference exist between the CLS and CMT group with regard to mean scores of Achievement in Malayalam Language Skills (Post-Test II) at 0.01 level for all comparisons.

High mean scores were associated with the CLS group indicated the advantage of CLS group over the CMT group in the mean scores of Post-Test II.

4.3.4.5. Comparison of Mean Scores of Achievement in Malayalam Language Skills Post-Test II Between Two Groups Categorised Based on Verbal Intelligence

Scheffé Test of Post-hoc comparison was used to compare the mean Achievement in Malayalam Language Skills Post-Test II scores of two groups of the subjects based on Verbal Intelligence (BAVI and AAVI groups). Significant F-values for Verbal Intelligence were obtained on Achievement in Comprehension category, Application category and Total score for Total Sample and Boys. In Girls, significant F-value was noticed on Application category only. Thus Post-hoc comparisons were undertaken only for the Objective wise and Total scores as listed.

Data and results of the Scheffé Test of Post-hoc comparisons are presented in Table 4.38.

TABLE 4.38

**Data and Results of the Scheffé Test of Post-Hoc
Comparison Between Means of Achievement in Malayalam Language Skills Post-Test II
of the Two Groups of Sample Based on Verbal Intelligence For Total Sample, Boys and Girls**

Sample	Dependent Variables	Means		F value	Value of F'		Level of significance
		M ₁ BAVI	M ₂ AAVI		0.05	0.01	
Total (N = 45-55)	Achievement in Malayalam Language Skills Post-Test II Comprehension category	8.67	13.62	35.86	3.94	6.90	0.01
	Application category	2.31	4.04	17.81	3.94	6.90	0.01
	Total Score	13.49	20.53	35.27	3.94	6.90	0.01
Boys (N = 28-27)	Achievement in Malayalam Language Skills Post -Test II Comprehension category	7.82	12.52	18.66	4.02	7.12	0.01
	Application category	1.93	3.26	7.40	4.02	7.12	0.01
	Total Score	11.75	17.93	17.53	4.02	7.12	0.01
Girls (N = 17-28)	Achievement in Malayalam Language Skills Post-Test II	3.30	4.91	7.51	4.06	7.24	0.01
	Application category						

BAVI - Below Average Verbal Intelligence

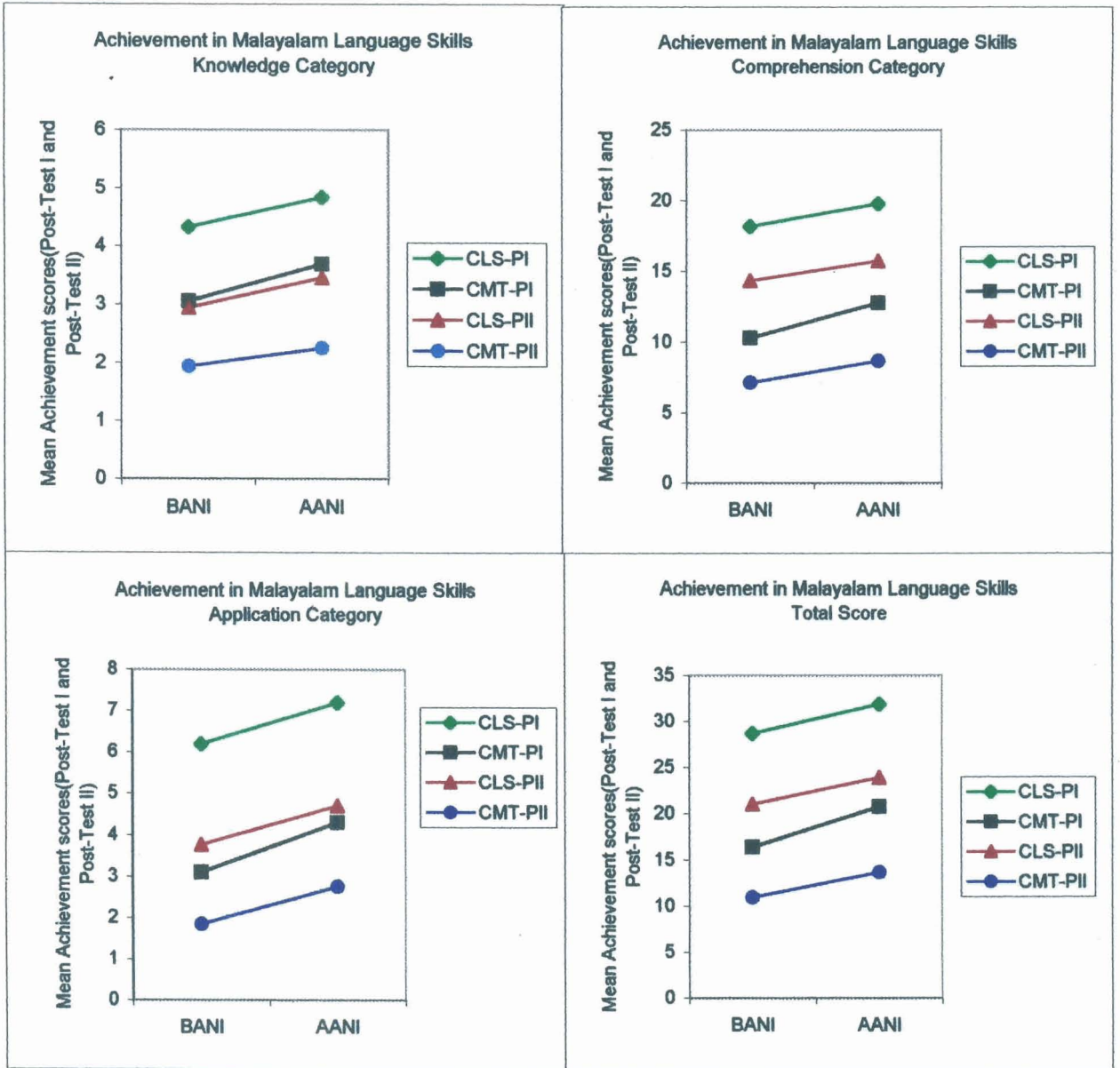
AAVI - Above Average Verbal Intelligence

Table 4.38 shows that significant F-values were obtained for the comparison of mean Post-Test II scores between the BAVI group and AAVI group in the Total Sample, Boys and Girls ($P < 0.01$). This results show that statistically significant difference exists in the mean Post-Test II scores between the BAVI group and AAVI group at 0.01 level for the Total Sample, Boys and Girls.

Since high mean scores are attached with the AAVI group than the BAVI group of subjects, AAVI group was found advantageous than the BAVI group.

4.4.0. Graphical Representation of Two-way ANOVA

It was noted that in all the fortyeight ANOVA undertaken to study the main effect and interaction effect of Instructional-Learning Strategies and the two Cognitive Entry Behaviour selected on Achievement in Malayalam Language Skills of standard VI pupils, the Experimental group taught through Cooperative Learning Strategy have high mean Achievement score than the Control group taught through Conventional Method of Teaching. Therefore, the investigator made an attempt to study the graphical representation of the results as revealed in ANOVA which is presented in Figure 4.1. For plotting graphs the mean scores of Achievement in Malayalam Language Skills (Objective wise and Total score) of the Experimental and Control group were plotted in the ordinate of the graph. Two levels of Non-Verbal Intelligence (Above Average Non-Verbal Intelligence and Below Average Non-Verbal Intelligence) were plotted as abscissa. The two Instructional-Learning Strategies (Cooperative Learning Strategy - CLS) and Conventional Method of Teaching - CMT) were represented as two lines on the graph.



CLS - Cooperative Learning Strategy
 PI - Post -Test I PII - Post -Test II
 BANI - Below Average Nonverbal Intelligence

CMT- Conventional Method of Teaching
 AANI - Above Average Nonverbal Intelligence

FIGURE 4-1 Graphical representation of Two-Way ANOVA of Achievement in Malayalam Language Skills (Post-Test I and Post-Test II) By Instructional - Learning Strategies By Nonverbal Intelligence for Total Sample

The graphical representation revealed that high mean Achievement scores are associated with the CLS group in Post-Test I and Post-Test II high light the positive result in all ANOVA.

4.5.0. Summary and Discussion of Two-way ANOVA

Twentyfour ANOVA were undertaken to examine whether Achievement in Malayalam Language Skills Post-Test I (Objective wise score and Total score) of pupils of standard VI are depended on differences in the Instructional-Learning Strategies, Non-Verbal Intelligence and Verbal Intelligence or not. Similarly, twentyfour ANOVA were also undertaken to study the effect of Instructional-Learning Strategies, Non-Verbal Intelligence and Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test II.

The F-values obtained in all fortyeight ANOVA were consolidated and presented in Table 4.39 and Table 4.40.

TABLE 4.39

**Summary of F-values of the Main and Interaction Effects of
Instructional-Learning Strategies and Non-Verbal Intelligence and Verbal Intelligence on
Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for Total Sample, Boys and Girls**

Sample	Dependent Variable	Main Effect - F-ratios				Interaction Effect F-ratios	
		Instructional Learning Strategies	Non-Verbal Intelligence	Instructional Learning Strategies	Verbal Intelligence	Instructional Learning Strategies X Non-Verbal Intelligence	Instructional Learning Strategies X Verbal Intelligence
Total	Achievement in Malayalam Language Skills Knowledge category	14.156**	3.553	18.003**	2.958	0.010	1.536
	Comprehension category	48.131**	3.701	59.984**	25.358**	.164	.309
	Application category	23.427**	2.905	27.587**	17.465**	.017	.752
	Total Score	49.732**	5.079*	63.582**	27.730**	110	0.57
Boys	Achievement in Malayalam Language Skills Knowledge category	9.075**	3.508	10.688**	1.121	0.018	0.282
	Comprehension category	14.623**	1.005	17.197**	16.931**	0.011	3.316
	Application category	14.122*	0.050	13.251**	10.380**	1.705	0.000
	Total Score	19.108**	1.157	22.149**	16.569**	0.249	1.137
Girls	Achievement in Malayalam Language Skills Knowledge category	9.870**	0.479	13.102**	0.587	0.470	3.367
	Comprehension category	64.605*	3.692	105.419**	8.850**	2.282	13.303
	Application category	16.573**	8.990**	23.408**	4.358*	7.174*	4.672*
	Total Score	68.310**	8.246**	111.631**	11.262**	5.938*	17.118**

* - $P < 0.05$ ** - $P < 0.01$

TABLE 4.40

**Summary of F-values of the Main and Interaction Effects of
Instructional-Learning Strategies and Non-Verbal Intelligence and Verbal Intelligence on
Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) for Total Sample, Boys and Girls**

Sample	Dependent Variable	Main Effect - F-ratios				Interaction Effect F-ratios	
		Instructional Learning Strategies	Non-Verbal Intelligence	Instructional Learning Strategies	Verbal Intelligence	Instructional Learning Strategies X Non-Verbal Intelligence	Instructional Learning Strategies X Verbal Intelligence
Total	Achievement in Malayalam Language Skills Post-Test II						
	Knowledge category	17.579**	2.528	21.730**	0.986	0.167	0.086
	Comprehension category	57.315**	2.461	69.176**	18.093**	0.004	1.455
	Application category	19.103**	4.261*	23.158**	10.698**	0.002	0.599
	Total Score	57.336**	4.381*	69.965**	18.154**	0.003	0.255
Boys	Achievement in Malayalam Language Skills Post-Test II						
	Knowledge category	15.613**	2.769	19.034**	0.041	0.026	0.033
	Comprehension category	21.853**	0.911	26.416**	11.584**	0.020	5.583*
	Application category	14.338**	0.504	13.790**	4.270*	2.719	0.000
	Total Score	29.260**	1.624	34.167**	9.961**	0.342	2.899
Girls	Achievement in Malayalam Language Skills Post-Test II						
	Knowledge category	17.841**	0.287	23.165**	0.247	0.032	0.068
	Comprehension category	85.755**	1.748	112.677**	0.045	1.671	2.162
	Application category	13.140**	6.612*	21.513**	4.881*	5.183*	1.627
	Total Score	96.014**	5.403*	119.384**	0.944	4.298*	2.472

* - P < 0.05

** - P < 0.01

A scrutiny of the results of Forty-eight ANOVA conducted on Post-Test I and Post-Test II revealed the following.

i) Instructional-Learning Strategy has significant main effect on Post-Test I and Post-Test II in all the forty-eight ANOVA undertaken. The results suggest that Achievement in Malayalam Language Skills Post-Test I and Post-Test II is depended on variation in Instructional-Learning Strategies. ii) In seven out of twenty-four ANOVA, significant main effect of Non-Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test I and Post-Test II was noticed. iii) With regard to Verbal Intelligence, in sixteen out of twenty-four ANOVA significant main effect on Achievement in Malayalam Language Skills Post-Test I and Post-Test II was found to exist. Therefore, it may be noted that variation in Achievement in Malayalam Language Skills Post-Test I and Post-Test II may be attributed to variation in the levels of Non-Verbal Intelligence and Verbal Intelligence to a low extent. iv) Table 4.39 and Table 4.40 shows that the interaction effect of Instructional-Learning Strategies and Non-Verbal Intelligence on Post-Test I and Post-Test II was found only in four out of forty-eight ANOVA. Significant F-values for the interaction of Instructional-Learning Strategies and Verbal Intelligence was found in three out of forty-eight ANOVA. Therefore, it may be inferred that Achievement in Malayalam Language Skills Post-Test I and Post-Test II is attributed to Instructional-Learning Strategies singly and not to the combined effect of Instructional-Learning Strategies and Intelligence Non-Verbal or Verbal (the Cognitive Entry Behaviour of the sample).

CHAPTER 5

SUMMARY FINDINGS AND SUGGESTIONS

Study in Retrospect
Major Findings
Tenability of Hypotheses
Suggestions for Improving Educational Practice
Suggestions for Further Research

SUMMARY FINDINGS AND SUGGESTIONS

An overview of the important stages in the execution of the present study is presented in this Chapter under the following major sections.

5.1 STUDY IN RETROSPECT

5.2 MAJOR FINDINGS

5.3 TENABILITY OF HYPOTHESES

5.4 SUGGESTIONS FOR IMPROVING EDUCATIONAL PRACTICE

5.5 SUGGESTIONS FOR FURTHER RESEARCH

5.1 STUDY IN RETROSPECT

The different aspects in the various stages of the present study such as the Problem investigated, Variables, Objectives and Hypotheses and the Procedure are retrospectively visualised and presented in the following subsections.

5.1.1 Restatement of the Problem

The present investigation was an attempt to study whether Achievement in Malayalam Language Skills vary when select Instructional-Learning Strategies adopted in a conventional class. The study also focussed to understand how Cognitive Entry Behaviour of the pupils influence Achievement in Malayalam Language Skills (immediate Post-Test and delayed Test). Therefore, the present study was executed in a context when select topics of the prescribed syllabus are taught through Cooperative Learning Strategy with built-in-Peer Teaching.

The problem under investigation was stated as **"INTERACTION EFFECT OF SELECT INSTRUCTIONAL-LEARNING STRATEGIES (COOPERATIVE LEARNING AND PEER TEACHING) AND COGNITIVE ENTRY**

BEHAVIOUR OF STANDARD VI PUPILS ON ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS".

5.1.2 Variables of the study

The method adopted for the investigation was Experimental Study with Pre-Test - Post-Test-Equivalent Group design. The Variables selected to investigate the problem under Experimental design are the following.

5.1.2.1 Independent Variables

Two sets of Independent Variables were selected for the present study. They are the following.

A. Instructional-Learning Strategies

Two methods of Instruction namely Cooperative Learning Strategy which is integrated with Peer Teaching and Conventional Method were selected as Experimental variables.

i) Cooperative Learning Strategy

It is a technique of small group instruction in which individual seat work is replaced by Cooperative Learning activities and the small groups work together as practice or application exercises.

Peer-Teaching Strategy

In Peer Teaching, children teach other children of same age who cannot gain an average level of learning outcomes. They themselves act as tutors in turns. In essence, Peer Teaching promotes Cooperative Learning. Therefore, in the present study, Peer Teaching has been integrated with Cooperative Learning Strategy instead of being treated as a separate variable.

ii) Conventional Method of Teaching

Objective based method of Instruction at present adopted and followed in the primary schools of Kerala was selected for the present study.

B. Cognitive Entry Behaviour

The second set of Independent Variables were two Cognitive Entry Behaviours of the sample. They are:

- i) Non-Verbal Intelligence, and
- ii) Verbal Intelligence

5.1.2.2 *Dependent Variables*

Achievement and retention in Malayalam Language Skills Post-Test I and Post-Test II (Objective wise and Total score) were considered as Dependent Variables. Specific variables coming under these category are:

- i) Achievement in Malayalam Language Skills - Knowledge category
- ii) Achievement in Malayalam Language Skills - Comprehension category
- iii) Achievement in Malayalam Language Skills - Application category and,
- iv) Achievement in Malayalam Language Skills - Total Score

5.1.2.3 *Control Variables*

The following variables were controlled in the present study.

- i) Previous Knowledge of the Subject Matter
- ii) Non-Verbal Intelligence, and
- iii) Verbal Intelligence

5.1.2.4 *Basal Variables*

The two basal variables adopted for the present study were:

- i) Sex of the sample, and
- ii) Socio-Economic Status

5.1.3 OBJECTIVES AND HYPOTHESES

The main purpose of the present study was to explore the relative effectiveness of Cooperative Learning with built-in-Peer Teaching strategy over the Conventional Method of Teaching Malayalam Language Skills of Standard VI Pupils. Specific objectives and hypotheses formulated were the following.

5.1.3.1 Objectives of the Study

Three sets of objectives were formulated. They are:

5.1.3.1a. To compare the mean Post-Test scores of Achievement in Malayalam Language Skills (Objective wise and Total score) of Experimental and Control group for the Total Sample and Subsamples based on sex.

5.1.3.1b. To compare the mean Gain scores of Achievement in Malayalam Language Skills of Experimental group and Control group for the Total Sample and Subsamples based on Sex (Tested immediately after teaching).

5.1.3.1c. To compare the mean retention scores of Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) of Experimental group and Control group for the Total Sample and Subsamples based on Sex (Tested one month after completing the experiment).

5.1.3.2. To study the effectiveness of Cooperative Learning Strategy with built-in-Peer Teaching over Conventional Method of Teaching on Achievement in Malayalam Language Skills when the initial difference in select variables namely Pre-Test, Non-Verbal Intelligence and Verbal Intelligence of the subjects are controlled.

5.1.3.3a. To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on Achievement in

Malayalam Language Skills (Post-Test I) of pupils of standard VI (Total Sample, Boys and Girls).

5.1.3.3b. To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of Standard VI (Total Sample, Boys and Girls).

5.1.3.3c. To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).

5.1.3.3d. To study the Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).

5.1.3.4 Hypotheses of the Study

The three sets of hypotheses formulated and tested for the study were the following.

5.1.3.4a. There will be significant difference in the mean Achievement in Malayalam Language Skills Post-Test I scores (Objective wise and Total score) between Experimental group and Control group for the Total Sample, Boys and Girls.

5.1.3.4b. There will be significant difference in the mean Achievement in Malayalam Language Skills Gain scores between Experimental group and Control group for the Total Sample, Boys and Girls.

5.1.3.4c. There will be significant difference in the mean Achievement in Malayalam Language Skills retention scores - Post-Test II (Objective wise and Total score) between Experimental group and Control group for the Total Sample, Boys and Girls.

5.1.3.5. Pupils taught through Cooperative Learning with built-in Peer Teaching Strategy will have high mean Achievement in Malayalam Language Skills (Post-Test I and Post-Test II) than that of pupils taught through Conventional Method of Teaching.

5.1.3.6a. There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of Standard VI (Total Sample, Boys and Girls).

5.1.3.6b. There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning and built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of pupils of standard VI (Total Sample, Boys and Girls).

5.1.3.6c. There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of Standard VI (Total Sample, Boys and Girls).

5.1.3.6d. There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls).

5.1.4 PROCEDURE

The various steps in the procedure of executing the present study are summarised in the following sub sections.

5.1.4.1 The Research Design

Pre-Test Post-Test Equivalent Group Design used for the Experiment is graphically represented as follows.

$G_1 O_1 X O_2$

$G_2 O_3 C O_4$

$O_1 O_3 =$ Pre-Test

$O_2 O_4 =$ Post-Test

$O_2 - O_1 =$ Gain Score

$O_4 - O_3 =$ Gain Score

G_1 - Experimental Group

G_2 - Control Group

X - Application of Experimental treatment

C - Application of Control treatment

Two groups of standard VI pupils equated on the basis of Previous Knowledge of Subject Matter, Verbal Intelligence and Socio-Economic Status were selected for the Experiment. One group treated as Experimental group, which was taught through Cooperative Learning with built-in-Peer Teaching strategy.

The other group treated as Control group was taught through Objective based Instruction Method.

5.1.4.2 Sample for the Study

Intact groups of standard VI pupils were selected as sample. Two intact groups of standard VI pupils from two classes each from four Upper Primary Schools were taken as Experimental group and Control group. Due representation was given to Rural-Urban Locality of the schools, Sex of the subjects and Instructional efficiency of schools in selecting the sample schools. The experiment was conducted on a sample of 100 pupils of standard VI from four Upper Primary Schools in Ernakulam District of Kerala. The Experimental group and Control group comprises 50 students each.

5.1.4.3 Selection of Topic for Treatment

The investigator selected one Prose lesson, one Poetry lesson and one Grammar topic from the Malayalam syllabus prescribed for standard VI in Kerala state. These topics were amenable for teaching through both Cooperative Learning with built-in-Peer Teaching Strategy and Conventional Method.

5.1.4.4 Instructional Materials and Tools used for the Study

Following Instructional materials and Tools were used for the present study.

i) Lesson Based on Cooperative Learning Strategy

Separate lessons were prepared for Prose, Poetry and Grammar topics based on the theoretical assumptions of 'Learning Together Model' and 'Peer Teaching'. Each lesson was arranged in four phases of Instructional-Learning activities, namely *(i) presentation of the goal as a group goal (ii) sharing the ideas*

and materials (iii) encouraging the division of labour, and (iv) rewarding the group for successful completion of the task.

ii) Lesson Based on Conventional Method of Teaching

Separate lessons were also prepared on the basis of Objective based Instructional model adopted by the NCERT.

Other tools used for the study were the following:

- i. Kerala University Verbal Group Test of Intelligence (Nair et al., 1968).*
- ii. Standard Progressive Matrices Test (Raven, 1958)*
- iii. General Data Sheet*

To collect informations about the Socio-Economic Status of the sample, this General Data sheet was used.

- iv. Achievement Test in Malayalam Language Skills (Pillai and Bindhu, 1997)*

An Achievement Test in Malayalam Language Skills developed by Pillai and Bindhu (1997) was used as the Pre-Test and Post-Test I and Post-Test II.

5.1.4.5 Procedure Adopted for Data Collection

For collecting the needed data, following procedures were adopted.

i) Administration of Pre-Test

The Experimental group and the Control group were administered Pre-Test before introducing the treatment.

ii) Treatments

Experimental group was taught the select topics through Cooperative Learning with built-in-Peer Teaching Strategy. The Control group was taught

using Conventional objective-based instructional method. Both the groups were taught for one month duration.

iii) Administration of Post-Test I

Post-Test I was administered to both the Experimental and Control group immediately after treatment.

iv) Administration of Post-Test II

Post-Test II was administered both to the Experimental and Control group one month after the treatment.

v) Administration of Other Tools

Data on other Independent Variables and Control Variables namely Non-Verbal Intelligence, Verbal Intelligence and Socio-Economic Status were collected by administering the appropriate tools.

5.1.4.6. Analysis of Data

The entire statistical processing of the data was done using Computer facilities. The Statistical Techniques employed for analysis of data are the following.

- i) Test of significance of difference between means.*
- ii) Two-way ANCOVA of 2x2 Factorial Design followed by Scheffé Test of Post-hoc comparison.*
- iii) Two-way ANOVA with 2x2 Factorial Design followed by Scheffé Test of Post-hoc Comparison.*

5.2 MAJOR FINDINGS OF THE STUDY

Major findings of the present study are presented in the following sections.

5.2.1 RESULTS OF MEAN DIFFERENCE ANALYSIS OF ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS AFTER EXPERIMENTAL TREATMENT.

Results of the mean difference analysis of Achievement in Malayalam Language Skills after Experimental treatment is presented in the following subsections.

5.2.1.1 Difference in the Mean scores of Achievement in Malayalam Language Skills Post-Test I of Experimental group and Control group

Significant difference in the mean Post-Test scores (Objective wise and Total score) between the Experimental group and Control group was found for the Total Sample, Boys and Girls at 0.01 level.

The obtained t-values are arranged in the decreasing order of magnitude and presented.

Dependent Variables	t-values		
	Total Sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test I Total Score	8.08	4.79	9.20
Comprehension category	7.90	4.22	9.31
Application category	5.66	3.93	5.08
Knowledge category	4.57	3.51	3.82

$P < 0.01$

5.2.1.2 Difference in Mean Gain Scores on Achievement in Malayalam Language Skills of Experimental group and Control group

Significant difference was found in the mean Gain scores (Achievement Total) between the Experimental group and the Control group at 0.01 level for Girls (CR = 12.56), Total Sample (CR = 10.99) and Boys (CR = 6.29).

5.2.1.3 Difference in Mean Scores of Achievement in Malayalam Language Skills Post-Test II of Experimental group and Control group

The t-values obtained for the comparison of Experimental and Control group between Post-Test II scores (Objective wise and Total score) for the Total Sample, Boys and Girls were found to be significant beyond 0.01 level. Significant t-values are presented in the decreasing order of magnitude.

Dependent Variables	t-values		
	Total Sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test I Total Score	8.60	5.89	10.92
Comprehension category	8.51	5.10	10.63
Application category	5.25	4.47	5.00
Knowledge category	4.95	4.03	4.67

$P < 0.01$

5.2.2 RESULTS OF COVARIANCE ANALYSIS (TOTAL SAMPLE)

Results of 40 Covariance Analysis of Achievement in Malayalam Language Skills Post-Test I and Post-Test II are presented in the following sub-sections.

5.2.2.1 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I with Previous Knowledge of Subject Matter (Pre-Test) as Covariate Singly

When Previous Knowledge of the Subject Matter is treated as covariate singly, the results of the covariance analysis revealed that all the four values of F for the Instructional-Learning Strategies on Achievement in Malayalam Language Skills are significant beyond 0.01 level. F-values for Achievement in Malayalam Language Skills Post-Test I (Total score) is 108.22, for Comprehension category 75.50, for Application category 46.64 and for Knowledge category 26.26.

When Group difference was studied using Scheffé Test of Post-hoc comparison, significant difference in the adjusted criterion means (Objective wise and Total score) between the Experimental and Control group was obtained. All F-values were found significant beyond 0.01 level (F-value for Achievement Total 69.87, Comprehension category 63.81, Application category 32.04 and Knowledge category 7.99). High means are associated with the Experimental group taught through Cooperative Learning Strategy.

5.2.2.2 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I with Non-Verbal Intelligence as Covariate Singly

Significant F-values are found for Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I at 0.01 level ($df = 1,95$) when Non-Verbal Intelligence of the Sample was treated as Covariate singly. F-values obtained for Achievement in Malayalam Language Skills are Total score 47.42; Comprehension category, 44.21; Application category, 20.57 and Knowledge category 12.25.

All the F-values obtained in the Post-hoc comparison were found significant beyond 0.01 level at 1,98 df. Therefore, significant difference between the Experimental group and Control group exists in the adjusted criterion means. F-value for Achievement in Malayalam Language Skills Total score 53.75, for Comprehension category, 50.71, for Application category 24.07 and for Knowledge category 14.13. In all comparisons the Experimental group which is taught through Cooperative Learning Strategy has advantage over the Control group taught through Conventional Method of Teaching as high means are seen associated with the Experimental group.

5.2.2.3 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I with Verbal Intelligence as Covariate Singly

Significant F-values were obtained for Instructional-Learning Strategies on Achievement in Malayalam Language Skills (Objective wise and Total score) at 0.01 level for 1,95 df. The F-values obtained are Achievement in Malayalam Language Skills Total score - 64.46; for Comprehension category - 59.25; Application category - 26.40 and Knowledge category - 15.66.

Significant difference between the Experimental and Control group at 0.01 level for 1,98 df was found in the comparison of adjusted criterion means. Value of F for Achievement in Malayalam Language Skills Total score 55.02, for Comprehension category 53.08, Application category 27.05 and Knowledge category 15.80. When Verbal Intelligence of the sample was controlled singly, the Experimental group has advantage over the Control group in all comparisons since high means are associated with the Experimental group.

5.2.2.4 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I with Previous Knowledge of Subject Matter (Pre-Test) and Non-Verbal Intelligence as Covariates in Combination

When Previous Knowledge of Subject Matter and Non-Verbal intelligence of the sample are used as covariates in combination, all F-values for Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) are found significant beyond 0.01 level - For Achievement in Malayalam Language Skills Total score $F = 87.16$, Comprehension category, 60.19, Application category 38.91 and for Knowledge category 19.39.

In the post-hoc comparison of adjusted criterion means (Objective wise and Total score) between the Experimental and Control group, significant difference at 0.01 level was obtained (df 1,98). Values of F, for Achievement in Malayalam Language Skills Total score - 64.00, Comprehension category - 57.73; Application category - 30.84 and Knowledge category - 17.88. Experimental group for which Cooperative Learning Strategy was used has again advantage over the Control group since high means are attached with it.

5.2.2.5 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I with Previous Knowledge of subject Matter (Pre-Test) and Verbal Intelligence as Covariates in Combination

Results of the covariance analysis revealed significant F-values for Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I at 0.01 level. The F-values for Achievement in Malayalam Language Skills Total score - 102.08, Comprehension category - 72.57, Application category - 42.54 and for Knowledge category - 18.85.

Statistically significant difference at 0.01 level for df, 1,98 was obtained for the comparison of adjusted criterion means between the Experimental and Control group (The obtained F-values for Achievement in Malayalam Language Skills Total score - 61.62, Comprehension category - 54.52, Application category - 27.04 and for Knowledge category - 16.34. High means are associated with the Experimental group showing advantage over the Control group.

5.2.2.6 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II with Previous Knowledge of Subject Matter (Pre Test) as Covariate Singly

Results of the Covariance analysis with Pre-Test as covariate singly revealed significant F-values ($P < 0.01$) for Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II. F-value for Achievement in Malayalam Language Skills Total Score - 89.88; for Comprehension category - 76.72; Application category - 32.29 and Knowledge category - 25.21.

In the post-hoc comparison of adjusted criterion means (Objective wise and Total score) between the Experimental and Control group, significant difference was found beyond 0.01 level for df = 1,98 the obtained values of F for Achievement in Malayalam Language Skills Total score - 74.42, Comprehension category - 71.57; Application category - 26.57 and for Knowledge category - 23.79.

High means of Experimental group which is taught through Cooperative Learning Strategy indicated its advantage over the Control group taught through Conventional Method of Teaching.

5.2.4.7 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II with Non-Verbal Intelligence as Covariate Singly

Results of 2x2 ANCOVA showed that all obtained F-values for the effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) were found significant beyond 0.01 level (df = 1,95). The following are the F-values obtained in the Covariance analysis. Achievement in Malayalam Language Skills Post-Test II Total score - 52.21; Comprehension category - 51.95; Application category - 16.11 and Knowledge category - 15.40.

Results of the Scheffé Test of Post-hoc comparisons revealed statistically significant difference in the adjusted criterion means (Objective wise and Total score) between the Experimental and Control group were found beyond 0.01 level (df = 1,98). In all comparisons, the Experimental group taught by Cooperative Learning with built-in-Peer Teaching was found advantageous over the Control group which is taught by the Conventional Method of Teaching. The F-values obtained are: for Achievement in Malayalam Language Skills Post-Test II Total score - 59.88; Comprehension category - 60.52; Application category - 18.66 and Knowledge category - 18.00.

5.2.2.8 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II with Verbal Intelligence as Covariate singly

When Verbal Intelligence is used as Covariate singly, significant F-values were obtained in 2x2 ANCOVA for the effect of Instructional-Learning Strategies on Post-Test II at 0.01 level (df 1,95). The obtained F-values for Achievement in Malayalam Language Skills Post-Test II Total score are - 69.12; for Comprehension category - 67.75; for Application category - 20.33 and for Knowledge category - 18.80.

Results of the post-hoc comparisons of adjusted criterion means (Objective wise and Total score) between the Experimental and Control group revealed significant F-values (F = 63.78 for Post-Test II Total score; 63.85 for Comprehension category; 5.07 for Application category and 19.75 for Knowledge category). High mean scores are found associated with the Experimental group indicating its advantage over the Control group which is taught through Conventional Method of Teaching.

5.2.2.9 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II with Previous knowledge of Subject Matter (Pre-Test) and Non-Verbal Intelligence as Covariates in combination

When Previous Knowledge of the Subject Matter and Non-Verbal Intelligence of the sample were used as Covariates jointly, significant F-values →

beyond 0.01 level ($df = 1,94$) was obtained for Instructional-Learning Strategies on Post-Test II (Objectivewise and Total score). Obtained F-values for Post Test II Total Score - 71.96; for Comprehension category - 62.26; for Application category - 24.62; and for Knowledge category - 19.26.

Significant F-values were obtained ($P < 0.01$) for the comparison of Experimental and Control group with regard to the adjusted criterion means (Objective wise and Total score). The obtained values of F are, for Achievement in Malayalam Language Skills Post-Test II Total score - 67.78; for Comprehension category - 66.33; for Application category - 23.14 and for Knowledge category - 21.16.

High mean scores are found associated with the Experimental group taught through Cooperative Learning Strategy, suggesting its advantage over the Control group taught through Conventional Method of Teaching in all comparisons.

5.2.2.10 Effect of Select Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test II with Previous Knowledge of Subject Matter (Pre-Test) and Verbal Intelligence as Covariates in Combination

In the covariance analysis with Pre-Test scores and Verbal Intelligence used as covariates in combination, significant F-values were obtained for Instructional-Learning Strategies on Post-Test II scores (Objective wise and Total) at 0.01 level ($df = 1,94$). The values of F obtained are 85.35 for Achievement in Malayalam Language Skills Post-Test II Total score; 74.97 for Comprehension category; 27.25 for Application category and 19.92 for Knowledge category.

Results of Scheffé Test of Post-hoc comparison revealed statistically significant difference in the adjusted criterion means (Objective wise and Total

score) between the Experimental and Control group ($P < 0.01$; $df = 1,98$). The F-values are 65.30 for Post Test II Total score; 64.93 for Comprehension category; 22.25 for Application category and 20.46 for Knowledge category.

In all comparisons, high mean scores are associated with the Experimental group taught through Cooperative Learning Strategy shows its advantage over the Control group taught through Conventional Method of Teaching.

5.2.3 MAIN EFFECT AND INTERACTION EFFECT OF SELECT INSTRUCTIONAL-LEARNING STRATEGIES AND SELECT COGNITIVE ENTRY BEHAVIOUR (INTELLIGENCE) ON ACHIEVEMENT IN MALAYALAM LANGUAGE SKILLS - POST-TEST I AND POST-TEST II

Main effect and interaction effect of Instructional-Learning Strategies and select Cognitive Entry Behaviour of standard VI pupils on Achievement in Malayalam Language Skills Post-Test I and Post-Test II are furnished in the following sub-sections.

5.2.3.1 Results of Two-way ANOVA of Achievement in Malayalam Language Skills Post-Test I By Instructional-Learning Strategies By Non-Verbal Intelligence

Results of Twelve 2x2 ANOVA employed to study the main effect and interaction effect of Instructional-Learning Strategies and Non-Verbal Intelligence are furnished in the following part.

5.2.3.1.a *Main Effect of Instructional-Learning Strategies on Post-Test I*

Significant main effect, well beyond 0.01 level was found for the Independent Variable Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) for the Total sample, Boys and Girls. The obtained F-values are as follows.

Dependent Variables	F-values		
	Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test I Total Score	49.73	19.11	68.31
Comprehension category	48.13	14.62	64.61
Application category	23.43	14.12	16.57
Knowledge category	14.16	9.08	9.87

$P < 0.01$

5.2.3.1.b Main Effect of Non-Verbal Intelligence on Post-Test I

Significant main effect of Non Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test I was found only in three out of twelve ANOVA. That is (i) Achievement in Malayalam Language Skills Total score for Total sample $F = 5.08$ (ii) Application category $F = 8.99$ and Achievement in Malayalam Language Skills Total score $F = 8.25$ for Girls.

5.2.3.1.c Interaction Effect of Instructional-Learning Strategies and Non-Verbal Intelligence on Post-Test I

In two out of twelve ANOVA, significant interaction effect of Instructional-Learning Strategies and Non-Verbal Intelligence was noticed on Achievement in Malayalam Language Skills Post-Test I Application category ($F = 7.174$) and Total score ($F = 5.94$) at 0.05 level for Girls in the sample.

5.2.3.1.d Comparison of Mean Achievement in Malayalam Language Skills Post-Test I Between Two groups Categorised Based on Instructional-Learning Strategies

Results of the comparison between two groups of the sample categorised based on Instructional-Learning Strategies (Cooperative Learning Strategy - CLS

and Conventional Method of Teaching - CMT) in mean Achievement in Malayalam Language Skills Post-Test I are presented in the following.

Significant difference in mean Achievement in Malayalam Language Skills (Objective wise and Total score) between CLS and CMT group was found in all comparisons for the Total Sample, Boys and Girls ($P < 0.01$). The obtained F-values are as follows.

Dependent Variables	Groups compared	F-Values		
		Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test I (Total Score)	CLS-CMT	67.34	22.71	106.69
Knowledge category	CLS-CMT	21.25	12.68	14.31
Comprehension category	CLS-CMT	63.57	34.95	94.86
Application category	CLS-CMT	32.33	15.46	39.14

$P < 0.01$.

In all comparisons the CLS group show advantage over the CMT group since high mean scores were associated with the CLS group.

5.2.3.1.e Comparison of Mean Achievement in Malayalam Language Skills Post-Test I Between Two groups Categorised Based on Non-Verbal Intelligence

When the sample categorised based on Non-Verbal Intelligence (Below-Average Non-Verbal Intelligence - BANI and Above-Average Non-Verbal Intelligence - AANI) were compared, the following results were obtained.

Significant difference in mean achievement between the BANI and AANI groups were obtained in three out of twelve ANOVA undertaken. They are as follows.

- (i) Achievement in Malayalam Language Skills Post-Test I (Total score) for Total Sample and Girls ($F = 48.49$ and 21.83).
- (ii) Achievement in Malayalam Language Skills Post-Test I Application category for Girls ($F = 26.92$).

In the three paired comparisons, the BANI group has advantage over the BANI group as high means are seen associated with the AANI group.

5.2.3.2 Results of Two-way ANOVA of Achievement in Malayalam Language Skills Post-Test II By Instructional-Learning Strategies By Non-Verbal Intelligence

Results of twelve, Two-way ANOVA employed to study the main effect and interaction effect of Instructional-Learning Strategies and Non-Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test II are as follows.

5.2.3.2.a Main Effect of Instructional-Learning Strategies on Post-Test II

Significant main effect well beyond 0.01 level was found for Instructional-Learning Strategies on Post-Test II (Objective wise and Total score) for Total Sample, Boys and Girls. The obtained F-values are:

Dependent Variables	F-values		
	Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test II Total Score	57.34	29.26	96.01
Comprehension category	17.58	15.61	17.84
Application category	57.32	21.85	85.76
Knowledge category	19.10	14.34	13.14

$P < 0.01$

5.2.3.2.b Main Effect of Non-Verbal Intelligence on Post-Test II

Significant main effect ($P < 0.05$) of Non-Verbal Intelligence on Post Test II was found to exist in four out of twelve ANOVA. They are:

- (i) Achievement in Malayalam Language Skills Post-Test II (Total score) for Total Sample ($F = 4.38$) and Girls ($F = 5.40$).
- (ii) Achievement in Malayalam Language Skills Post-Test II Application Category for Total Sample ($F = 4.26$) and Girls ($F = 6.61$).

5.2.3.2.c Interaction Effect of Instructional-Learning Strategies and Non-Verbal Intelligence on Post-Test II

Significant interaction effect ($P < 0.05$) was found only in two out of twelve ANOVA undertaken. They are Achievement in Malayalam Language Skills Post-Test II (Total score) $F = 4.29$ and Application category $F = 5.18$ for Girls in the sample.

5.2.3.2.d Comparison of Mean Achievement in Malayalam Language Skills Post-Test II Between Two groups Categorised Based on Instructional-Learning Strategies

Significant difference ($P < 0.01$) in mean Post-Test II scores between the two groups categorised based on Instructional-Learning Strategies (Cooperative Learning Strategy group - CLS and Conventional Method of Teaching group - CMT) was found in all four comparisons. The obtained F-values are:

Dependent Variables	Groups compared	F-Values		
		Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test II (Total Score)	CLS-CMT	75.70	34.60	140.65
Knowledge category	CLS-CMT	24.64	20.57	33.00
Comprehension category	CLS-CMT	72.75	25.50	116.71
Application category	CLS-CMT	28.19	16.61	26.78

$P < 0.01$.

In all the comparisons, high means are associated with the CLS group than the CMT group suggesting the advantage of CLS group over the CMT group in the mean Achievement in Malayalam Language Skills Post-Test II.

5.2.3.2.e Comparison of Mean Achievement in Malayalam Language Skills Post-Test II Between Two groups Categorised Based on Non-Verbal Intelligence

When two groups of the sample categorised on the basis of Non-Verbal Intelligence (Below Average Non-Verbal Intelligence - BANI and Above Average Non Verbal Intelligence - AANI) were compared, the following results were obtained.

Significant difference found beyond 0.01 level between the BANI and AANI groups of pupils in mean Achievement in Malayalam Language Skills Post-Test II (Total score) and Application category for Total Sample ($F = 22.76, 12.65$) and in Girls ($F = 49.97; 20.22$) respectively.

The AANI group of pupils have advantage over the BANI group due to high mean scores attached with the AANI group.

5.2.3.3 Results of Two-way ANOVA of Achievement in Malayalam Language Skills Post-Test I By Instructional-Learning Strategies By Verbal Intelligence

Results of twelve 2x2 ANOVA undertaken to study the main effect and interaction effect of Instructional-Learning Strategies and Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test I are presented here.

5.2.3.3.a Main Effect of Instructional-Learning Strategies on Post-Test I

Significant main effect of Instructional-Learning Strategies on Post-Test I was found well beyond 0.01 level in all ANOVA undertaken for the Total Sample, Boys and Girls. The obtained F-values are presented as follows.

Dependent Variables	F-values		
	Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test I Total Score	63.58	22.15	111.63
Knowledge category	18.003	10.69	13.10
Comprehension category	59.98	17.20	105.42
Application category	27.58	13.25	23.41

$P < 0.01$

5.2.3.3.b Main Effect of Verbal Intelligence on Post-Test I

Significant main effect of Verbal Intelligence on Post-Test I was found to exist in nine out of twelve ANOVA. They are

- (i) Total Sample: Achievement in Malayalam Language Skills Post-Test I Comprehension category (F = 25.36), Application category (F = 17.47) and Total score (F = 27.73).
- (ii) Boys: Achievement in Malayalam Language Skills Post-Test I Comprehension category (F = 16.93), Application Category (F = 10.38) and Total score (F = 16.57).
- (iii) Girls: Achievement in Malayalam Language Skills Post-Test I Comprehension category (F = 8.85), Application category (F = 4.36) and Total score (F = 11.26).

5.2.3.3.c Interaction Effect of Instructional-Learning Strategies and Verbal Intelligence on Post-Test I

Significant interaction effect ($P < 0.01$) was found in the sample Girls on Achievement in Malayalam Language Skills Post-Test I Comprehension category (F = 13.30), Application category (F = 4.67) and Total score (F = 17.12).

5.2.3.3.d Comparison of Mean Achievement in Malayalam Language Skills Post-Test I Between Two groups Categorised Based on Instructional-Learning Strategies

Results of the Comparison between the two groups based on Instructional-Learning Strategies (Cooperative Learning Strategy - CLS and Conventional Method of Teaching - CMT) in mean Achievement Scores (Post-Test I) are as follows.

Dependent Variables	Groups compared	F-Values		
		Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test I (Total Score)	CLS-CMT	21.46	22.37	34.50
Comprehension category	CLS-CMT	77.46	44.02	286.66
Application category	CLS-CMT	37.34	32.96	67.70
Total Score	CLS-CMT	82.38	54.57	307.31

$P < 0.01$.

In all the twelve paired comparison, the CLS group is found to be the advantageous group.

5.2.3.3.e Comparison of Mean Achievement in Malayalam Language Skills Post-Test I Between Two groups Categorised Based on Verbal Intelligence

Significant difference ($P < 0.01$) between the two groups of the sample categorised on the basis of Verbal Intelligence (Below-Average Verbal Intelligence - BAVI and Above-Average Verbal Intelligence - AAVI) in mean Achievement scores (Post-Test I) Comprehension category, Application category and Total score was found for the Total Sample, Boys and Girls. The obtained F-values are presented as follows:

Dependent Variables	Groups compared	F-Values		
		Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test I Comprehension category	BAVI-AAVI	42.85	26.94	30.85
Application category	BAVI-AAVI	30.93	15.03	11.19
Total Score	BANI-AAVI	46.49	24.18	36.08

$P < 0.01$.

The AAVI group have advantage over the BAVI group in all post-hoc comparisons.

5.2.3.4 Results of Two-way ANOVA of Achievement in Malayalam Language Skills Post-Test II By Instructional-Learning Strategies By Verbal Intelligence

Results of twelve ANOVA employed to study the main effect and interaction effect of Instructional-Learning Strategies and Verbal Intelligence on Achievement in Malayalam Language Skills Post-Test II are as follows.

5.2.3.4.a Main Effect of Instructional-Learning Strategies on Post-Test II

Significant main effect of Instructional-Learning Strategies well beyond 0.01 level was found in twelve ANOVA undertaken for the three samples (Total, Boys and Girls). The obtained F-values are in the following break-up.

Dependent Variables	F-values		
	Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test I Knowledge category	21.73	19.03	23.17
Comprehension category	69.18	26.42	112.68
Application category	23.16	13.79	21.51
Total Score	69.97	34.17	119.38

$P < 0.01$

5.2.3.4.b Main Effect of Verbal Intelligence on Post-Test II

Significant main effect ($P < 0.01$) of Verbal Intelligence on Post-Test II Comprehension category, Application category and Total score for Total Sample and Boys and only in Application category ($P < 0.05$) for Girls was found to exist. The obtained F-values are:

- (i) Achievement in Malayalam Language Skills Post-Test II Comprehension category ($F = 18.09, 14.58$), Application Category ($F = 10.69, 4.27$) and Total score ($F = 18.15, 9.96$) for Total Sample and Boys respectively.
- (ii) Achievement in Malayalam Language Skills Post-Test II Application category ($F = 4.88$) for Girls.

5.2.3.4.c Interaction Effect of Instructional-Learning Strategies and Verbal Intelligence on Post-Test II

Significant interaction effect of Instructional-Learning Strategies \times Verbal Intelligence ($P < 0.05$) on Post-Test II was found only in one out of twelve

ANOVA undertaken (Achievement in Malayalam Language Skills Post-Test II Comprehension category for Boys ($F = 5.58$).

5.2.3.4.d Comparison of Mean Achievement in Malayalam Language Skills Post-Test II Between Two groups Categorised Based on Instructional-Learning Strategies

Significant difference ($P < 0.01$) in mean Achievement Scores (Post-Test II) between two groups based on Instructional-Learning Strategies (Cooperative Learning Strategy - CLS and Conventional Method of Teaching - CMT) were found in Total Sample, Boys and Girls. The obtained F-values are the following.

Dependent Variables	Groups compared	F-Values		
		Total sample	Boys	Girls
Achievement in Malayalam Language Skills Post-Test II Knowledge category	CLS-CMT	24.33	35.02	56.14
Comprehension category	CLS-CMT	85.39	61.37	255.36
Application category	CLS-CMT	20.23	31.00	54.19
Total Score	CLS-CMT	116.95	76.47	277.10

$P < 0.01$.

In all the twelve-paired comparisons the CLS group shows advantage over the CMT group in mean Achievement in Malayalam Language Skills.

5.2.3.4.e *Comparison of Mean Achievement in Malayalam Language Skills Post-Test II Between Two groups Categorised Based on Verbal Intelligence*

Results of the comparison of mean Post-Test II scores between two groups based on Verbal Intelligence (Below Average Verbal Intelligence - BAVI and Above Average Verbal Intelligence - AAVI) revealed the following.

Significant difference ($P < 0.01$) in mean Achievement in Malayalam Language Skills Post-Test II (Comprehension category, Application category and Total score) was obtained for the Total Sample and Boys. In the sub sample Girls, significant difference was noticed ($P < 0.05$) only in Achievement in Malayalam Language Skills – Application category. The obtained F-values are as follows.

- (i) Achievement in Malayalam Language Skills Post-Test II Comprehension category ($F = 35.86; 18.66$), Application category ($F = 17.81; 7.40$) and Total score ($F = 35.27; 17.53$) for Total Sample and Boys respectively.
- (ii) Achievement in Malayalam Language Skills Post-Test II Application category ($F = 7.51$) for Girls.

The AAVI group of pupils are the advantageous group in all comparisons.

5.3 TENABILITY OF HYPOTHESES

The tenability of hypotheses framed for the present study was examined on the basis of the findings.

5.3.1. First hypothesis states that "*There will be significant difference in the mean Achievement in Malayalam Language Skills Post-Test I Scores (Objective wise and Total score) between Experimental group and Control group for the Total Sample, Boys and Girls*".

It was found that in all the twelve comparisons of the mean Achievement

in Malayalam Language Skills Post-Test I scores (Objective wise and Total score) between the Experimental group and Control group for the Total Sample, Boys and Girls significant difference beyond 0.01 level exist. Therefore, the first hypothesis is substantiated fully.

5.3.2. Second hypothesis states that *"There will be significant difference in the mean Achievement in Malayalam Language Skills Gain scores between Experimental group and Control group for the Total Sample, Boys and Girls"*.

Significant difference beyond 0.01 level in the mean Gain scores in Achievement in Malayalam Language Skills (Total score) between the Experimental and Control group was noticed for the Total Sample, Boys and Girls. Hence, the second hypothesis also was fully substantiated.

5.2.3. Hypothesis 3 states that *"There will be significant difference in the mean Achievement in Malayalam Language Skills retention scores Post-Test II (Objective wise and Total score) between Experimental group and Control group for the Total Sample, Boys and Girls"*.

All the twelve comparisons of Achievement in Malayalam Language Skills Post-Test II between the Experimental and Control group, significant mean difference beyond 0.01 level were noticed. The third hypothesis also was therefore, substantiated fully.

5.3.4. Fourth hypothesis states that *"Pupils taught through Cooperative Learning with built-in-Peer Teaching Strategy will have high mean Achievement in Malayalam Language Skills (Post-Test I and Post-Test II) than that of pupils taught through Conventional Method of Teaching"*.

To test this hypothesis, 40 ANCOVA followed by post-hoc comparisons were done for the Total Sample. Significant difference in Achievement in Malayalam Language Skills Post-Test I and Post-Test II (Objective wise and Total

score) between the Experimental group and Control group was found in all the 40 ANCOVA and its post-hoc comparisons. The Experimental group was taught through Cooperative Learning with built-in-Peer Teaching strategy and the Control group was taught through Conventional Method of Teaching. In all comparisons, significant difference in favour of the Experimental group taught through Cooperative Learning Strategy was noticed. Hence, this hypothesis was fully substantiated.

5.3.5. The fifth hypothesis states that *"There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of Pupils of Standard VI (Total Sample, Boys and Girls)"*.

Significant main effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) was found for the Total Sample, Boys and Girls. Non-Verbal Intelligence has significant main effect for Total Sample (Achievement Total score) and in Girls (Application category and Achievement Total score). Interaction effect of Instructional-Learning Strategies and Non-Verbal Intelligence was found significant only for Girls (Application category and Achievement Total score). In Total Sample and Boys, no Interaction effect was noticed. This hypothesis was substantiated partially.

5.3.6. Hypothesis 6 states that *"There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on Achievement in Malayalam Language Skills (Post-Test I) of Pupils of Standard VI (Total Sample, Boys and Girls)"*

Instructional-Learning Strategies were found to have significant main

effect on Achievement in Malayalam Language Skills Post-Test I (Objective wise and Total score) in twelve ANOVA undertaken for the Total Sample, Boys and Girls.

Significant main effect of Verbal Intelligence was found on Achievement Total score, Comprehension category and Application category only for the Total Sample, Boys and Girls.

Interaction effect of Instructional-Learning Strategies X Verbal Intelligence on Achievement was found only for Girls (Application category and Achievement Total score).

Hence, this hypothesis is substantiated only partially.

5.3.7. Seventh hypothesis states that *"There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Non-Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of Pupils of Standard VI (Total Sample, Boys and Girls)"*

Significant main effect of Instructional-Learning strategies on Achievement in Malayalam Language Skills Post-Test II (Objective wise and Total score) was obtained for the Total Sample, Boys and Girls.

For Total Sample and Girls significant main effect of Non-Verbal Intelligence on Post-Test II (Total score and Application category) was found.

Interaction effect of Instructional-Learning Strategies x Non-Verbal Intelligence on Post-Test II (Total score and Application category) was found significant only for Girls.

Therefore, this hypothesis is substantiated partially.

5.3.8. The Eighth hypothesis states that *"There will be significant Main effect and Interaction effect of Instructional-Learning Strategies (Cooperative Learning with built-in-Peer Teaching and Conventional Method) and Verbal Intelligence on retention in Achievement in Malayalam Language Skills (Post-Test II) of pupils of standard VI (Total Sample, Boys and Girls)"*

Significant main effect of Instructional-Learning Strategies on Achievement in Malayalam Language Skills was found to exist (Objective wise and Total score) for the Total Sample, Boys and Girls.

Verbal Intelligence was found to have significant main effect on Post-Test II (Total score, Comprehension and Application category) for the Total Sample and Boys, in the Application category only for Girls.

Significant interaction effect was obtained for Boys on Application category only.

Hence this hypothesis is substantiated to a great extent.

5.4 SUGGESTIONS FOR IMPROVING EDUCATIONAL PRACTICE

Based on the findings of the present study, the following suggestions are made by the investigator which may improve the existing practice of teaching Malayalam Language in the primary classes.

Findings of the study implies that the specific Instructional-Learning Strategy adopted by the teacher and select Cognitive Entry Behaviours of the pupils along with a host of others are influencing the outcome of Language learning. Result of the present study will help to formulate some theoretical guidelines so as to modify the present practice of teaching Languages especially in primary classes.

(i) The major outcome of the present investigation highlights the effectiveness of Cooperative Learning Strategy with built-in-Peer teaching over the Objective-based method adopted in Language classes, in teaching select units of Malayalam syllabus. Pupils taught through various Cooperative Learning procedures have high Achievement in Malayalam and better retention of what they have learned than their counterparts taught through the Conventional Method of Teaching. In-depth studies conducted by renowned researchers in this area have reported that this is due to the limitations of a traditional system of instruction. One of the serious limitations of large group instruction namely, lack of catering to individual differences in abilities and the undue emphasis on individual pupil competitions prevailing in school education system now, can be minimised if Cooperative Learning models are practiced. Though research evidences are abundant to show that Cooperation is one of the inherent human quality and human beings have an internal urge to be cooperative, suitable Instructional Strategies are seldom practiced in our conventional classes. The friendliness, mutual trust and consciousness of a common goal to achieve and the cohesiveness among members yielded by a Cooperative Learning group will make the learning environment more joyful and rewarding.

In the present days of competitive life with its incredible and inevitable precipitations causing 'life stress' (as enunciated by Toefler in 1985) may be the result of school experiences, wherein pupils have been forced to achieve individualistic goals in a sheer competitive way. Cooperative Learning will promote the love of learning in children, which is so strong when they are small. By de-emphasising and discouraging the children to work for individual goals, the conventional educational practice make the love of learning very weak.

(ii) The procedure of Cooperative Learning Strategies in the classrooms require changes in the traditional classroom environment. Their focus is on

improving learning facilities, promote healthy relationships between pupils of different socio-cultural and educational background, promoting social skills and self-esteem of pupils and their teachers and providing opportunities for Peer Teaching by both high and low-achievers in the traditional classroom. Such practices will increase their self responsibilities in learning.

(iii) The key element in Cooperative Learning is to hold the students accountable for their learning and give them a sense of power and ownership in the ultimate outcome of their learning. The 'Learning Together' model as adopted in the classroom by the investigator helped the small groups consisting of four to six learners to fix their group target for the materials to be learned. The learning tasks provided to the small groups increased the responsibility of the individual member to work for the group goal through shared learning. Slow learners were encouraged by their peers tutoring them. Teachers will intervene the group work only when they need guidance, direct teaching or to consolidate each groups' work product. The minimum involvement of the teacher promotes social skills and efficiency among students.

(iv) Affective and psychomotor outcomes of learning which in our educational system adopted as important Instructional-objectives, but seldom practiced in our classrooms can, it is hoped, be promoted through Cooperative Learning and Peer Teaching. The more conducive social environment in the classrooms and the more demand for interaction among group members and between groups, the value of sharing etc. will help the pupils to achieve the expected affective outcomes effectively and efficiently.

(v) For adopting Cooperative Learning and Peer Teaching, sophisticated instructional-learning aids, electronic gadgets and the like are not required. Any resourceful and committed teacher can adopt these strategies in the conventional classrooms. But, depending on the nature of the curriculum material the teacher

can supplement the large group Instruction using Cooperative Learning Strategies with built-in-Peer teaching. A slight dislocation in the routine timetable of the school and change in the classroom organisation (such as free movement of the pupils, seating arrangement, group arrangement, execution of the learning task etc.) are inevitable in this Instructional-Learning strategy. Wherever the curricular materials are amenable, this method can be practiced in our schools successfully, especially for the mastery of basic essential language skills.

The investigator got herself acquainted with Cooperative Learning and Peer Teaching through research literature, especially the materials related with the theory and classroom procedures from the developed countries. School teachers can also familiarise themselves with small group instructional strategies from relevant literature.

(vi) In the existing organisational set up of education and classroom practices, it may be difficult to implement Cooperative Learning procedures and Peer Tutoring as an alternative. Depending on the nature of the curricular materials, the existing whole class Instruction can be supplemented by Cooperative Learning with built-in-Peer Teaching models.

Effectiveness of any instructional strategies depend upon the teacher skill in setting instructional goals and implementing the appropriate goal structures. Of all the components of instruction, it is the teachers' skill in implementing the appropriate goal structures that are most important but has been most ignored in Teacher Education programmes. Hence, it is suggested that training for required skills in setting Cooperative goal structures and its implementation in the class may be made an integral part of the present day Teacher Training programmes. Appropriate staff development programmes determine the success of

Cooperative Learning procedures in the school set up so that affective outcomes of instruction can effectively achieve.

(vii) Teachers may judiciously form Cooperative Learning groups with students of different abilities, ethnic backgrounds, learning style and personal interests. Such groups will work best as productive teams.

Cooperative Learning provides High- and Low-achievers many opportunities for building leadership skills, conflict resolution, motivation and a chance to learn and teach each other. This Instructional Strategy is *learning how to work with one another*. Teachers and school administrators may keep these aspects in their mind when they implement Cooperative Learning/Peer Tutoring programmes. Within the rubric of allotted time in schools, teachers can skillfully plan and implement small group instruction using Cooperative models.

(viii) Teachers may convince themselves that their roles have been changing from the place of an unquestionable knowledge giver to the enlightened position of a friendly facilitator. In addition, teachers may be experienced the practicability and easiness of Cooperative Learning Strategies.

5.5 SUGGESTIONS FOR FURTHER RESEARCH

Findings of the present study helped the investigator to suggest the following areas for future research in this area.

- 5.5.1. Effectiveness of Cooperative Learning can be investigated on Secondary, Higher Secondary and College student population.
- 5.5.2. Other Cooperative Learning models such as Jigsaw method, Student Teams Achievement Division (STAD), Team Games Tournaments, can be tried out in different population.

- 5.5.3. Interaction effect of Instructional-Learning Strategies and Personality factors like Achievement Motivation, Self-Concept and Extraversion-Intraversion etc. can be attempted.
- 5.5.4. Relative effectiveness of Cooperative Learning strategy can be investigated among the rural/urban; and tribal/non tribal socially advantaged/socially disadvantaged population.
- 5.5.5. Social skills such as Leadership qualities, Social adjustment Sociability, and Age relevant affective outcomes of the Cooperative Learning group and Non-Cooperative Learning group can be compared.
- 5.5.6. Causal relationship of Cooperative Learning Strategies with Environmental variables and Learning Outcomes can be investigated.
- 5.5.7. Relative effectiveness of Cooperative Learning over the different Models of Teaching such as Advanced organiser model, Jurisprudential model, Concept attainment model etc. can be studied.
- 5.5.8. Effect of Instructional-Learning Strategies and Cognitive Entry Behaviours can be investigated on other Languages and Science subjects.
- 5.5.9. Interaction of student specific variables like Approaches to Studying, Learning Style, Student Involvement with Cooperative Learning can be explored.
- 5.5.10. The present study can be replicated with more sophisticated experimental designs.

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APPENDICES

Appendix I

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION

LESSON PLAN FOR COOPERATIVE LEARNING STRATEGY - PROSE

Standard VI

Dr.Kamala S. Pillai

Bindhu. C.M.

PHASE 1

(അധ്യാപിക കുട്ടികളുമായി അനുപചാരിക സംഭാഷണത്തിൽ ഏർപ്പെടുന്നു. യാത്ര പോകുന്നതിനെക്കുറിച്ചും യാത്രചെയ്യുമ്പോൾ ഉണ്ടാകുന്ന ഗതാഗതകുരുക്കിനെക്കുറിച്ചും സംസാരിക്കുന്നു. ഗതാഗതതടസ്സം നേരിട്ടാൽ ഉണ്ടാകുന്ന ബുദ്ധിമുട്ടുകളെക്കുറിച്ച് കുട്ടികളോട് ചോദിക്കുന്നു. കുട്ടികൾ ഉത്തരം പറയുന്നു. ഗതാഗത തടസ്സം അനുഭവപ്പെടാതിരിക്കാൻ ചെയ്യുന്ന കാര്യങ്ങളെക്കുറിച്ചും സുരക്ഷിതരായി യാത്രചെയ്യാൻ ചെയ്യേണ്ട കാര്യങ്ങളെക്കുറിച്ചും പഠിക്കാം എന്നു പറഞ്ഞുകൊണ്ട് സശ്രദ്ധം സഞ്ചരിക്കു എന്ന പാഠഭാഗം എടുക്കാൻ ആവശ്യപ്പെടുന്നു).

(സശ്രദ്ധം സഞ്ചരിക്കു എന്ന പാഠത്തിനെ ആറുഭാഗങ്ങളായി തിരിച്ചിരിക്കുന്നു. ഓരോ ഗ്രൂപ്പിനോടും ആ പാഠത്തിലെ ആദ്യഭാഗം മൗനമായി വായിക്കാൻ പറയുന്നു).

കുട്ടികൾ വായിച്ചു കഴിഞ്ഞതിനുശേഷം അധ്യാപിക ഉച്ചാരണ ശുദ്ധിയോടും വ്യക്തതയോടും കൂടി പാഠഭാഗം വായിച്ചു കേൾപ്പിക്കുന്നു.

PHASE 2

ആകെയുള്ള കുട്ടികളെ 4 ഗ്രൂപ്പായിതിരിക്കുന്നു. ഇതിനായി കുട്ടികളെകൊണ്ട് 1,2,3,4 വരെ എണ്ണം എടുപ്പിക്കുന്നു. എണ്ണം എടുത്തതിനുശേഷം 1 എന്ന നമ്പരുള്ളവരെയെല്ലാം ഒരു ഗ്രൂപ്പാവാാനും 2 മറ്റൊരു ഗ്രൂപ്പാവാാനും 3 വേറൊരു ഗ്രൂപ്പാവാാനും, 4 നാലാമത്തെ ഗ്രൂപ്പാവാാനും പറയുന്നു. ക്രമമനുസരിച്ച് ഓരോ ഗ്രൂപ്പിനും ആശാൻ, ഉള്ളൂർ, വള്ളത്തോൾ, ചങ്ങമ്പുഴ - ഗ്രൂപ്പുകളെന്ന് പേരുകൊടുക്കുന്നു. ഓരോ ഗ്രൂപ്പിൽ നിന്നും ഓരോ ഗ്രൂപ്പ് ലീഡറെയും കണ്ടെത്തുന്നു).

ഓരോ ഗ്രൂപ്പിലെയും രണ്ടുപേരെകൊണ്ടു വീതം പാഠഭാഗം വായിപ്പിക്കുന്നു. അധ്യാപിക പാഠഭാഗം ഒന്നുകൂടി വായിച്ച് അവർ വരുത്തിയ തെറ്റുകൾ പറഞ്ഞുകൊടുക്കുന്നു.

PHASE 3

(വായിച്ചപാഠത്തിന്റെ ആശയം കിട്ടത്തക്കവിധത്തിൽ അതിൽനിന്ന് ചോദ്യങ്ങൾ ഉണ്ടാക്കുന്ന വിധം അധ്യാപിക പറയുന്നു. ഉദാഹരണമായി ആദ്യഭാഗത്ത് പറഞ്ഞിരിക്കുന്ന കഥാപാത്രങ്ങളുടെ പേരുകൾ ഏതൊക്കെയാണ്? ഉത്തരം - രമടീച്ചർ, സാമുവൽസാർ, ശുഭ, റ്റല എന്നിവരാണ്. ഇതുപോലെ തുടർന്നുള്ള ഭാഗം വായിച്ച്, ഓരോ ഗ്രൂപ്പിലെയും അംഗങ്ങൾ പരസ്പരം ചർച്ചചെയ്ത് ചോദ്യങ്ങൾ ഉണ്ടാക്കി അവരവരുടെ പുസ്തകങ്ങളിൽ എഴുതുക).

അല്പസമയത്തിനുശേഷം അധ്യാപിക ഓരോ ഗ്രൂപ്പിനെകൊണ്ടും അവരവർ എഴുതിയ ചോദ്യങ്ങൾ വായിപ്പിക്കുന്നു.

- 1. വൺവേ എന്നാലെന്ത്?
- 2. ട്രാഫിക് ഐലൻഡ് എന്നാലെന്ത്?
- 3. പട്ടണങ്ങളിൽ വാഹനങ്ങളുടെ തിരക്കുകുറക്കാൻ ഏർപ്പെടുത്തിയിരിക്കുന്ന ക്രമീകരണങ്ങൾ എന്തെല്ലാം?

അധ്യാപിക : ഇനി നിങ്ങൾ എഴുതിയ ചോദ്യങ്ങൾക്കെല്ലാം പുസ്തകം നോക്കി ഉത്തരം കണ്ടുപിടിച്ചെഴുതുക.

(ഓരോ ഗ്രൂപ്പും എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു). അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പും എഴുതിയ ഉത്തരങ്ങൾ വായിപ്പിക്കുന്നു.

- 1. റോഡിന്റെ ഒരു വശത്തേക്കു മാത്രമേ വണ്ടികൾ ഓടിക്കാൻ പാടുള്ളൂ എന്നു നിർദ്ദേശിച്ചിട്ടുള്ള റോഡിന് വൺവേ എന്നു പറയുന്നു.
- 2. റോഡുകളിലെ വാഹനനിയന്ത്രണത്തിന് എടുത്തട്ടുള്ള ക്രമീകരണമാണ് ട്രാഫിക് ഐലൻഡുകൾ. ഇത്തരം ഐലന്റ് പ്രദക്ഷിണം വച്ചു മാത്രമേ റോഡിന്റെ മറുവശത്തേക്ക് വാഹനങ്ങൾ കടക്കുകയുള്ളൂ.

3. വൺവേ, ട്രാഫിക് ഐലൻഡ്

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തു നിന്നു പുതുതായി കേൾക്കുന്ന നിങ്ങൾക്ക് അർത്ഥമറിയാത്ത പദങ്ങൾ ഓരോരുത്തരും എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടും അവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ അർത്ഥം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ ആവശ്യപ്പെടുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്നും വിപരീതം എഴുതാൻ കഴിയുന്ന പദങ്ങൾ എഴുതുക

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടും അവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ വിപരീതം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ ആവശ്യപ്പെടുന്നു. അറിയാത്ത പദങ്ങളുടെ വിപരീത പദങ്ങൾ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്നും പര്യാപ്തപദങ്ങൾ എഴുതാനാവുന്ന പദങ്ങൾ ഓരോരുത്തരും കണ്ടുപിടിച്ചെഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടും അവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ പര്യാപ്തപദങ്ങൾ അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ ആവശ്യപ്പെടുന്നു. അറിയാത്ത പദങ്ങളുടെ പര്യാപ്തപദങ്ങൾ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് ഞാൻ ഒരു വാക്ക് പറയും. ആ വാക്കുപയോഗിച്ച് എല്ലാ ഗ്രൂപ്പിലെയും അംഗങ്ങൾ പരസ്പരം ചർച്ചചെയ്ത് ഓരോ വാക്യം ഉണ്ടാക്കണം.

(പ്രദക്ഷിണം വയ്ക്കുക).

(കുട്ടികൾ ചർച്ചചെയ്ത വാക്യത്തിൽ പ്രയോഗിക്കുന്നു).

(ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടും വാക്യങ്ങൾ വായിപ്പിക്കുന്നു. അധ്യാപിക അത് BBയിൽ എഴുതുന്നു. ഏറ്റവും നല്ല വാക്യം ഉണ്ടാക്കിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു).

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നന്നായി ചെയ്തതിന് എല്ലാ ഗ്രൂപ്പുകളെയും അഭിനന്ദിക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ. ഇനി ആ പാഠഭാഗത്തു പറയുന്ന കാര്യങ്ങൾ എന്തൊക്കെയാണെന്ന് സ്വന്തം വാക്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം ചർച്ച ചെയ്ത് ശരിയാക്കി എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

(അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികളോട്)

'ആശാൻ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ

('ഉള്ളൂർ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിക്കുക

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('വള്ളത്തോൾ' ഗ്രൂപ്പിലെ കുട്ടികളോട്)

'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('വള്ളത്തോൾ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു.)

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിക്കുക

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

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അധ്യാപിക : 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പിലെ കുട്ടികളോട് വള്ളത്തോൾ ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു.)

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിക്കുക.

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : 'ആശാൻ' ഗ്രൂപ്പിലെ കുട്ടികളോട് 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

(ആശാൻ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ആശാൻ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

(ഓരോ ഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ചു കേൾക്കുന്നു. ഏറ്റവും നന്നായി ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാ ഗ്രൂപ്പിനെയും അഭിനന്ദിക്കുന്നു)

II

PHASE 1

(സശ്രദ്ധം സഞ്ചരിക്കു എന്ന പാഠത്തിലെ രണ്ടാമത്തെ ഭാഗം മൗനമായി വായിക്കാൻ പറയുന്നു).

കുട്ടികൾ വായിച്ചുകഴിഞ്ഞ് ശേഷം അധ്യാപിക ഉച്ചാരണശുദ്ധിയോടും വ്യക്തതയോടും കൂടി പാഠഭാഗം വായിച്ചു കേൾപ്പിക്കുന്നു.

PHASE 2

ഓരോ ഗ്രൂപ്പിലേയും രണ്ടുപേരെ കൊണ്ടു വീതം പാഠഭാഗം വായിപ്പിക്കുന്നു. അധ്യാപിക പാഠഭാഗം ഒന്നുകൂടി വായിച്ച് അവർ വരുത്തിയ തെറ്റുകൾ പറഞ്ഞു കൊടുക്കുന്നു.

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PHASE 3

വായിച്ച പാഠഭാഗത്തിന്റെ ആശയം കിട്ടത്തക്കവിധം അതിൽ നിന്ന് ചോദ്യങ്ങളുണ്ടാക്കാൻ പറയുന്നു.

അൽപ സമയത്തിനുശേഷം അധ്യാപിക ഓരോ ഗ്രൂപ്പിനെയും അവരവരെയുള്ള ചോദ്യങ്ങൾ വായിപ്പിക്കുന്നു.

- (1) പോലീസുകാരൻ എവിടെയാണ് നിൽക്കുന്നത്?
- (2) പോലീസുകാരുടെ ചുമതല എന്തൊക്കെയാണ്?
- (3) പോലീസുകാരന്റെ കൈയിലുള്ള ബോർഡിൽ എന്തൊന്നെഴുതിയിരിക്കുന്നത്?
- (4) എന്തിനുള്ള അടയാളമായിട്ടാണ് സ്റ്റോപ്പ് കാണിക്കുന്നത്?

അധ്യാപിക : ഇനി നിങ്ങൾ എഴുതിയ ചോദ്യങ്ങൾക്കെല്ലാം പൂർണ്ണതകം നോക്കി ഉത്തരം കണ്ടു പിടിച്ചെഴുതുക.

(ഓരോ ഗ്രൂപ്പും എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പും എഴുതിയ ഉത്തരങ്ങൾ വായിപ്പിക്കുന്നു.

(1) നാൽക്കവലയിൽ ഉയർന്ന സ്ഥലത്ത് ഒരു വലിയ കൂടയ്ക്കുകീഴിലാണ് പോലീസുകാരൻ നിൽക്കുന്നത്.

(2) ക്രമസമാധാനം പോല വാഹനഗതാഗതം നിയന്ത്രണവും പോലീസുകാരന്റെ ചുമതലയാണ്.

(3) സ്റ്റോപ്പ്

(4) സ്റ്റോപ്പ് എന്ന ബോർഡു കാണിച്ചാൽ വാഹനം നിർത്തണം. നാൽക്കവലകളിൽ വാഹനം പല ഭാഗത്തേക്കും തിരിഞ്ഞുപോകും. അവയെ ശ്രദ്ധയോടെ നിയന്ത്രിച്ച്, ഒരു ഭാഗത്തേക്കു പോകുന്നവയെ കടത്തിവിടും. അതേ സമയം എതിർഭാഗത്തുള്ളവയെ തടഞ്ഞുനിർത്തും. അങ്ങനെ നിർത്താനുള്ള അടയാളമായിട്ടാണ് സ്റ്റോപ്പ് കാണിക്കുന്നത്.

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തു നിന്നും പുതിയതായി കേൾക്കുന്ന നിങ്ങൾക്ക് അർത്ഥമറി

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യാത്ത പദങ്ങൾ ഓരോരുത്തരും എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറൈക്കൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ അർത്ഥം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്നും വിപരീതം എഴുതാൻ കഴിയുന്ന പദങ്ങൾ എഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറൈക്കൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ വിപരീതം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് പര്യായപദങ്ങൾ എഴുതാൻ കഴിയുന്ന പദങ്ങൾ ഓരോരുത്തരും കണ്ടുപിടിച്ചെഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറൈക്കൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ പര്യായം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് ഞാൻ ഒരു വാക്ക് പറയും. ആ വാക്കുപയോഗിച്ച് എല്ലാ ഗ്രൂപ്പിലെയും അംഗങ്ങൾ പരസ്പരം ചർച്ച ചെയ്ത് ഓരോ വാക്യം ഉണ്ടാക്കണം. (ചുമതല)

(കുട്ടികൾ ചർച്ച ചെയ്ത് വാക്യത്തിൽ പ്രയോഗിക്കുന്നു.)

(ഓരോ ഗ്രൂപ്പ് ലീഡറെക്കൊണ്ടും വാക്യങ്ങൾ വായിപ്പിക്കുന്നു.)

അധ്യാപിക അത് BB യിൽ എഴുതുന്നു. ഏറ്റവും നല്ല വാക്യം ഉണ്ടാക്കിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി ചെയ്തതിന് എല്ലാ ഗ്രൂപ്പുകളേയും അഭിനന്ദിക്കുന്നു.)

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ? ഇനി ആ പാഠഭാഗത്ത് പറയുന്ന കാര്യങ്ങൾ എന്തൊക്കെയാണെന്ന് സ്വന്തം വാക്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം ചർച്ച ചെയ്ത് ശരിയാക്കി എഴുതുക.)

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു.

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ആശാൻ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ഉള്ളൂർ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു.)

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിക്കുക.

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('വള്ളത്തോൾ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

(വള്ളത്തോൾ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിക്കുക.

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ചങ്ങമ്പുഴ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : ചങ്ങമ്പുഴ ഗ്രൂപ്പ് വായിക്കുക.

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ: ('ആശാൻ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ? *അദ്ധ്യക്ഷൻ*

('ആശാൻ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

(ഓരോ ഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ചുകേൾക്കുന്നു. ഏറ്റവും നന്നായി ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാവരെയും അനുമോദിക്കുന്നു).

III

PHASE 1

(സശ്രദ്ധം സഞ്ചരിക്കു എന്ന പാഠത്തിലെ മൂന്നാമത്തെ ഭാഗം മൗനമായി വായിക്കാൻ പറയുന്നു)

കുട്ടികൾ വായിച്ചുകഴിഞ്ഞ ശേഷം അധ്യാപിക ഉച്ചാരണശുദ്ധിയോടും വ്യക്തതയോടും കൂടി പാഠഭാഗം വായിച്ചു കേൾപ്പിക്കുന്നു.

PHASE 2

ഓരോ ഗ്രൂപ്പിലേയും രണ്ടുപേരെകൊണ്ടുവീതം പാഠഭാഗം വായിപ്പിക്കുന്നു. അധ്യാപിക പാഠഭാഗം ഒന്നുകൂടി വായിച്ച് അവർ വരുത്തിയ തെറ്റുകൾ പറഞ്ഞുകൊടുക്കുന്നു.

PHASE 3

വായിച്ച പാഠഭാഗത്തിന്റെ ആശയം കിട്ടത്തക്കവിധം അതിൽ നിന്ന് ചോദ്യങ്ങളുണ്ടാക്കാൻ പറയുന്നു.

(അല്പസമയത്തിനുശേഷം അധ്യാപിക ഓരോ ഗ്രൂപ്പിനെകൊണ്ടും അവരെഴുതിയ ചോദ്യങ്ങൾ വായിപ്പിക്കുന്നു).

1. ചില ഭാഗങ്ങളിൽ വാഹനഗതാഗതം നിയന്ത്രിക്കുന്നത് എന്താണ്?
2. ചെമ്മന്ന വിളക്ക് പ്രകാശിപ്പിക്കുന്നതെന്തിന്?
3. മഞ്ഞവെളിച്ചം എന്തിനുള്ള സൂചനയാണ്?
4. പച്ചവെളിച്ചം കണ്ടാൽ വാഹനങ്ങൾ എന്തുചെയ്യണം?
5. വണ്ടികൾ നിർത്തിയിടേണ്ട സ്ഥലത്ത് എന്ത് എഴുതിയിട്ടുണ്ടാകും?

അധ്യാപിക : ഇനി നിങ്ങൾ എഴുതിയ ചോദ്യങ്ങൾക്കെല്ലാം പുസ്തകം നോക്കി ഉത്തരം കണ്ടുപിടിച്ചെഴുതുക.

(ഓരോ ഗ്രൂപ്പും എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പും എഴുതിയ ഉത്തരങ്ങൾ വായിപ്പിക്കുന്നു).

1. സ്വയം പ്രവർത്തിക്കുന്ന വിളക്കുകൾ.
2. വാഹനങ്ങൾ പോകരുത് എന്നു കാണിക്കാൻ
3. വാഹനങ്ങൾ പുറപ്പെടാൻ തയ്യാറാകാനുള്ള സൂചനയാണ്.
4. പച്ചവെളിച്ചം കണ്ടാൽ വാഹനങ്ങൾ മുന്നോട്ടു പോകും
5. പാർക്കിങ്ങ്.

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്നും പുതുതായി കേൾക്കുന്ന നിങ്ങൾക്ക് അർത്ഥം അറിയാത്ത പദങ്ങൾ ഓരോരുത്തരും എഴുതുക.

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(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പു ലീഡറുകൊണ്ടും അവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ അർത്ഥം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞു കൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്നും വിപരീതം എഴുതാൻ കഴിയുന്ന പദങ്ങൾ എഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറുകൊണ്ടും അവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ വിപരീതം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് പര്യായ പദങ്ങൾ എഴുതാൻ കഴിയുന്ന പദങ്ങൾ ഓരോരുത്തരും കണ്ടുപിടിച്ചെഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറുകൊണ്ടും അവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ പര്യായം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞു കൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ. ഇനി ആ പാഠഭാഗത്തു പറയുന്ന കാര്യങ്ങൾ എന്തൊക്കെയാണെന്ന് സ്വന്തം വാക്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം ചർച്ച ചെയ്ത് ശരിയാക്കി എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

(അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ആശാൻ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

(ഉള്ളൂർ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിക്കുക

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പിലെ കുട്ടികളോട് ഉള്ളൂർ ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('വള്ളത്തോൾ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിക്കുക

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ചങ്ങമ്പുഴ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിക്കുക.

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

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അധ്യാപിക : ('ആശാൻ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ആശാൻ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

(ഓരോ ഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ച് കേൾക്കുന്നു. ഏറ്റവും നന്നായി ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാ ഗ്രൂപ്പിനേയും അഭിനന്ദിക്കുന്നു).

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PHASE 1

(സശ്രദ്ധം സഞ്ചരിക്കൂ എന്ന പാഠഭാഗത്തിലെ 4-ാമത്തെ ഭാഗം മൗനമായി വായിക്കാൻ പറയുന്നു).

കുട്ടികൾ വായിച്ചു കഴിഞ്ഞതിനുശേഷം അധ്യാപിക ഉച്ചാരണശുദ്ധിയേടും വ്യക്തതയോടും കൂടി പാഠഭാഗം വായിച്ചു കേൾപ്പിക്കുന്നു.

PHASE 2

ഓരോ ഗ്രൂപ്പിലേയും രണ്ടുപേരെ കൊണ്ടു വീതം പാഠഭാഗം വായിപ്പിക്കുന്നു. അധ്യാപിക പാഠഭാഗം ഒന്നുകൂടി വായിച്ച് അവർ വരുത്തിയ തെറ്റുകൾ പറഞ്ഞു കൊടുക്കുന്നു.

PHASE 3

വായിച്ച പാഠഭാഗത്തിന്റെ ആശയം കിട്ടത്തക്കവിധം അതിൽനിന്ന് ചോദ്യങ്ങളുണ്ടാക്കാൻ പറയുന്നു.

അല്പസമയത്തിനുശേഷം അധ്യാപിക ഓരോ ഗ്രൂപ്പിനെകൊണ്ടും അവരവരെയു തിയ ചോദ്യങ്ങൾ വായിപ്പിക്കുന്നു.

1. നടപ്പാതകൾ ആരെ ഉദ്ദേശിച്ചു നിർമ്മിച്ചിട്ടുള്ളതാണ്?
2. സീബ്രാ വരകൾ എന്നാലെന്ത്?

3. ട്രാഫിക് പോലീസുകാരൻ എന്ത് സൗകര്യമാണുണ്ടാക്കിക്കൊടുക്കുന്നത്?

4. റോഡു മുറിച്ചു കടക്കുമ്പോൾ ശ്രദ്ധിക്കേണ്ട കാര്യങ്ങൾ എന്തെല്ലാം?

അധ്യാപിക : ഇനി നിങ്ങൾ എഴുതിയ ചോദ്യങ്ങൾക്കെല്ലാം പൂസ്തകം നോക്കി ഉത്തരം കണ്ടുപിടിച്ചെഴുതുക.

(ഓരോ ഗ്രൂപ്പും എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പും എഴുതിയ ഉത്തരങ്ങൾ വായിപ്പിക്കുന്നു).

1. കാൽനടയാത്രക്കാരെ.

2. റോഡിൽ കുറുകെ വെളുത്ത വരകൾ വരച്ചിട്ടുണ്ടാകും. ആ സ്ഥലത്തു കൂടിയാണ് റോഡു മുറിച്ചു കടക്കേണ്ടത്. ഈ വരകളെ സീബ്രാ വരകൾ എന്നുപറയുന്നു.

3. ട്രാഫിക് പോലീസുകാരൻ വാഹനങ്ങളെ തടഞ്ഞിട്ട് കാൽനടയാത്രക്കാർക്ക് റോഡുമുറിച്ചു അങ്ങോട്ടുമിങ്ങോട്ടും കടക്കാനുള്ള സൗകര്യമുണ്ടാക്കിത്തരും.

4. ഇരുവശത്തുനിന്നും വാഹനങ്ങൾ വരുന്നില്ലെന്ന് ഉറപ്പുവരുത്തിയ ശേഷം മാത്രമേ കടക്കാൻ പാടുള്ളൂ. നഗരങ്ങളിൽ സീബ്രാ വരകളിൽ കൂടി ആയിരിക്കണം. നിർത്തിയിട്ടിരിക്കുന്ന വാഹനങ്ങൾക്കു മുന്നിലൂടെയോ പിന്നിലൂടെയോ റോഡുമുറിച്ചു കടക്കുമ്പോഴും ശ്രദ്ധിക്കണം.

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്നും പുതുതായി കേൾക്കുന്ന നിങ്ങൾക്ക് അർത്ഥം അറിയാത്ത പദങ്ങൾ ഓരോത്തരും എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറൈകൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ അർത്ഥം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് വിപരീത പദങ്ങൾ എഴുതാൻ കഴിയുന്ന പദങ്ങൾ

ഓരോരുത്തരും കണ്ടുപിടിച്ചെഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ വിപരീതം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞു കൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് പര്യായ പദങ്ങൾ എഴുതാൻ കഴിയുന്ന പദങ്ങൾ ഓരോരുത്തരും കണ്ടുപിടിച്ചെഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോഗ്രൂപ്പു ലീഡറെകൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ പര്യായം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് ഞാൻ ഒരു വാക്ക് പറയും. ആ വാക്കുപയോഗിച്ച് എല്ലാ ഗ്രൂപ്പിലെയും അംഗങ്ങൾ പരസ്പരം ചർച്ചചെയ്ത് ഓരോ വാക്യം ഉണ്ടാക്കണം.

(സുരക്ഷിതരായി)

(കുട്ടികൾ ചർച്ചചെയ്ത് വാക്യത്തിൽ പ്രയോഗിക്കുന്നു)

(ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടു വാക്യങ്ങൾ വായിപ്പിക്കുന്നു. അധ്യാപിക അത് BB യിൽ എഴുതുന്നു. ഏറ്റവും നല്ല വാക്യം ഉണ്ടാക്കിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി ചെയ്തതിന് എല്ലാ ഗ്രൂപ്പുകളേയും അഭിനന്ദിക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ. ഇനി പാഠഭാഗത്തു പറയുന്ന കാര്യങ്ങൾ എന്തൊക്കെയാണെന്ന് സ്വന്തം വാക്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം ചർച്ച ചെയ്ത് ശരിയാക്കി എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

(അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) ആശാൻ ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ഉള്ളൂർ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിക്കുക

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('വള്ളത്തോൾ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('വള്ളത്തോൾ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിക്കുക

('വള്ളത്തോൾ' ഗ്രൂപ്പ് ചർച്ചചെയ്യുന്നു)

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിക്കുക

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ചങ്ങമ്പുഴ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

‘ചങ്ങമ്പുഴ’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : ‘ചങ്ങമ്പുഴ’ ഗ്രൂപ്പ് വായിക്കുക

‘ചങ്ങമ്പുഴ’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : (‘ആശാൻ’ ഗ്രൂപ്പിലെ കുട്ടികളോട്)
‘വള്ളത്തോൾ’ ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ
ആശയവും വന്നിട്ടുണ്ടോ?

(‘ആശാൻ’ ഗ്രൂപ്പ് ചർച്ചചെയ്യുന്നു).

‘ആശാൻ’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

V

PHASE 1

(സശ്രദ്ധം സഞ്ചരിക്കു എന്ന പാഠഭാഗത്തിലെ 5-ാമത്തെ ഭാഗം മൗനമായി വായി
ക്കാൻ പറയുന്നു).

കുട്ടികൾ വായിച്ചുകഴിഞ്ഞതിനുശേഷം അധ്യാപിക ഉച്ചാരണശുദ്ധിയോടും വ്യക്ത
തയോടും കൂടി പാഠഭാഗം വായിച്ചു കേൾപ്പിക്കുന്നു.

PHASE 2

ഓരോ ഗ്രൂപ്പിലേയും രണ്ടു പേരെ കൊണ്ടു വീതം പാഠഭാഗം വായിപ്പിക്കുന്നു.
അധ്യാപിക പാഠഭാഗം ഒന്നുകൂടി വായിച്ച് അവർ വരുത്തിയ തെറ്റുകൾ പറഞ്ഞു
കൊടുക്കുന്നു.

PHASE 3

വായിച്ച പാഠഭാഗത്തിന്റെ ആശയം കിട്ടത്തക്ക വിധത്തിൽ അതിൽ നിന്ന് ചോദ്യ
ങ്ങളുണ്ടാക്കാൻ പറയുന്നു

(അല്പസമയത്തിനുശേഷം അധ്യാപിക ഓരോ ഗ്രൂപ്പിനെയൊന്നും അവരെഴു
തിയ ചോദ്യങ്ങൾ വായിപ്പിക്കുന്നു).

1. ഗതാഗത നിയമങ്ങൾ എന്തൊക്കെയാണ്?

- 2. കുട്ടികൾക്കിടയിൽ കാണുന്ന പ്രവണത എന്ത്?
- 3. ബസ്സിൽ തുങ്ങിനിന്ന് യാത്ര ചെയ്താലുള്ള ദോഷം എന്ത്?
- 4. ബസ്സിൽ കൈയും തലയും പുറത്തിടരുത് എന്നെഴുതിവെച്ചിരിക്കുന്നതെന്തിനാണ്?

അധ്യാപിക : ഇനി നിങ്ങൾ എഴുതിയ ചോദ്യങ്ങൾക്കെല്ലാം പൂസ്തകം നോക്കി ഉത്തരം കണ്ടുപിടിച്ചെഴുതുക

(ഓരോ ഗ്രൂപ്പും എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പും എഴുതിയ ഉത്തരങ്ങൾ വായിപ്പിക്കുന്നു).

- 1. റോഡിൽ എപ്പോഴും വലതുവശം ചേർന്നേ നടക്കാവൂ. കൂട്ടം കൂടിയും തോളിൽ കൈയിട്ടും കൈകോർത്തുപിടിച്ചും ഒരിക്കലും റോഡിലൂടെ നടക്കരുത്. റോഡിന്റെ മധ്യത്തിലൂടെ യാത്ര ചെയ്യരുത്.
- 2. വാഹനങ്ങൾ വരികയില്ലെന്ന് വിചാരിച്ച് നിരത്തുകൾ കളിസ്ഥലമാക്കുന്ന പ്രവണത കുട്ടികൾക്കിടയിലുണ്ട്.
- 3. പിടിവിട്ടുപോയാൽ റോഡിൽ മറിഞ്ഞുവീഴും പിന്നാലെ വരുന്ന വാഹനത്തിന്റെ അടിയിൽപെടുകയും ചെയ്യും.
- 4. ശ്രദ്ധിക്കാതെ കൈയോ തലയോ പുറത്തിട്ടാൽ പാഞ്ഞുപോയ്ക്കൊണ്ടിരിക്കുന്ന മറ്റു വാഹനങ്ങളിലോ വഴിയരികിലെ തൂണുകളിലോ തട്ടി അപകടം പററും.

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തു നിന്നും പുതുതായി കേൾക്കുന്ന നിങ്ങൾക്ക് അർത്ഥം അറിയാത്ത പദങ്ങൾ ഓരോത്തരും എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറൈകൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ അർത്ഥം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തു നിന്ന് വിപരീത പദങ്ങൾ എഴുതാൻ കഴിയുന്ന പദങ്ങൾ ഓരോത്തരും കണ്ടുപിടിച്ചെഴുതുക

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെ കൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ വിപരീതം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു)

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് പര്യായ പദങ്ങൾ എഴുതാൻ കഴിയുന്ന പദങ്ങൾ ഓരോരുത്തരും കണ്ടുപിടിച്ചെഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ പര്യായം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കുവാൻ പറയുന്നു. അറിയാത്തവ പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

‘ചങ്ങമ്പുഴ’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് ഞാൻ ഒരു വാക്ക് പറയും. ആ വാക്കുപയോഗിച്ച് എല്ലാ ഗ്രൂപ്പിലെയും അംഗങ്ങൾ പരസ്പരം ചർച്ചചെയ്ത് ഓരോ വാക്യം ഉണ്ടാക്കണം.

(ക്ഷണിച്ചുവരുത്തുക)

(കുട്ടികൾ ചർച്ച ചെയ്ത് വാക്യത്തിൽ പ്രയോഗിക്കുന്നു)

(ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടും വാക്യങ്ങൾ വായിപ്പിക്കുന്നു. അധ്യാപിക അത് BB യിൽ എഴുതുന്നു. ഏറ്റവും നല്ല വാക്യം ഉണ്ടാക്കിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി ചെയ്തതിന് എല്ലാ ഗ്രൂപ്പുകളേയും അഭിനന്ദിക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ. ഇനി പാഠഭാഗത്തു പറയുന്ന കാര്യങ്ങൾ എന്തൊ

കൈയാണെന്ന് സ്വന്തം വാക്യത്തിൽ എഴു
തുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം
ചർച്ചചെയ്ത് ശരിയാക്കി എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

(അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ആശാൻ'
ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നു
ട്ടുണ്ടോ?

('ഉള്ളൂർ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിക്കുക

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പിലെ കുട്ടികളോട് 'ഉള്ളൂർ'
ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നി
ട്ടുണ്ടോ?

('വള്ളത്തോൾ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിക്കുക

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ചങ്ങമ്പുഴ' ഗ്രൂപ്പിലെ കുട്ടികളോട്)
'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ
ആശയവും വന്നിട്ടുണ്ടോ?

('ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിക്കുക

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ആശാൻ' ഗ്രൂപ്പിലെ കുട്ടികളോട്)
'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ
ആശയവും വന്നിട്ടുണ്ടോ?

('ആശാൻ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

(ഓരോ ഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ചു കേൾക്കുന്നു. ഏറ്റവും നന്നായി
ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു).

VI

PHASE 1

സശ്രദ്ധം സഞ്ചരിക്കു എന്ന പാഠഭാഗത്തിലെ 6-ാമത്തെ ഭാഗം മൗനമായി വായി
ക്കാൻ പറയുന്നു.

കുട്ടികൾ വായിച്ചു കഴിഞ്ഞതിനുശേഷം അധ്യാപിക ഉച്ചാരണശുദ്ധിയോടും വ്യക്ത
തയോടും കൂടി പാഠഭാഗം വായിച്ചു കേൾപ്പിക്കുന്നു.

PHASE 2

ഓരോ ഗ്രൂപ്പിലേയും രണ്ടുപേരെകൊണ്ടു വീതം പാഠഭാഗം വായിപ്പിക്കുന്നു. അധ്യാ
പിക പാഠഭാഗം ഒന്നുകൂടി വായിച്ച് അവർ വരുത്തിയ തെറ്റുകൾ പറഞ്ഞുകൊടു
ക്കുന്നു.

PHASE 3

വായിച്ച പാഠഭാഗത്തിന്റെ ആശയം കിട്ടത്തക്കവിധം അതിൽ നിന്ന് ചോദ്യങ്ങളു
ണ്ടാക്കാൻ ആവശ്യപ്പെടുന്നു.

(അല്പസമയത്തിനുശേഷം ചോദ്യങ്ങൾ വായിപ്പിക്കുന്നു).

1. പഴഞ്ഞാലി റോഡിൽ വലിച്ചെറിയരുത് എന്നുപറയാൻ കാരണം എന്ത്?

ചർച്ചചെയ്ത് ശരിയാക്കി എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

(അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ആശാൻ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ഉള്ളൂർ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിക്കുക

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('വള്ളത്തോൾ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('വള്ളത്തോൾ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിക്കുക

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ചങ്ങമ്പുഴ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിക്കുക

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

ഓരോരുത്തരും കണ്ടുപിടിച്ചെഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെക്കൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ വിപരീതം അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തുനിന്ന് പര്യായ പദങ്ങൾ എഴുതാൻ കഴിയുന്ന പദങ്ങൾ ഓരോരുത്തരും കണ്ടുപിടിച്ചെഴുതുക.

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെക്കൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ പര്യായം അറിയാമെങ്കിൽ പറഞ്ഞു കൊടുക്കുവാൻ പറയുന്നു. അറിയാത്തവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തു നിന്ന് ഞാൻ ഒരു വാക്കു പറയും. ആ വാക്കുപയോഗിച്ച് എല്ലാ ഗ്രൂപ്പിലേയും അംഗങ്ങൾ പരസ്പരം ചർച്ചചെയ്ത് ഓരോ വാക്യം ഉണ്ടാക്കണം

(നികേഷപിക്കുക)

(കുട്ടികൾ ചർച്ചചെയ്ത് വാക്യത്തിൽ പ്രയോഗിക്കുന്നു)

(ഓരോ ഗ്രൂപ്പ് ലീഡറെക്കൊണ്ടും വാക്യങ്ങൾ വായിപ്പിക്കുന്നു. അധ്യാപിക അത് BB യിൽ എഴുതുന്നു. ഏറ്റവും നല്ല വാക്യം ഉണ്ടാക്കിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി ചെയ്തതിന് എല്ലാ ഗ്രൂപ്പുകളെയും അഭിനന്ദിക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പാഠഭാഗത്തെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ. ഇനി ആ ഭാഗത്തു പറയുന്ന കാര്യങ്ങൾ എന്തൊക്കെയാണെന്ന് സ്വന്തം വാക്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം

ചർച്ചചെയ്ത് ശരിയാക്കി എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു)

(അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ആശാൻ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ഉള്ളൂർ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിക്കുക

'ഉള്ളൂർ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('വള്ളത്തോൾ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ഉള്ളൂർ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('വള്ളത്തോൾ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിക്കുക

'വള്ളത്തോൾ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ചങ്ങമ്പുഴ' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'വള്ളത്തോൾ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിക്കുക

'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ആശാൻ' ഗ്രൂപ്പിലെ കുട്ടികളോട്)
'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ
ആശയവും വന്നിട്ടുണ്ടോ?

('ആശാൻ' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'ആശാൻ' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

(ഓരോ ഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ചു കേൾക്കുന്നു. ഏറ്റവും നന്നായി
ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാ
ഗ്രൂപ്പിനേയും അഭിനന്ദിക്കുന്നു).



Appendix II
UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION
LESSON PLAN FOR COOPERATIVE LEARNING STRATEGY - POETRY
Standard VI

Dr.Kamala S. Pillai

Bindhu. C.M.

PHASE I

2 Days

Time 80+80 mt

(അധ്യാപിക കുട്ടികളുമായി അനുപചാരിക സംഭാഷണത്തിൽ ഏർപ്പെടുന്നു. സംഭാഷണത്തിനിടയിൽ നിങ്ങൾക്ക് അമ്മ പാട്ട് പാടി തരാറില്ലേ? എന്നു ചോദിക്കുന്നു. അധ്യാപിക ആദ്യം ഒരു താരാട്ട് പാട്ടിന്റെയും പിന്നീട് മറ്റൊരു പാട്ടിന്റെയും കാസറ്റ് കുട്ടികളെ കേൾപ്പിക്കുന്നു. ഏത് പാട്ടാണ് നിങ്ങൾക്ക് കൂടുതൽ ഇഷ്ടപ്പെട്ടത്? കൂടുതൽ ഇമ്പമുള്ളത്? ആദ്യത്തേതെന്ന് കുട്ടികൾ പറയുന്നു.

അധ്യാപിക : എന്തുകൊണ്ടാണ് ആദ്യത്തെ പാട്ട് ഇഷ്ടപ്പെട്ടത്?

(ആദ്യത്തെ പാട്ട് ഒരമ്മ കുഞ്ഞിനെ ഉറക്കാൻ പാടുന്ന പാട്ടാണെന്ന് കുട്ടികൾ പറയുന്നു).

അധ്യാപിക : ഈ പാട്ടിനൊക്കെ വളരെ മുമ്പുതന്നെ താരാട്ട് പാട്ട് ഉണ്ടായിട്ടുണ്ട്. അങ്ങനെ പ്രസിദ്ധമായ താരാട്ട് എഴുതിയ ആളാണ് ഇരയിമ്മൻ തമ്പി (ഇരയിമ്മൻ തമ്പിയുടെ ചിത്രം കാണിക്കുന്നു)

ഇദ്ദേഹം എഴുതിയ പാട്ട് നമുക്കൊന്നു കേൾക്കാം. 'ഒരു താരാട്ട്' എന്ന പാഠഭാഗം എടുക്കാൻ ആവശ്യപ്പെടുന്നു.

‘ഒരു താരാട്ട്’ എന്ന പദ്യത്തിനെ നാലുഭാഗങ്ങളായി തിരിച്ചിരിക്കുന്നു. ആദ്യത്തെ പന്ത്രണ്ടു വരികൾ അധ്യാപിക ഈണത്തിൽ ചൊല്ലുന്നു.

രണ്ടുമൂന്നാവർത്തി അധ്യാപിക കവിത ചൊല്ലുന്നു.

PHASE 2

(ആകെയുള്ള കുട്ടികളെ 4 ഗ്രൂപ്പായി തിരിക്കുന്നു. ഇതിനായി കുട്ടികളെകൊണ്ട് 1,2,3,4 വരെ എണ്ണം എടുപ്പിക്കുന്നു. എണ്ണം എടുത്തതിനുശേഷം 1 എന്ന നമ്പരുള്ളവരെല്ലാം ഒരു ഗ്രൂപ്പാവാൻ 2 മറ്റൊരു ഗ്രൂപ്പാവാൻ 3 വേറൊരു ഗ്രൂപ്പാവാൻ 4 നാലാമത്തെ ഗ്രൂപ്പാവാൻ പറയുന്നു. ക്രമമനുസരിച്ച് ഓരോ ഗ്രൂപ്പിനും ഒ.എൻ.വി., കടമ്മനിട്ട, സുഗതകുമാരി, ചുള്ളിക്കാട് - ഗ്രൂപ്പുകളെന്ന് പേരുകൊടുക്കുന്നു. ഓരോ ഗ്രൂപ്പിൽ നിന്നും ഓരോ ഗ്രൂപ്പ് ലീഡറെയും കണ്ടെത്തുന്നു).

ഓരോ ഗ്രൂപ്പിലേയും കുട്ടികളെകൊണ്ട് ഈണത്തിൽ കവിത ചൊല്ലുന്നു.

അധ്യാപിക കുട്ടികൾക്ക് അർത്ഥം മനസ്സിലാക്കത്തക്കവിധത്തിൽ നിർത്തി നിർത്തി ഈണത്തിൽ കവിത രണ്ടുമൂന്നാവർത്തി ചൊല്ലി കേൾപ്പിക്കുന്നു.

പദ്യത്തിലെ ഓരോ വരിയുടെയും അർത്ഥം പറഞ്ഞ് കൊടുത്ത് ഈണത്തിൽ അധ്യാപിക കവിത ചൊല്ലുന്നു.

PHASE 3

(വായിച്ചപാഠഭാഗത്ത് നിന്ന് അർത്ഥം, പര്യായം, വിപരീതം ഇവ അറിയാത്ത പദങ്ങൾ ചർച്ചചെയ്ത് എഴുതാൻ ഓരോ ഗ്രൂപ്പിനോടും പറയുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെ കൊണ്ടും അവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് പദങ്ങളുടെ അർത്ഥം, വിപരീതം, പര്യായം ഇവ അറിയാമെങ്കിൽ പറഞ്ഞു കൊടുക്കാൻ ആവശ്യപ്പെടുന്നു. അറിയാത്ത പദങ്ങളുടെ അർത്ഥം, വിപരീതം, പര്യായം എന്നിവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പദ്യഭാഗത്തിലെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ? ഇനി ആ പദ്യഭാഗത്തെ ആശയം എല്ലാവരും ഗദ്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം ചർച്ച ചെയ്ത് ശരിയാക്കി എഴു

തുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

(അല്പസമയത്തിനുശേഷം 'ഒ.എൻ.വി' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

'ഒ.എൻ.വി.' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('കടമ്മനിട്ട' ഗ്രൂപ്പിലെ കുട്ടികളോട്)
'ഒ.എൻ.വി. ഗ്രൂപ്പ്' വായിച്ചതിൽ പദ്യഭാഗത്തെ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

('കടമ്മനിട്ട' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'കടമ്മനിട്ട' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'കടമ്മനിട്ട' ഗ്രൂപ്പ് വായിക്കുക.

'കടമ്മനിട്ട' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('സുഗതകുമാരി' ഗ്രൂപ്പിലെ കുട്ടികളോട്)
'കടമ്മനിട്ട' ഗ്രൂപ്പ് വായിച്ചതിൽ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

('സുഗതകുമാരി' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

'സുഗതകുമാരി' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : 'സുഗതകുമാരി' ഗ്രൂപ്പ് വായിക്കുക

'സുഗതകുമാരി' ഗ്രൂപ്പ് ലീഡർ : ('ചുള്ളിക്കാട്' ഗ്രൂപ്പിലെ കുട്ടികളോട്)
'സുഗതകുമാരി' ഗ്രൂപ്പ് വായിച്ചതിൽ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

('ചുള്ളിക്കാട്' ഗ്രൂപ്പ് ചർച്ചചെയ്യുന്നു)

'ചുള്ളിക്കാട്' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'ചുള്ളിക്കാട്' ഗ്രൂപ്പ് വായിക്കുക

'ചുള്ളിക്കാട്' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ഒ.എൻ.വി.' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ചുള്ളിക്കൊട്' ഗ്രൂപ്പു വായിച്ചതിൽ മുഴുവൻ ആശയം വന്നിട്ടുണ്ടോ?

('ഒ.എൻ.വി.' ഗ്രൂപ്പ് ചർച്ചചെയ്യുന്നു)

'ഒ.എൻ.വി.' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

(എല്ലാ ഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ചു കേൾക്കുന്നു. ഏറ്റവും നന്നായി ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാ ഗ്രൂപ്പിനേയും അഭിനന്ദിക്കുന്നു).

II

PHASE 1

ഒരു താരാട്ട് എന്ന പദ്യത്തിനെ നാലുഭാഗങ്ങളായി തിരിച്ചതിൽ രണ്ടാമത്തെ പന്ത്രണ്ടു വരികൾ അധ്യാപിക ഈണത്തിൽ ചൊല്ലുന്നു. രണ്ടുമൂന്നാവർത്തി അധ്യാപിക കവിത ചൊല്ലുന്നു.

PHASE 2

(ഓരോ ഗ്രൂപ്പിലേയും കുട്ടികളേയും കൊണ്ട് ഈണത്തിൽ കവിത ചൊല്ലിക്കുന്നു).

അധ്യാപിക കുട്ടികൾക്ക് അർത്ഥം മനസ്സിലാക്കത്തക്കവിധത്തിൽ നിർത്തി നിർത്തി ഈണത്തിൽ രണ്ടുമൂന്നാവർത്തി കവിത ചൊല്ലി കേൾപ്പിക്കുന്നു.

പദ്യത്തിലെ ഓരോ വരിയുടെയും അർത്ഥം പറഞ്ഞുകൊടുത്ത് ഈണത്തിൽ അധ്യാപിക കവിതചൊല്ലുന്നു).

PHASE 3

(വായിച്ച പാഠഭാഗത്തുനിന്ന് അർത്ഥം, പര്യായം, വിപരീതം ഇവ അറിയാത്ത പദങ്ങൾ ചർച്ചചെയ്ത് എഴുതാൻ ഓരോ ഗ്രൂപ്പിനോടും പറയുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറെകൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ കുട്ടികൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് പദങ്ങളുടെ അർത്ഥം, പര്യായം, വിപരീതം ഇവ അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ ആവശ്യപ്പെടുന്നു. അറിയാത്ത പദങ്ങളുടെ അർത്ഥം, വിപരീതം, പര്യായം

എന്നിവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പദ്യഭാഗത്തെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ? ഇനി ആ പദ്യത്തിലെ ആശയം എല്ലാവരും ഗദ്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം ചർച്ചചെയ്ത് ശരിയായി എഴുതുക

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു. അല്പസമയത്തിനുശേഷം ഒ.എൻ.വി. ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

‘ഒ.എൻ.വി.’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : (‘കടമ്മനിട്ട’ ഗ്രൂപ്പിലെ കുട്ടികളോട്) ‘ഒ.എൻ.വി.’ ഗ്രൂപ്പ് വായിച്ചതിൽ പദ്യഭാഗത്തെ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

(‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : ‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് വായിക്കുക

‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : (‘സുഗതകുമാരി’ ഗ്രൂപ്പിലെ കുട്ടികളോട്) ‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് വായിച്ചതിൽ പദ്യഭാഗത്തെ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

(‘സുഗതകുമാരി’ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു)

‘സുഗതകുമാരി’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : ‘സുഗതകുമാരി’ ഗ്രൂപ്പ് വായിക്കുക

‘സുഗതകുമാരി’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : (‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പിലെ കുട്ടികളോട്) ‘സുഗതകുമാരി’ ഗ്രൂപ്പ് വായിച്ചതിൽ പദ്യ

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ഭാഗത്തെ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് ചർച്ചചെയ്യുന്നു).

‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : ‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് വായിക്കുക

‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : (‘ഒ.എൻ.വി.’ ഗ്രൂപ്പിനോട്) ‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് വായിച്ചതിൽ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

(‘ഒ.എൻ.വി.’ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

‘ഒ.എൻ.വി.’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

(എല്ലാഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ചുകേൾക്കുന്നു. ഏറ്റവും നന്നായി ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാ ഗ്രൂപ്പിനേയും അഭിനന്ദിക്കുന്നു).

III

PHASE 1

(‘ഒരു താരാട്ട്’ എന്ന പദ്യത്തിനെ നാലു ഭാഗങ്ങളായി തിരിച്ചതിൽ മൂന്നാമത്തെ പന്ത്രണ്ടുവരികൾ അധ്യാപിക ഈണത്തിൽ ചൊല്ലുന്നു. രണ്ടുമൂന്നാമർത്തി അധ്യാപിക കവിത ചൊല്ലുന്നു).

PHASE 2

(ഓരോ ഗ്രൂപ്പിലെയും കുട്ടികളെകൊണ്ട് ഈണത്തിൽ കവിത ചൊല്ലിക്കുന്നു. അധ്യാപിക കുട്ടികൾക്ക് അർത്ഥം മനസ്സിലാക്കത്തക്കവിധത്തിൽ നിർത്തിനിർത്തി ഈണത്തിൽ രണ്ടുമൂന്നാമർത്തി കവിത ചൊല്ലി കേൾപ്പിക്കുന്നു).

(പദ്യത്തിലെ ഓരോ വരിയുടെയും അർത്ഥം പറഞ്ഞുകൊടുത്ത് ഈണത്തിൽ അധ്യാപിക കവിത ചൊല്ലുന്നു).

PHASE 3

(വായിച്ച പാഠഭാഗത്തുനിന്ന് അർത്ഥം, പര്യായം, വിപരീതം ഇവ അറിയാത്ത പദങ്ങൾ ചർച്ചചെയ്ത് എഴുതാൻ ഓരോ ഗ്രൂപ്പിനോടും പറയുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പ് ലീഡറുകൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് പദങ്ങളുടെ അർത്ഥം, പര്യായം, വിപരീതം ഇവ അറിയാമെങ്കിൽ പറഞ്ഞുകൊടുക്കാൻ ആവശ്യപ്പെടുന്നു. അറിയാത്ത പദങ്ങളുടെ അർത്ഥം, വിപരീതം, പര്യായം എന്നിവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പദ്യഭാഗത്തിലെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ? ഇനി ആ പദ്യഭാഗത്തിലെ ആശയം എല്ലാവരും ഗദ്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പിലുള്ളവരും പരസ്പരം ചർച്ചചെയ്ത് ശരിയാക്കി എഴുതുക.

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

‘ഒ.എൻ.വി.’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : (‘കടമ്മനിട്ട’ ഗ്രൂപ്പിലെ കുട്ടികളോട്) ‘ഒ.എൻ.വി.’ഗ്രൂപ്പ് വായിച്ചതിൽ പദ്യഭാഗത്തിലെ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

(‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് ചർച്ചചെയ്യുന്നു).

‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

അധ്യാപിക : ‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് വായിക്കുക

‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : (‘സുഗതകുമാരി’ ഗ്രൂപ്പിലെ കുട്ടികളോട്) ‘കടമ്മനിട്ട’ ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

(‘സുഗതകുമാരി’ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

‘സുഗതകുമാരി’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : ‘സുഗതകുമാരി’ ഗ്രൂപ്പ് വായിക്കുക

‘സുഗതകുമാരി’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : (‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പിലെ കുട്ടികളോട്)
‘സുഗതകുമാരി’ ഗ്രൂപ്പ് വായിച്ചതിൽ
ആശയവും വന്നിട്ടുണ്ടോ?

(‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക: ; ‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് വായിക്കുക

‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : (‘ഒ.എൻ.വി.’ ഗ്രൂപ്പിലെ കുട്ടികളോട്)
‘ചുള്ളിക്കാട്’ ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ
ആശയവും വന്നിട്ടുണ്ടോ?

(‘ഒ.എൻ.വി.’ ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

‘ഒ.എൻ.വി.’ ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

(എല്ലാഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ച് കേൾക്കുന്നു. ഏറ്റവും നന്നായി
ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാവ
രെയും അഭിനന്ദിക്കുന്നു).

IV

PHASE 1

(‘ഒരു താരാട്ട്’ എന്ന പദ്യത്തിനെ നാലു ഭാഗങ്ങളായി തിരിച്ചതിൽ അവസാനത്തെ
പത്തു വരി അധ്യാപിക ഈണത്തിൽ ചൊല്ലുന്നു. രണ്ടുമൂന്നാമർത്തി അധ്യാപിക
കവിത ചൊല്ലുന്നു).

PHASE 2

(ഓരോ ഗ്രൂപ്പിലേയും കുട്ടികളെകൊണ്ട് ഈണത്തിൽ കവിത ചൊല്ലിക്കുന്നു).

അധ്യാപിക കുട്ടികൾക്ക് അർത്ഥം മനസ്സിലാകത്തക്ക വിധത്തിൽ നിർത്തി നിർത്തി ഈണത്തിൽ രണ്ടുമൂന്നാവർത്തി കവിത ചൊല്ലി കേൾപ്പിക്കുന്നു).

(പദ്യത്തിലെ ഓരോ വരിയുടെയും അർത്ഥം പറഞ്ഞുകൊടുത്ത് ഈണത്തിൽ അധ്യാപിക കവിത ചൊല്ലുന്നു).

PHASE 3

(വായിച്ച പാഠഭാഗത്തുനിന്ന് അർത്ഥം, പദ്യായം, വിപരീതം ഇവ അറിയാത്ത പദങ്ങൾ ചർച്ചചെയ്ത് എഴുതാൻ ഓരോ ഗ്രൂപ്പിനോടും പറയുന്നു).

(അല്പസമയത്തിനുശേഷം ഓരോ ഗ്രൂപ്പിലീഡറെക്കൊണ്ടും അവരവരുടെ ഗ്രൂപ്പിലെ അംഗങ്ങൾ എഴുതിയ പദങ്ങൾ വായിപ്പിക്കുന്നു. ഏതെങ്കിലും ഗ്രൂപ്പിലെ കുട്ടികൾക്ക് ആ പദങ്ങളുടെ അർത്ഥം അറിയാമെങ്കിൽ പറഞ്ഞു കൊടുക്കാൻ ആവശ്യപ്പെടുന്നു. അറിയാത്ത പദങ്ങളുടെ അർത്ഥം, വിപരീതം, പദ്യായം എന്നിവ അധ്യാപിക പറഞ്ഞുകൊടുക്കുന്നു. കുട്ടികൾ എഴുതിയെടുക്കുന്നു).

PHASE 4

അധ്യാപിക : നിങ്ങൾ വായിച്ച പദ്യഭാഗത്തിലെ ആശയം ഇപ്പോൾ എല്ലാവർക്കും മനസ്സിലായില്ലേ? ഇനി ആ പദ്യഭാഗത്തിലെ ആശയം എല്ലാവരും ഗദ്യത്തിൽ എഴുതുക. ഓരോ ഗ്രൂപ്പും പരസ്പരം ചർച്ചചെയ്ത് ശരിയാക്കി എഴുതുക

(കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു).

(അല്പസമയത്തിനുശേഷം 'ഒ.എൻ.വി.' ഗ്രൂപ്പിനോട് വായിക്കാൻ പറയുന്നു).

'ഒ.എൻ.വി.' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('കടമ്മനിട്ട'ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ഒ.എൻ.വി.' ഗ്രൂപ്പ് വായിച്ചതിൽ പദ്യഭാഗത്തിലെ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

('കടമ്മനിട്ട' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'കടമ്മനിട്ട' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

5

അധ്യാപിക : 'കടമ്മനിട്ട' ഗ്രൂപ്പ് വായിക്കുക

'കടമ്മനിട്ട' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('സുഗതകുമാരി' ഗ്രൂപ്പിലെ കുട്ടികളോട്) കടമ്മനിട്ട ഗ്രൂപ്പ് വായിച്ചതിൽ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

('സുഗതകുമാരി' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'സുഗതകുമാരി' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'സുഗതകുമാരി' ഗ്രൂപ്പ് വായിക്കുക

'സുഗതകുമാരി' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു.

അധ്യാപിക : ('ചുള്ളിക്കാട്' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'സുഗതകുമാരി' ഗ്രൂപ്പ് വായിച്ചതിൽ എല്ലാ ആശയവും വന്നിട്ടുണ്ടോ?

('ചുള്ളിക്കാട്' ഗ്രൂപ്പ് ചർച്ചചെയ്യുന്നു).

'ചുള്ളിക്കാട്' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു.

അധ്യാപിക : 'ചുള്ളിക്കാട്' ഗ്രൂപ്പ് വായിക്കുക

'ചുള്ളിക്കാട്' ഗ്രൂപ്പ് ലീഡർ വായിക്കുന്നു

അധ്യാപിക : ('ഒ.എൻ.വി.' ഗ്രൂപ്പിലെ കുട്ടികളോട്) 'ചുള്ളിക്കാട്' ഗ്രൂപ്പ് വായിച്ചതിൽ മുഴുവൻ ആശയവും വന്നിട്ടുണ്ടോ?

('ഒ.എൻ.വി.' ഗ്രൂപ്പ് ചർച്ച ചെയ്യുന്നു).

'ഒ.എൻ.വി.' ഗ്രൂപ്പ് ലീഡർ ഉത്തരം പറയുന്നു

(എല്ലാ ഗ്രൂപ്പും വായിച്ചത് അധ്യാപിക ശ്രദ്ധിച്ചു കേൾക്കുന്നു. ഏറ്റവും നന്നായി ആശയം എഴുതിയ ഗ്രൂപ്പിനെ അനുമോദിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാ ഗ്രൂപ്പുകാരെയും അഭിനന്ദിക്കുന്നു).



Appendix III
 UNIVERSITY OF CALICUT
 DEPARTMENT OF EDUCATION
 LESSON PLAN FOR COOPERATIVE LEARNING STRATEGY - GRAMMAR
 Standard VI

Dr.Kamala S. Pillai

Bindhu. C.M.

PHASE I

2 Days
 Time 80+80 mts

(അധ്യാപിക കുട്ടികളുമായി അനുപചാരിക സംഭാഷണത്തിൽ ഏർപ്പെടുന്നു. വാക്കുകൾ തമ്മിൽ കൂട്ടിച്ചേരുമ്പോൾ മാറ്റം ഉണ്ടാകുന്ന വാക്കുകളും മാറ്റം ഉണ്ടാകാത്ത വാക്കുകളും സംസാരത്തിൽ ഉപയോഗിക്കുന്നു).

- അധ്യാപിക : ഈ പഠനമുറിയിൽ എത്ര കുട്ടികൾക്ക് ഇരുന്നു പഠിക്കാൻ സൗകര്യം ഉണ്ട്?
 ഈ ക്ലാസ്സിൽ എത്ര ആൺകുട്ടികൾ ഉണ്ട്?
 ഈ ക്ലാസ്സിൽ എത്ര പെൺകുട്ടികൾ ഉണ്ട്?
 ഇന്ന് ആർ എല്ലാം ക്ലാസ്സിൽ വന്ന് ഇല്ല?
 നിങ്ങൾക്ക് എത് എല്ലാം വിഷയങ്ങൾ പഠിക്കാൻ ഉണ്ട്?
 നിങ്ങൾക്ക് എത്ര കോപ്പി പുസ്തകം ഉണ്ട്?

(ഈ ചോദ്യങ്ങളിലെ വാക്കുകൾ കൂട്ടിച്ചേർക്കാതെ ഒരു ചാർട്ടിൽ എഴുതിയത് അധ്യാപിക ക്ലാസ്സിൽ കാണിക്കുന്നു).

- അധ്യാപിക : സാധാരണ നമ്മൾ സംസാരിക്കുമ്പോൾ ഈ രീതിയിലാണോ സംസാരിക്കുന്നത്? എഴുതുമ്പോഴോ?
 കുട്ടികൾ : ഇങ്ങനെയല്ല സംസാരിക്കുന്നതും എഴുതുന്നതും.
 അധ്യാപിക : നിങ്ങൾക്ക് ഈ ചാർട്ടിൽ കാണുന്ന ചോദ്യങ്ങൾ സാധാരണ നിങ്ങൾ ചോദിക്കുന്ന രീതിയിൽ വായിക്കാമോ?
 (കുട്ടികൾ ചോദ്യങ്ങൾ വായിക്കുന്നു)
 കുട്ടികൾ : ഈ പഠനമുറിയിൽ എത്ര കുട്ടികൾക്ക് ഇരുന്നു പഠിക്കാൻ സൗകര്യം ഉണ്ട്?

ഈ ക്ലാസ്സിൽ എത്ര ആൺകുട്ടികൾ ഉണ്ട്?
 ഈ ക്ലാസ്സിൽ എത്ര പെൺകുട്ടികൾ ഉണ്ട്?
 ഇന്ന് ആരെല്ലാം ക്ലാസ്സിൽ വന്നില്ല?
 നിങ്ങൾക്ക് ഏതെല്ലാം വിഷയങ്ങൾ പഠിക്കാൻ ഉണ്ട്?
 നിങ്ങൾക്കെത്ര കോപ്പിപ്പുസ്തകം ഉണ്ട്?

(അധ്യാപിക മറ്റൊരു ചാർട്ട് കാണിക്കുന്നു. ഇതിൽ മാറ്റം വരാത്ത ചോദ്യങ്ങൾ അതേ പോലെ തന്നെയും വാക്കുകൾ കൂട്ടിച്ചേർക്കുമ്പോൾ മാറ്റം വരുന്ന ചോദ്യങ്ങൾ മാറ്റം വരുന്ന രീതിയിലുമാണ് എഴുതിയിട്ടുള്ളത്).

ഈ പഠനമുറിയിൽ എത്ര കുട്ടികൾക്ക് ഇരുന്നു പഠിക്കാൻ സൗകര്യം ഉണ്ട്?

ഈ ക്ലാസ്സിൽ എത്ര ആൺകുട്ടികൾ ഉണ്ട്?
 ഈ ക്ലാസ്സിൽ എത്ര പെൺകുട്ടികൾ ഉണ്ട്?
 ഇന്ന് ആരെല്ലാം ക്ലാസ്സിൽ വന്നില്ല?
 നിങ്ങൾക്ക് ഏതെല്ലാം വിഷയങ്ങൾ പഠിക്കാൻ ഉണ്ട്?
 നിങ്ങൾക്കെത്ര കോപ്പിപ്പുസ്തകം ഉണ്ട്?

- അധ്യാപിക : ഈ ചാർട്ടിലെഴുതിയ ചോദ്യങ്ങളിൽ അടിവരയിട്ട വാക്കുകളിലെ പ്രത്യേകതയെന്ത്?
- കുട്ടികൾ : ചോദ്യങ്ങളിലെ വാക്കുകൾ തമ്മിൽ ചേർത്തെഴുതിയിട്ടുണ്ട്.
- അധ്യാപിക : (ചാർട്ട് കാണിച്ചുകൊണ്ട്) ആർ, എല്ലാം എന്നീ രണ്ടു വാക്കുകൾ ചേർത്തെഴുതിയപ്പോൾ വാക്കുകൾക്ക് എന്തു സംഭവിക്കുന്നു?
- കുട്ടികൾ : വാക്കുകൾ ചേർത്തെഴുതിയപ്പോൾ മാറ്റം വന്നിട്ടുണ്ട്.

(മറ്റ് ഉദാഹരണചോദ്യങ്ങളിൽനിന്നും കൂട്ടിച്ചേർക്കുമ്പോൾ മാറ്റം വരുന്ന വാക്കുകൾ വെവ്വേറെയും കൂട്ടിച്ചേർത്തും കുട്ടികളെകൊണ്ട് പറയിപ്പിക്കുന്നു).

അധ്യാപിക : (എല്ലാ ചോദ്യങ്ങളും ഒരിക്കൽ കൂടി വായിക്കുന്നു).

(കൂട്ടിച്ചേർത്ത് ഉച്ചരിക്കുമ്പോൾ മാറ്റം വരാത്ത വാക്കുകൾ ചാർട്ട് നോക്കിക്കണ്ടുപിടിച്ച് കുട്ടികളെകൊണ്ട് പറയിപ്പിക്കുന്നു).

അധ്യാപിക : സംസാരിക്കുമ്പോഴും എഴുതുമ്പോഴും വാക്കുകൾ കൂട്ടിച്ചേർക്കുമ്പോൾ മാറ്റം വരുന്നതും വരാത്തതുമായ വാക്കുകൾ ഉണ്ടെന്ന് കണ്ടുവല്ലോ. ഇനി ഏതെല്ലാം രീതിയിലാണ് മാറ്റം വരുന്നതെന്ന് നമുക്ക് പരിശോധിക്കാം.

PHASE 2

(ആകെയുള്ള കുട്ടികളെ 4 ഗ്രൂപ്പായി തിരിക്കുന്നു. ഇതിനായി കുട്ടികളെകൊണ്ട് 1,2,3,4 വരെ എണ്ണം എടുപ്പിക്കുന്നു. എണ്ണം എടുത്തതിനുശേഷം 1 എന്ന നമ്പരുള്ളവരെല്ലാം ഒരു ഗ്രൂപ്പാവാൻ, 2 മറ്റൊരു ഗ്രൂപ്പാവാൻ, 3 വേറൊരു ഗ്രൂപ്പാവാൻ, 4 നാലാമത്തെ ഗ്രൂപ്പാവാൻ പറയുന്നു. ക്രമമനുസരിച്ച് ഓരോ ഗ്രൂപ്പിനും, ആശാൻ, ഉള്ളൂർ, വള്ളത്തോൾ, ചങ്ങമ്പുഴ - ഗ്രൂപ്പുകളെന്ന് പേരുകൊടുക്കുന്നു. ഓരോ ഗ്രൂപ്പിൽ നിന്നും ഓരോ ഗ്രൂപ്പ് ലീഡറെയും കണ്ടെത്തുന്നു).

കുട്ടിയെഴുതുവോൾ മാറററ വരുന്നതും വരാത്തതുമായ പദങ്ങൾ ഉള്ള വ്യത്യസ്തമായ ഓരോ ഖണ്ഡികകളുടെ photocopy ഓരോ ഗ്രൂപ്പിനുംകൊടുക്കുന്നു.

അധ്യാപിക : നിങ്ങൾക്ക് തന്നിരിക്കുന്ന ഖണ്ഡിക ഒരാവർത്തി ശ്രദ്ധിച്ച് വായിച്ചു നോക്കുക.

(കുട്ടികൾ വായിക്കുന്നു. അല്പസമയത്തിനുശേഷം)

അധ്യാപിക : തന്നിരിക്കുന്ന ഖണ്ഡിക നിങ്ങളെല്ലാവരും വായിച്ചല്ലോ. അതിൽനിന്ന് കുട്ടിയെഴുതുവോൾ മാറററ വരാത്ത പദങ്ങൾ ഏതൊക്കെയാണെന്ന് ഓരോ ഗ്രൂപ്പിലെയും അംഗങ്ങൾ തമ്മിൽതമ്മിൽ ചർച്ച ചെയ്ത് കണ്ടുപിടിച്ച് നിങ്ങളുടെ പുസ്തകത്തിൽ എടുത്ത് എഴുതുക.

(കുട്ടികൾ തമ്മിൽ ചർച്ച ചെയ്യുന്നു. പദങ്ങൾ ബുക്കിൽ എഴുതുന്നു).

അധ്യാപിക : എഴുതി കഴിഞ്ഞാൽ - ഈ കുട്ടിച്ചേർക്കുവോൾ മാറററ വരുന്ന പദങ്ങൾ നിങ്ങൾ തന്നിരിക്കുന്ന ഖണ്ഡികയിൽ അടയാളപ്പെടുത്തി വെയ്ക്കുക.

(കുട്ടികൾ തമ്മിൽ ചർച്ച ചെയ്ത് ഖണ്ഡികയിൽ അടയാളപ്പെടുത്തുന്നു).

അധ്യാപിക : മാറററവരാത്ത പദങ്ങൾ നിങ്ങൾ പുസ്തകത്തിൽ എഴുതിയത് ഓരോ ഗ്രൂപ്പ് ലീഡറും വായിക്കുക.

(ഓരോ ഗ്രൂപ്പിന്റെയും ലീഡർ വായിക്കുന്നു. വായിക്കുന്നത് അധ്യാപികയും മററു കുട്ടികളും ശ്രദ്ധിക്കുന്നു. ശരിയായവ ശരിയെന്നും തെററായവ തെററെന്നും ക്ലാസ്സിനു പറഞ്ഞു കൊടുക്കുന്നു. ഓരോ ഗ്രൂപ്പും എഴുതിയത് പരിശോധിച്ച് ആകെ ഉള്ളതിൽ എത്ര ശരി ഉത്തരം ഓരോഗ്രൂപ്പും എഴുതിയെന്ന് അവരെ അറിയിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാവരെയും അഭിനന്ദിക്കുന്നു).

PHASE 3

(കൊടുത്തിരിക്കുന്ന ഖണ്ഡികയിൽനിന്ന് കൂടിച്ചേർക്കുമ്പോൾ മാറ്റം വരുന്ന പദങ്ങൾ പുസ്തകത്തിലെഴുതാൻ ഓരോ ഗ്രൂപ്പിനോടും ആവശ്യപ്പെടുന്നു. കുട്ടികൾ ഖണ്ഡിക വായിച്ച് തമ്മിൽ ചർച്ചചെയ്ത് എഴുതുന്നു. ഓരോ ഗ്രൂപ്പിലേയും കുട്ടികൾ എഴുതുന്നത് അധ്യാപിക പരിശോധിക്കുന്നു. അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിന്റെ അടുത്തേക്ക് ചെല്ലുന്നു).

അധ്യാപിക : കുട്ടികൾ എഴുതിവെച്ചിട്ടുള്ളതിൽനിന്ന് ഒരു വാക്കു ചൂണ്ടി കാണിച്ചുകൊണ്ട് (ഉദാ: കണ്ടില്ലേ). ഈ വാക്ക് പിരിച്ചെഴുതാൻ ആവശ്യപ്പെടുന്നു.

('ആശാൻ' ഗ്രൂപ്പിലെ കുട്ടികൾ തമ്മിൽ ആലോചിച്ച് പിരിച്ചെഴുതി കാണിക്കുന്നു).

കണ്ടു+ ഇല്ലേ

അധ്യാപിക : പിരിച്ചെഴുതിയപ്പോൾ ഏതെല്ലാം വാക്കുകൾ അതിലുണ്ട്?
കുട്ടികൾ : കണ്ടു, ഇല്ലേ

(അധ്യാപിക കുട്ടികൾ പിരിച്ചെഴുതിയ പദം ഒരു കുട്ടിയുടെ ബുക്കിൽ കുട്ടി എഴുതി കാണിക്കുന്നു. കണ്ടു+ഇല്ലേ - കണ്ടില്ലേ)

അധ്യാപിക : ഈ വാക്കുകൾ തമ്മിൽ ചേർത്തെഴുതിയപ്പോൾ അക്ഷരങ്ങളുടെ എണ്ണത്തിന് എന്തുമാറ്റം ഉണ്ടായി?
കുട്ടികൾ : ഒരു അക്ഷരം ഇല്ലാതായി
അധ്യാപിക : ഇങ്ങനെ കുട്ടിയെഴുതുമ്പോൾ ഒരു അക്ഷരം ഇല്ലാതാകുന്ന മറ്റു പദങ്ങൾ നിങ്ങൾക്ക് തന്നിരിക്കുന്ന ഖണ്ഡികയിൽനിന്ന് കണ്ടുപിടിച്ച് പുസ്തകത്തിൽ എഴുതുക.

(കുട്ടികൾ പരസ്പരം ചർച്ച ചെയ്ത് എഴുതാൻ തുടങ്ങുന്നു. അധ്യാപിക 'ഉള്ളൂർ' ഗ്രൂപ്പിന്റെ അടുത്തേക്ക് നീങ്ങുന്നു).

അധ്യാപിക : കുട്ടികൾ എഴുതിവെച്ചിട്ടുള്ളതിൽനിന്ന് ഒരു വാക്കു ചൂണ്ടി കാണിച്ചുകൊണ്ട് (ഉദാ: മച്ചമ്പിയാണ്) ഈ വാക്ക് പിരിച്ചെഴുതാൻ ആവശ്യപ്പെടുന്നു.

('ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികൾ തമ്മിൽ ആലോചിച്ച് പിരിച്ചെഴുതി കാണിക്കുന്നു)

മച്ചമ്പി+ആണ്

അധ്യാപിക : പിരിച്ചെഴുതിയതിൽ ഏതെല്ലാം വാക്കുകൾ ഉണ്ട്?
കുട്ടികൾ : മച്ചമ്പി, ആണ്.

(അധ്യാപിക കുട്ടികൾ പിരിച്ചെഴുതിയ പദം ഒരു കുട്ടിയുടെ ബുക്കിൽ കുട്ടി എഴുതി

കാണിക്കുന്നു. മച്ചമ്പി+ആണ് -മച്ചമ്പിയാണ്).

- അധ്യാപിക : ഈ വാക്കുകൾ തമ്മിൽ ചേർത്തെഴുതിയപ്പോൾ അക്ഷരങ്ങൾക്ക് എന്തുമാറ്റം ഉണ്ടായി?
- കുട്ടികൾ : ഒരു അക്ഷരം പുതുതായി വന്നു.
- അധ്യാപിക : ഇങ്ങനെ കുട്ടിയെഴുതുമ്പോൾ ഒക്ഷരം പുതുതായി വരുന്ന മറ്റു പദങ്ങൾ നിങ്ങൾക്ക് തന്നിരിക്കുന്ന ഖണ്ഡികയിൽ നിന്ന് കണ്ടുപിടിച്ച് പുസ്തകത്തിൽ എഴുതുക.

(കുട്ടികൾ പരസ്പരം ചർച്ചചെയ്ത് എഴുതാൻ തുടങ്ങുന്നു. അധ്യാപിക 'വള്ളത്തോൾ' ഗ്രൂപ്പിന്റെ അടുത്തേക്ക് നീങ്ങുന്നു).

- അധ്യാപിക : (കുട്ടികൾ എഴുതി വെച്ചിട്ടുള്ളതിൽനിന്ന് ഒരു വാക്ക് (കൈപ്പത്തി) ചൂണ്ടികാണിച്ചുകൊണ്ട്) ഇതൊന്ന് പിരിച്ചെഴുതാമോ?

('വള്ളത്തോൾ' ഗ്രൂപ്പിലെ കുട്ടികൾ തമ്മിൽ ആലോചിച്ച് പിരിച്ചെഴുതി കാണിക്കുന്നു. കൈ+പത്തി).

- അധ്യാപിക : പിരിച്ചെഴുതിയതിൽ ഏതെല്ലാം വാക്കുകൾ ഉണ്ട്?
- കുട്ടികൾ : കൈ, പത്തി

(അധ്യാപിക കുട്ടികൾ പിരിച്ചെഴുതിയ വാക്ക് ഒരു കുട്ടിയുടെ ബുക്കിൽകുട്ടിയെഴുതി കാണിക്കുന്നു. കൈ +പത്തി - കൈപ്പത്തി)

- അധ്യാപിക : ഈ വാക്കുകൾ തമ്മിൽ ചേർത്തെഴുതിയപ്പോൾ അക്ഷരങ്ങൾക്ക് എന്തുമാറ്റം ഉണ്ടായി.
- കുട്ടികൾ : ഒരു അക്ഷരം ഇരട്ടിച്ചു.
- അധ്യാപിക : ഇങ്ങനെ കുട്ടിയെഴുതുമ്പോൾ അക്ഷരം ഇരട്ടിക്കുന്ന മറ്റു പദങ്ങൾ നിങ്ങൾക്ക് തന്നിരിക്കുന്ന ഖണ്ഡികയിൽ നിന്ന് കണ്ടുപിടിച്ച് പുസ്തകത്തിൽ എഴുതുക

(കുട്ടികൾ പരസ്പരം ചർച്ച ചെയ്ത് എഴുതാൻ തുടങ്ങുന്നു. അധ്യാപിക 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പിന്റെ അടുത്തേക്ക് നീങ്ങുന്നു).

- അധ്യാപിക : (കുട്ടികൾ എഴുതിവെച്ചിട്ടുള്ളതിൽ നിന്ന് ഒരു വാക്ക് (സന്തോഷ മായി) ചൂണ്ടികാണിച്ചുകൊണ്ട് ഇതൊന്ന് പിരിച്ചെഴുതാമോ?

('ചങ്ങമ്പുഴ' ഗ്രൂപ്പിലെ കുട്ടികൾ തമ്മിൽ ആലോചിച്ച് പിരിച്ചെഴുതി കാണിക്കുന്നു. സന്തോഷം+ആയി).

- അധ്യാപിക : പിരിച്ചെഴുതിയതിൽ ഏതെല്ലാം വാക്കുകൾ ഉണ്ട്?
- കുട്ടികൾ : സന്തോഷം, ആയി

(അധ്യാപിക കുട്ടികൾ പിരിച്ചെഴുതിയ വാക്ക് ഒരു കുട്ടിയുടെ ബുക്കിൽ കുട്ടിയെഴുതികാണിക്കുന്നു. സന്തോഷം +ആയി - സന്തോഷമായി)

അധ്യാപിക : ഈ വാക്കുകൾ തമ്മിൽ ചേർത്തെഴുതിയപ്പോൾ അക്ഷരങ്ങൾക്ക് എന്തുമാറ്റം ഉണ്ടായി?

കുട്ടികൾ : ഒരക്ഷരം പോയിട്ട് വേറൊരക്ഷരം വന്നു.

അധ്യാപിക : ഇങ്ങനെ കുട്ടിയെഴുതുമ്പോൾ ഒരക്ഷരം പോയി പകരം വേറൊരക്ഷരം വരുന്ന പദങ്ങൾ നിങ്ങൾക്ക് തന്നിരിക്കുന്ന ഖണ്ഡികയിൽനിന്ന് കണ്ടുപിടിച്ച് പുസ്തകത്തിൽ എഴുതുക.

(അധ്യാപിക ഓരോ ഗ്രൂപ്പും എഴുതുന്നത് പരിശോധിക്കുന്നു. അല്പസമയത്തിനുശേഷം 'ആശാൻ' ഗ്രൂപ്പിനോട് പറയുന്നു).

അധ്യാപിക : നിങ്ങൾ കണ്ടുപിടിച്ച മാറ്റം വന്ന പദങ്ങൾ ഏതെല്ലാമാണെന്നും അവയ്ക്ക് ഏതുവിധത്തിൽ മാറ്റം വന്നതാണെന്നും മറ്റു ഗ്രൂപ്പുകൾ കേൾക്കത്തക്ക വിധത്തിൽ ഉച്ചത്തിൽ പറയുക.

കുട്ടികൾ : രണ്ടുപദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരു അക്ഷരം നഷ്ടപ്പെടുന്ന പദങ്ങളാണ് ഞങ്ങൾ എഴുതിയിട്ടുള്ളത്.

('ആശാൻ' ഗ്രൂപ്പിലെ കുട്ടികൾ ഉദാഹരണമായി എഴുതിയ പദങ്ങൾ വായിക്കുന്നു. ഓരോന്നിലും ഏതക്ഷരമാണ് നഷ്ടപ്പെട്ടതെന്ന് പറയുന്നു).

അധ്യാപിക : രണ്ടുപദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരക്ഷരം നഷ്ടപ്പെടുന്ന ഉദാഹരണപദം എഴുതിയ ചാർട്ട് കാണിക്കുന്നു).

അധ്യാപിക : രണ്ടു പദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരക്ഷരം നഷ്ടപ്പെടുന്ന പദങ്ങൾ ഓരോ ഗ്രൂപ്പും അവരവർക്ക് തന്നിട്ടുള്ള ഖണ്ഡികയിൽനിന്ന് കണ്ടുപിടിച്ച് പുസ്തകത്തിൽ എഴുതുക.

(കുട്ടികൾ ചർച്ച ചെയ്ത് എഴുതുന്നു. ഇതേസമയം 'ആശാൻ' ഗ്രൂപ്പ് എഴുതിയ ഉദാഹരണങ്ങൾ അധ്യാപിക പരിശോധിച്ച് തെറ്റ് തിരുത്തുന്നു. അല്പസമയത്തിനുശേഷം 'ഉള്ളൂർ' ഗ്രൂപ്പിനോട് പറയുന്നു).

അധ്യാപിക : നിങ്ങൾ കണ്ടുപിടിച്ച പദങ്ങൾ ഏതെല്ലാമാണെന്നും അവയ്ക്കു വന്നിട്ടുള്ള മാറ്റം എന്താണെന്നും മറ്റുള്ളവർ കേൾക്കത്തക്ക വിധത്തിൽ പറയുക.

'ഉള്ളൂർ' ഗ്രൂപ്പിലെ കുട്ടികൾ: രണ്ടു പദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരു പുതിയ അക്ഷരം പുറത്തുനിന്ന് വന്നു ചേരുന്ന വിധത്തിലുള്ള പദങ്ങളാണ് ഞങ്ങൾ എഴുതിയിട്ടുള്ളത്.

(‘ഉള്ളൂർ’ ഗ്രൂപ്പിലെ കുട്ടികൾ ഉദാഹരണമായി എഴുതിയ പദങ്ങൾ വായിക്കുന്നു. ഓരോന്നിലും ഏതക്ഷരമാണ് പുതുതായി വന്നതെന്ന് പറഞ്ഞുകൊടുക്കുന്നു).

(അധ്യാപിക രണ്ടു പദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരക്ഷരം പുതുതായി വരുന്ന വിധത്തിലുള്ള ഉദാഹരണ പദം എഴുതിയ ചാർട്ട് കാണിക്കുന്നു).

അധ്യാപിക : രണ്ടുപദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരു പുതിയ അക്ഷരം പുറത്തു നിന്നു വന്നുചേരുന്ന വിധത്തിലുള്ള പദങ്ങൾ മറ്റ് മൂന്നു ഗ്രൂപ്പുകളും നിങ്ങൾക്ക് തന്നിട്ടുള്ള ഖണ്ഡികയിൽനിന്ന് കണ്ടുപിടിച്ച് എഴുതുക.

(കുട്ടികൾ ചർച്ചചെയ്ത് എഴുതുന്നു. ഇതേസമയം ‘ഉള്ളൂർ’ ഗ്രൂപ്പ് എഴുതിയ ഉദാഹരണങ്ങൾ അധ്യാപിക പരിശോധിച്ച് തെറ്റ് തിരുത്തുന്നു. അല്പസമയത്തിനുശേഷം ‘വള്ളത്തോൾ’ ഗ്രൂപ്പിനോട് പറയുന്നു).

അധ്യാപിക : നിങ്ങൾ കണ്ടുപിടിച്ച പദങ്ങൾ ഏതെല്ലാമാണെന്നും അവയ്ക്കു വന്നിട്ടുള്ള മാറ്റം എന്താണെന്നും മററുള്ളവർ കേൾക്കത്തക്ക വിധത്തിൽ പറയുക.

‘വള്ളത്തോൾ’ ഗ്രൂപ്പിലെ കുട്ടികൾ : രണ്ടു പദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരക്ഷരം ഇരട്ടിക്കുന്ന വിധത്തിലുള്ള പദങ്ങളാണ് ഞങ്ങളെഴുതിയത്.

(‘വള്ളത്തോൾ’ ഗ്രൂപ്പിലെ കുട്ടികൾ ഉദാഹരണമായെഴുതിയ പദങ്ങൾ വായിക്കുന്നു. ഏതക്ഷരമാണ് ഓരോന്നിലും ഇരട്ടിച്ചതെന്ന് വിശദീകരിക്കുന്നു).

(അധ്യാപിക രണ്ടുപദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരക്ഷരം ഇരട്ടിക്കുന്ന വിധത്തിലുള്ള ഉദാഹരണപദം എഴുതിയ ചാർട്ട് കാണിക്കുന്നു).

അധ്യാപിക : രണ്ടു പദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരക്ഷരം ഇരട്ടിക്കുന്ന വിധത്തിലുള്ള പദങ്ങൾ ഓരോത്തരും നിങ്ങൾക്ക് തന്നിട്ടുള്ള ഖണ്ഡികയിൽ നിന്ന് കണ്ടുപിടിച്ചെഴുതുക.

(കുട്ടികൾ ചർച്ച ചെയ്ത് എഴുതുന്നു. ഇതേസമയം അധ്യാപിക ‘വള്ളത്തോൾ’ ഗ്രൂപ്പ് എഴുതിയ ഉദാഹരണങ്ങൾ പരിശോധിച്ച് തെറ്റ് തിരുത്തുന്നു. അല്പസമയത്തിനുശേഷം ‘ചങ്ങമ്പുഴ’ ഗ്രൂപ്പിനോട് പറയുന്നു).

അധ്യാപിക : നിങ്ങൾ കണ്ടുപിടിച്ച പദങ്ങൾ ഏതെല്ലാമാണെന്നും അവയ്ക്കു വന്നിട്ടുള്ള മാറ്റം എന്താണെന്നും എല്ലാവരും കേൾക്കത്തക്ക വിധത്തിൽ പറയുക.

‘ചങ്ങമ്പുഴ’ ഗ്രൂപ്പിലെ കുട്ടികൾ : രണ്ടു പദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരക്ഷരം പോയി ആ സ്ഥാനത്ത് മറ്റൊരക്ഷരം വന്നു ചേരുന്ന വിധത്തിലുള്ള പദങ്ങളാണ് ഞങ്ങളെഴുതിയത്.

(കുട്ടികൾ അവരെഴുതിയ ഉദാഹരണങ്ങൾ വായിക്കുന്നു. ഏതക്ഷരം പോയി ഏതക്ഷരം വന്നുവെന്ന് വ്യക്തമാക്കുന്നു. തൽസ്ഥാനത്ത് അധ്യാപിക രണ്ടു പദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ മറ്റൊരക്ഷരം വരുന്ന ഉദാഹരണപദം എഴുതിയ ചാർട്ട് കാണിക്കുന്നു).

അധ്യാപിക : രണ്ടു പദങ്ങൾ തമ്മിൽ ചേരുമ്പോൾ ഒരക്ഷരം പോയി തൽസ്ഥാനത്ത് മറ്റൊരക്ഷരം വന്നു ചേരുന്ന വിധത്തിലുള്ള പദങ്ങൾ ഓരോരുത്തർക്കും തന്നിട്ടുള്ള ഖണ്ഡികയിൽനിന്ന് കണ്ടെത്തി എഴുതുക.

(കുട്ടികൾ ചർച്ച ചെയ്ത് എഴുതുന്നു. ഇതേ സമയം അധ്യാപിക ‘ചങ്ങമ്പുഴ’ ഗ്രൂപ്പ് എഴുതിയ ഉദാഹരണങ്ങൾ പരിശോധിക്കുന്നു).

(ഓരോ ഗ്രൂപ്പും എഴുതിയത് അധ്യാപിക പരിശോധിക്കുന്നു. ഓരോ ഗ്രൂപ്പും എത്ര പദങ്ങൾ വീതം എഴുതിയെന്ന് എല്ലാവരെയും അറിയിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാവരെയും അഭിനന്ദിക്കുന്നു).

അധ്യാപിക : കുട്ടിച്ചേർക്കുമ്പോൾ പദങ്ങൾക്ക് മാറ്റം വരുന്നത് നിങ്ങൾ കണ്ടുവല്ലോ. ഇങ്ങനെ കുട്ടിയെഴുതുമ്പോൾ പദങ്ങൾക്കുണ്ടാകുന്ന മാറ്റത്തിന് സന്ധി എന്നു പറയും.

PHASE 4

(ഓരോ ഗ്രൂപ്പും എഴുതിയ ഉദാഹരണങ്ങൾ അവരെകൊണ്ട് വീണ്ടും പറയിക്കുന്നു).

അധ്യാപിക : ‘ആശാൻ’ ഗ്രൂപ്പ് എഴുതിയ ഒരു ഉദാഹരണം പിരിച്ച് പറയുക.

കുട്ടികൾ : അവരെഴുതിയ ഉദാഹരണം പറയുന്നു.

അധ്യാപിക : ഇത് ചേർത്തെഴുതിയപ്പോൾ എന്തുമാറ്റം ഉണ്ടായി

കുട്ടികൾ : ഒരക്ഷരം ഇല്ലാതായി

അധ്യാപിക : നഷ്ടപ്പെടുന്നതിന് അല്ലെങ്കിൽ ചെറുതായി വരുന്നതിന് മററു പേരു പറയാമോ?

അധ്യാപിക : അക്ഷരം ലോപിച്ചു എന്നു പറയാം. അപ്പോൾ ഒരക്ഷരം ലോപിക്കുന്ന സന്ധിക്ക് ലോപസന്ധി എന്നു പറയുന്നു.

- അധ്യാപിക : 'ഉള്ളൂർ' ഗ്രൂപ്പ് എഴുതിയ ഒരു ഉദാഹരണം പിരിച്ച് പറയുക.
(കുട്ടികൾ അവരെഴുതിയ ഉദാഹരണം പറയുന്നു).
- അധ്യാപിക : ഇത് ചേർത്തെഴുതിയപ്പോൾ എന്തുമാറ്റം ഉണ്ടായി?
കുട്ടികൾ : ഒരക്ഷരം പുതിയതായി വന്നു.
- അധ്യാപിക : വരുക എന്നതിന് മറ്റൊരു വാക്ക് പറയാമോ?
അധ്യാപിക : ഒരക്ഷരം പുതിയതായി വരുന്നതിന് ആഗമിക്കുക എന്നു പറയാം.
അപ്പോൾ അങ്ങനെ വരുന്ന സന്ധിയാണ് ആഗമസന്ധി.
- അധ്യാപിക : 'വള്ളത്തോൾ' ഗ്രൂപ്പ് എഴുതിയ ഒരു ഉദാഹരണം പിരിച്ച് പറയുക
(കുട്ടികൾ അവരെഴുതിയ ഉദാഹരണം പറയുന്നു).
- അധ്യാപിക : ഇത് ചേർത്തെഴുതിയപ്പോൾ മാറ്റം ഉണ്ടായി?
കുട്ടികൾ : ഒരക്ഷരം ഇരട്ടിച്ചു.
- അധ്യാപിക : ഇരട്ടിക്കുന്നതിന് മറ്റൊരു വാക്ക് പറയാമോ?
അധ്യാപിക : ദിത്വം എന്നു പറയാം. അങ്ങനെ ഒരക്ഷരം ഇരട്ടിക്കുന്ന സന്ധി
യാണ് ദിത്വസന്ധി.
- അധ്യാപിക : 'ചങ്ങമ്പുഴ' ഗ്രൂപ്പ് എഴുതിയ ഒരു ഉദാഹരണം പിരിച്ച് പറയുക
(കുട്ടികൾ അവരെഴുതിയ ഉദാഹരണം പറയുന്നു).
- അധ്യാപിക : ഇത് ചേർത്തെഴുതിയപ്പോൾ എന്തു മാറ്റം ഉണ്ടായി
കുട്ടികൾ : ഒരക്ഷരം പോയി പകരം മറ്റൊരക്ഷരം വന്നു.
- അധ്യാപിക : ഒന്നിനുപകരം മറ്റൊരക്ഷരം വരുന്നതിനെന്തു പേരു പറയാം?
അധ്യാപിക : ഒരക്ഷരം പോയി പകരം മറ്റൊരക്ഷരം വരുന്ന വിധത്തിലുള്ള
സന്ധിക്ക് ആദേശസന്ധി എന്നു പറയാം.

(എട്ടു പദങ്ങൾ എഴുതിയ ഓരോ പേപ്പറുകൾ ഓരോ ഗ്രൂപ്പിനും കൊടുക്കുന്നു. അതിലുള്ള പദങ്ങൾ പിരിച്ചെഴുതി അവ ഏതു സന്ധിയിൽപ്പെടുന്നു എന്നെഴുതാൻ പറയുന്നു).

പതിരില്ല
മരഞ്ചാടി
തിരുവുടൽ
കുട്ടിപ്പട്ടർ
കടമായി
കുഴിയാന
കഞ്ഞിപ്പട്ടി
പോയെന്ന്

(കുട്ടികൾ എഴുതിയ ഉത്തരങ്ങൾ ഗ്രൂപ്പുകൾ പരസ്പരം പരിശോധിക്കാൻ ആവശ്യപ്പെടുന്നു. (ഒന്നു മൂന്നും ഗ്രൂപ്പുകൾ തമ്മിലും രണ്ടും നാലും ഗ്രൂപ്പുകൾ തമ്മിലും) കുട്ടികൾ പരിശോധിച്ച ഉത്തരങ്ങൾ അധ്യാപിക ഒന്നുകൂടി പരിശോധിച്ച് ഉറപ്പുവരുത്തിയശേഷം ആകെയുള്ളതിൽ എത്ര എണ്ണം വീതം ഓരോ ഗ്രൂപ്പും ശരിയാക്കി എന്ന് അറിയിക്കുന്നു. തെറ്റ് വന്നിട്ടുണ്ടെങ്കിൽ ഗ്രൂപ്പിലെ കുട്ടികളെകൊണ്ടുതന്നെ

തിരുത്തിക്കുന്നു. കാരണവും അവരെകൊണ്ട് പറയിപ്പിക്കുന്നു. നന്നായി പരിശ്രമിച്ചതിന് എല്ലാവരെയും അഭിനന്ദിക്കുന്നു).

അധ്യാപിക : എല്ലാവരും പാഠപുസ്തകം എടുക്കുക
(കുട്ടികൾ പാഠപുസ്തകം എടുക്കുന്നു)

അധ്യാപിക : നിങ്ങൾ പഠിച്ച പാഠഭാഗത്തുനിന്നു നാലു വിധത്തിലുള്ള സന്ധികളും പരസ്പരം ചർച്ചചെയ്യാതെ ഓരോരുത്തരും സ്വന്തമായി കണ്ടുപിടിച്ച് അവരവരുടെ ബുക്കിൽ എഴുതുക

(കുട്ടികൾ എഴുതി തുടങ്ങുന്നു. കുട്ടികൾ എഴുതിത്തീരുന്നതിനനുസരിച്ച് അധ്യാപിക ഓരോരുത്തരുടേയും പരിശോധിച്ച് തെറ്റ് തിരുത്തുകയും നന്നായി ചെയ്തതിന് അഭിനന്ദിക്കുകയും ചെയ്യുന്നു).



APPENDIX IV

UNIVERSITY OF CALICUT

DEPARTMENT OF EDUCATION

ACHIEVEMENT TEST IN MALAYALAM LANGUAGE SKILLS

Standard VI (Draft)

Dr.Kamala S. Pillai

Bindhu. C.M.

നിങ്ങൾക്ക് മലയാള ഭാഷയിലുള്ള പരിജ്ഞാനവും നൈപുണിയും പരിശോധിക്കുന്നതിനുള്ള ഒരു പരീക്ഷയാണിത്. വിവിധതരത്തിലുള്ള 60 ചോദ്യങ്ങൾ ഇതിൽ അടങ്ങിയിരിക്കുന്നു. ഓരോ പ്രധാന ചോദ്യത്തിനും കൊടുത്തിരിക്കുന്ന നിർദ്ദേശങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിച്ച് ഉചിതമായ ഉത്തരമെഴുതുക. ചോദ്യക്കടലാസ്സിൽ തന്നെ ഉത്തരം രേഖപ്പെടുത്തേണ്ടതാണ്.

നിർദ്ദേശങ്ങൾ: താഴെ കൊടുത്തിരിക്കുന്ന ഓരോ വാക്കിന്റെയും നേരെ A B C D എന്ന ക്രമത്തിൽ അതിന്റെ മൂന്നു പര്യായങ്ങളും പര്യായമല്ലാത്ത ഒരു പദവും കൊടുത്തിരിക്കുന്നു. പര്യായമല്ലാത്ത പദം കണ്ടുപിടിച്ച് അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനുചുറ്റും വൃത്തം വരയ്ക്കുക

ഉദാ:- രാജാവ് A. നൃപൻ B. അരാചൻ C. സമ്പന്നൻ D. ഭൂപൻ

സമ്പന്നൻ എന്ന പദം രാജാവിന്റെ പര്യായമല്ല. അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരം C ആണല്ലോ. അതുകൊണ്ട് C ക്ക് ചുറ്റും വൃത്തം വരച്ചു. ഇതുപോലെ ഓരോന്നും ചെയ്യുക.

- 1. പട്ടണം A. അന്തഃപുരം B. പുരം C. പത്തനം D. നഗരം
- 2. താമര A. കമലം B. നളിനം C. കുമ്പസാരം D. അംബുജം
- 3. സ്വർണ്ണം A. കാഞ്ചനം B. ഹിരണ്യം C. കനകം D. ദ്രുമം
- 4. തേൻ A. മരന്ദം B. തമിസ്രം C. മാക്ഷികം D. ക്ഷൗദ്രം.

നിർദ്ദേശങ്ങൾ : താഴെകൊടുത്തിരിക്കുന്ന വാക്കുകളുടെ വിപരീത പദം കണ്ടുപിടിക്കുക. ഓരോ വാക്കിനും A B C D എന്ന ക്രമത്തിൽ നാല് ഉത്തരങ്ങൾ കൊടുത്തി

രിക്കുന്നു. അതിൽ ഒന്നു മാത്രമാണ് ശരിയായ വിപരീത പദം. അതു കണ്ടുപിടിച്ച് അതിന്റെ നേരെയുള്ള ഇംഗ്ലീഷ് അക്ഷരത്തിനു ചുറ്റും വൃത്തം വരയ്ക്കുക.

ഉദാ:-അല്പം A. അധികം B. അനേകം C. അസംഖ്യം D. അനൽപം

അൽപം എന്നതിന്റെ ശരിയായ വിപരീതപദം അനൽപം എന്നതാണ്. അതിന്റെ ഇംഗ്ലീഷ് അക്ഷരം D ആണല്ലോ. അതിനാൽ Dയ്ക്ക് ചുറ്റും വൃത്തം വരച്ചു. ഇപ്രകാരം ഓരോന്നും ചെയ്യുക.

5. രക്ഷ A. ശിക്ഷ. B. സുശിക്ഷ C. സുരക്ഷ D. അരക്ഷ

6. ധർമ്മം A. അശാശ്വതം B. അധർമ്മം C. നാശകരം D. നഷ്ടകരം

7. സന്തോഷം A. അസന്തോഷം B. വിഷമം C. സന്താപം D. ദുഃഖം

8. പരിഷ്കൃതം A. പാമരം B.പൗരാണികം C. നവീനം D. അപരിഷ്കൃതം

നിർദ്ദേശങ്ങൾ: താഴെകൊടുത്തിരിക്കുന്ന ഓരോ വാക്കിന്റെയും നേരെ A B C D എന്ന ക്രമത്തിൽ നാല് അർത്ഥങ്ങൾ കൊടുത്തിരിക്കുന്നു. ഇതിൽ ഒന്നുമാത്രമാണ് ശരി. ഓരോ വാക്കിന്റെയും ശരിയായ അർത്ഥം കണ്ടുപിടിച്ച് അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനു ചുറ്റും വൃത്തം വരയ്ക്കുക

ഉദാ:- പരവശൻ

- A. അതിയായ ക്ഷീണമുള്ളവൻ B. അതിയായ ദുഃഖമുള്ളവൻ
- C. അതിയായ ചിന്തയുള്ളവൻ D. അതിയായ വിഷമമുള്ളവൻ

പരവശൻ എന്നത് അതിയായ ക്ഷീണമുള്ളവൻ എന്നതിന്റെ ഒറ്റ വാക്ക് ആണല്ലോ. അതിനാൽ അതിനെക്കുറിക്കുന്ന A എന്ന അക്ഷരത്തിനു ചുറ്റും വൃത്തം വരച്ചു. ഇതുപോലെ എല്ലാം ചെയ്യുക

9. ഉദ്ദിഷ്ടകാര്യം

- A. അറിഞ്ഞകാര്യം B. പറഞ്ഞകാര്യം C. ഉദ്ദേശിച്ച കാര്യം D. നടന്നകാര്യം

10. സമഭാവന

- A. ഒന്നുപോലെ ചെയ്യാനുള്ള കഴിവ് B. ഒന്നുപോലെ കാണാനുള്ള കഴിവ്
- C. ഒന്നുപോലെ പറയാനുള്ള കഴിവ് D. ഒന്നുപോലെ നിൽക്കാനുള്ള കഴിവ്

11. അനുദിനം

A. ദിവസംതോറും B. ദിവസം മുഴുവൻ C. ദിവസം മുൻപേ D. ദിവസം കഴിഞ്ഞ്

12. കവല

A. വഴികൾ പിരിയുന്ന സ്ഥലം B. വഴികൾ ഖണ്ഡിക്കുന്ന സ്ഥലം C. വഴികൾ ചേരുന്ന സ്ഥലം D. വഴികൾ ആരംഭിക്കുന്ന സ്ഥലം

നിർദ്ദേശങ്ങൾ: ഏതാനും ഖണ്ഡികകൾ താഴെ കൊടുത്തിരിക്കുന്നു. ഓരോ ഖണ്ഡികയും ശ്രദ്ധിച്ച് വായിക്കുക. അതിൽ പറഞ്ഞിരിക്കുന്ന ആശയം മനസ്സിലാക്കിയതിനുശേഷം ഖണ്ഡികയ്ക്ക് ഒരു തലക്കെട്ട് തീരുമാനിക്കുക. A B C D എന്ന ക്രമത്തിൽ നാലു തലക്കെട്ടുകൾ കൊടുത്തിരിക്കുന്നു. ഉചിതമായ തലക്കെട്ട് കണ്ടുപിടിച്ച് അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനു ചുറ്റും വൃത്തം വരയ്ക്കുക. അതിനു താഴെ കൊടുത്തിരിക്കുന്ന ചോദ്യത്തിന് ഖണ്ഡികയിൽ നിന്ന് ഉചിതമായ ഉത്തരം കണ്ടെത്തി എഴുതുക.

ബസ്സറാൻഡിലും റെയിൽവേ സ്റ്റേഷനിലും ആശുപത്രിയിലും മറ്റു പൊതു സ്ഥാപനങ്ങളിലുമൊക്കെ കാര്യസാധ്യത്തിനായി വരുന്നവർ എത്തുന്ന മുറയ്ക്ക് ഒരാളുടെ പിറകിൽ മറ്റൊരാൾ എന്ന ക്രമത്തിന് ക്യൂവായി നിൽക്കുന്നത് നല്ലതാണ്. ഉന്നതം തള്ളും ബഹുവുമില്ലാതെ എല്ലാപേർക്കും ഉദ്ദിഷ്ടകാര്യം സാധിക്കാൻ ഈ സമ്പ്രദായം സഹായിക്കും. പരസ്പരബഹുമാനവും സമഭാവനയും സഹിഷ്ണുതയും നിലനിർത്താനും സാധിക്കുന്നു. പരിഷ്കൃതസമൂഹത്തിലെ ഉത്തമ പൗരന്മാർ ഇത്തരം ചിട്ടകൾ പാലിച്ചേ തീരൂ. ഇതുപോലെയുള്ള പെരുമാറ്റച്ചട്ടങ്ങൾ മറ്റാരെങ്കിലും നിർബന്ധം കൊണ്ടോ നിയമം മൂലമോ അടിച്ചേൽപ്പിക്കുന്നതിനേക്കാൾ നല്ലത് സ്വയം നടപ്പിലാക്കുന്നതാണ്.

13. A. ചിട്ടകൾ B. പെരുമാറ്റച്ചട്ടങ്ങൾ C. ക്യൂ D. സഹിഷ്ണുത

14. ഏതു പെരുമാറ്റച്ചട്ടങ്ങളാണ് സ്വയം നടപ്പിലാക്കേണ്ടത്?

അതാ അടുത്ത കവലയിൽ നോക്കൂ. അവിടെ ഒരു ചെമ്മന്ന പ്രകാശം കാണുന്നില്ലേ? ചില ഭാഗങ്ങളിൽവാഹനഗതാഗതം നിയന്ത്രിക്കുന്നത് സ്വയം പ്രവർത്തിക്കുന്ന ഇത്തരം വിളക്കുകൾ മുഖേനയാണ്. വാഹനങ്ങൾ പോകരുത് എന്ന് കാണിക്കാനാണ് ചെമ്മന്ന വിളക്ക് പ്രകാശിപ്പിക്കുന്നത്. ചെമ്മന്ന വെളിച്ചം തെളിഞ്ഞതുകണ്ടാൽ ആ

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വശത്തുള്ള വാഹനങ്ങൾ നിർത്തണം. പുറപ്പെടാൻ തയ്യാറാകാനുള്ള സൂചനയാണ് മഞ്ഞവെളിച്ചം. പച്ചവെളിച്ചം കണ്ടാൽ വാഹനങ്ങൾക്കു മുന്നോട്ടുപോകാം. സ്വയം പ്രവർത്തിക്കുന്ന ഇത്തരം വിളക്കുകൾക്ക് ഓട്ടോ മാറിക് ട്രാഫിക് ലൈറ്റുകൾ എന്നു പറയും. വാഹനങ്ങൾ ഓടിക്കുന്നവർ ഈ സൂചനകൾ എല്ലാം നിർബന്ധമായും അനുസരിക്കണം.

- 15. A. ട്രാഫിക് ലൈറ്റുകൾ B. വാഹനഗതാഗത നിയന്ത്രണം C. സൂചന
- D. ഓട്ടോ മാറിക് ലൈറ്റുകൾ

16. പച്ച, മഞ്ഞ, ചുവപ്പ് വിളക്കുകൾ തെളിയുമ്പോൾ വാഹനങ്ങൾ എന്താണ് ചെയ്യേണ്ടത്?

തിരക്കുള്ള റോഡുകളിൽ നടപ്പാതകളിലൂടെ മാത്രമേ പദയാത്രികർ നടക്കാവൂ. റോഡിൽ കുറുകെ വെളുത്ത വരകൾ വരച്ചിട്ടുണ്ട്. ആ സ്ഥലത്തുകൂടിയാണ് റോഡു മുറിച്ചു കടക്കേണ്ടത്. സീബ്രാ വരകൾ എന്നറിയപ്പെടുന്ന ഈ വരകളിലൂടെ മുറിച്ചു കടന്നാൽ നാം സുരക്ഷിതരായി മറുവശത്തെത്തും. നടന്നുപോകുന്ന പദയാത്രികർക്കുവേണ്ടിയുള്ളതാണിത്. ട്രാഫിക് പോലീസുകാരൻ വാഹനങ്ങളെയെല്ലാം തടഞ്ഞിട്ട് കാൽനടയാത്രക്കാർക്ക് റോഡുമുറിച്ചു കടക്കാനുള്ള സൗകര്യമുണ്ടാക്കിത്തരും. ഈ വരകൾ ഇല്ലാത്ത സ്ഥലങ്ങൾ റോഡുമുറിച്ചു കടക്കാൻ ഇരുവശത്തുനിന്നും വാഹനങ്ങൾ വരുന്നില്ലെന്ന് ഉറപ്പുവരുത്തിയശേഷം മാത്രമേ പാടുള്ളൂ. കൂടുതൽ വാഹനത്തിരക്കുള്ള റോഡുകളിൽ ഇത്തരം സീബ്രാ വരകൾ ഉണ്ടായിരിക്കും.

- 17. A. വരകൾ B. നടപ്പാത C. പദയാത്രികർ D. സീബ്രാ വരകൾ

18. റോഡു മുറിച്ചു കടക്കുമ്പോൾ എന്തെല്ലാം കാര്യങ്ങൾ ശ്രദ്ധിക്കണം?.

ഗതാഗത നിയമങ്ങൾ എല്ലായിടത്തും എല്ലാവരും പാലിക്കണം. റോഡിൽ എപ്പോഴും വലതുവശം ചേർന്നേ നടക്കാവൂ. കൂട്ടം കൂടിയും തോളിൽ കൈയിട്ടും കൈകോർത്തു പിടിച്ചും ഒരിക്കലും റോഡിലൂടെ നടക്കരുത്. റോഡിന്റെ മധ്യത്തിലൂടെ യാത്ര

ചെയ്യരുത്. ബസ്സിൽ തുങ്ങിനിന്ന് യാത്ര ചെയ്യരുത്. പിടിവിട്ടു പോയാൽ പിന്നാലെ വരുന്ന വാഹനത്തിന്റെ അടിയിൽ പെടും. വാഹനങ്ങളുടെ ചവിട്ടുപിടിയിൽ നിന്ന് യാത്ര ചെയ്യുന്നത് അപകടകരമാണ്. ബസ്സിൽ യാത്ര ചെയ്യുമ്പോൾ കൈയും തലയും പുറത്തിടരുത്. ശ്രദ്ധിക്കാതെ കൈയും തലയും പുറത്തിട്ടാൽ പാഞ്ഞു പോകുന്ന മറ്റു വാഹനങ്ങളിലോ വഴിയരികിലെ തൂണുകളിലോ തട്ടി അപകടം പറയും.

- 19. A. റോഡപകടം. B. ഗതാഗതനിയമങ്ങൾ C. കൈയും തലയും പുറത്തിടരുത്. D. ഉത്തരവുകൾ

20. ബസ്സിൽ യാത്ര ചെയ്യുമ്പോൾ ശ്രദ്ധിക്കേണ്ട കാര്യങ്ങളെന്തെല്ലാം?

പഴഞ്ഞാലിറോഡിൽ വലിച്ചെറിയരുത്. നടന്നുപോകുന്ന യാത്രക്കാർ വഴുതി വീഴുക മാത്രമല്ല പൊതു നിരത്തുകൾ വൃത്തികേടാകുകയും ചെയ്യും. പൊതു നിരത്തുകൾ എപ്പോഴും ശുചിയായി സൂക്ഷിക്കണം. പല പരിഷ്കൃത രാജ്യങ്ങളിലും റോഡിൽ തുപ്പുകയോ ചവറുകൾ വലിച്ചെറിയുകയോ ചെയ്യുന്നവരെ ശിക്ഷിക്കാറുണ്ട്. നിരത്തുകളിൽ ചിലേടത്ത് വീപ്പുകളും കുമ്പളകളും വെച്ചിട്ടുണ്ടാകും. ചപ്പു ചവറുകൾ അതിൽ ഇട്ടാൽ നിരത്തുകൾ വൃത്തികേടാകാതെ സൂക്ഷിക്കാം. ക്ലാസുമുറികളിലും ഓഫീസുകളിലും വീടുകളിലും ചപ്പു ചവറുകൾ നിക്ഷേപിക്കാൻ ചവറു കുട്ടകൾ വയ്ക്കുന്നത് നല്ലതാണ്.

- 21. A. പൊതു നിരത്തുകൾ ശുചിയായി സൂക്ഷിക്കണം. B. പരിഷ്കൃത രാജ്യ നിയമങ്ങൾ C. ചവറുകുട്ടകളുടെ ഉപയോഗം D. ചപ്പു ചവറുകളുടെ നിക്ഷേപം.

22. നിരത്തുകൾ വൃത്തിയാക്കി സൂക്ഷിക്കാൻ നാം എന്തെല്ലാം കാര്യങ്ങൾ ചെയ്യണം?

നിർദ്ദേശങ്ങൾ: താഴെ കൊടുത്തിരിക്കുന്ന ഓരോ ചോദ്യത്തിനും A B C D എന്ന ക്രമത്തിൽ നാല് ഉത്തരങ്ങളുണ്ട്. ശരിയായ ഉത്തരം കണ്ടുപിടിച്ച് അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനുചുറ്റും വൃത്തം വരയ്ക്കുക.

23. താഴെ കൊടുത്തിട്ടുള്ളവയിൽ ആദേശ സന്ധിക്ക് ഉദാഹരണം അല്ലാത്തതേത്?

- A. റ്റെന്റണി B. വണ്ടിണ C. വിണ്ടലം D. ചെഞ്ചായം

24. താഴെ പറയുന്നവയിൽ 'വഴിയമ്പലം' എന്ന പദത്തിന്റെ സന്ധിയേത്?

- A. ദിത്യാസന്ധി B. ആഗമസന്ധി C. ലോപസന്ധി D. ആദേശസന്ധി

25. താഴെകൊടുത്തിട്ടുള്ളവയിൽ ദിത്യാസന്ധിക്ക് ഉദാഹരണം അല്ലാത്തതേത്?

- A. ഓടിത്തുടങ്ങി B. ഇമ്മാതിരി C. കുട്ടിപ്പട്ടർ D. ധനത്തിൽ

26. 'പുണ്ടനൽപം' താഴെ പറയുന്നവയിൽ ഏതു സന്ധിയാണ്?

- A. ലോപസന്ധി B. ദിത്യാസന്ധി C. ആഗമസന്ധി D. ആദേശസന്ധി

നിർദ്ദേശങ്ങൾ: കാസററ് കേട്ടതിനുശേഷം ചോദിക്കുന്ന ചോദ്യങ്ങൾക്ക് അതിനു വേണ്ടി പ്രത്യേകം കൊടുത്തിരിക്കുന്ന സ്ഥലത്ത് ഉത്തരം എഴുതുക

ഒരു വട്ടം കൂടിയാപ്പഴയവിദ്യാലയ-

ത്തിരുമുറ്റത്തെത്തുവാൻ മോഹം!

തിരുമുറ്റത്തൊരു കോണിൽ നില്ക്കുന്നൊരാനെല്ലി-

മരമൊന്നുലുത്തുവാൻ മോഹം!

അടരുന്ന കായ്മണികൾ പൊഴിയുമ്പോൾ, ചെന്നെടു-

ത്തതിലൊന്നു തിന്നുവാൻ മോഹം!

സുഖമെഴും കയ്പും പുളിപ്പും മധുരവും

നുകരുവാനിപ്പോഴും മോഹം!

തൊടിയിലെക്കിണർവെള്ളം കോരിക്കുടിച്ചെന്തു-

മധുരം! എന്നോതുവാൻ മോഹം!

വെറുതെയിരുന്നതോകുയിലിന്റെ പാട്ടുകേ-

ട്ടെതിർപാട്ടു പാടുവാൻ മോഹം!

അതുകേൾക്കെയുച്ചത്തിൽ കൂകും കുയിലിന്റെ

ശ്രുതി പിൻതുടരുവാൻ മോഹം!

ഒരു മയിൽപ്പീലി ഞാനിന്നു കാണുമ്പോഴും

ഒരു കുട്ടിയാകുവാൻ മോഹം!

27. എവിടെ എത്തുവാനാണ് കവിയ്ക്ക് മോഹം?

28. കായ്മണികൾ അടരുന്നതു കണ്ടപ്പോൾ കവിക്കുണ്ടായ മോഹമെന്ത്?

29. തൊടിയിലെ കിണർ വെള്ളത്തിന് മധുരം തോന്നുന്നതെപ്പോൾ?

30. കവിയ്ക്ക് ഇങ്ങനെയുള്ള മോഹങ്ങളുണ്ടാവാൻ കാരണമെന്ത്?

കലിംഗ രാജ്യത്തെക്കുറിച്ച് നിങ്ങൾ കേട്ടിരിക്കുമല്ലോ. പഴയ കലിംഗ രാജ്യമാണ് ഇന്നത്തെ ഒറീസ്സാ സംസ്ഥാനം. ഒറീസ്സായുടെ വിവിധ ഭാഗങ്ങളിലും തലസ്ഥാനമായ ഭുവനേശ്വറിലും ചെറുതും വലുതുമായി നിരവധി ക്ഷേത്രങ്ങളുണ്ട്. ഭുവനേശ്വറിനെ ക്ഷേത്രനഗരം എന്നു പറയാറുണ്ട്. അവിടെയുള്ള അനേകം ക്ഷേത്രങ്ങളിൽ ഏറ്റവും വലുത് ലിംഗരാജ ക്ഷേത്രമാണ്. സമുദ്രതീരത്തുള്ള അതിപുരാതനവും പ്രസിദ്ധവുമായ പുരിയിലെ ജഗന്നാഥക്ഷേത്രവും അവിടുത്തെ രമോത്സവവും ലോകപ്രശസ്തിയാർജ്ജിച്ചിട്ടുണ്ട്. അശോകചക്രവർത്തി കലിംഗയുദ്ധം നടത്തിയ സ്ഥലത്ത് സ്ഥാപിച്ചിട്ടുള്ള ശാന്തിസ്തൂപം വാസ്തുകലയുടെ മനോഹാരിത വിളിച്ചറിയിയ്ക്കുന്നു. പുരിയിൽനിന്ന് 35 കിലോമീറ്റർ അകലെ വടക്കുകിഴക്കു ഭാഗത്താണ് കൊണാർക്ക് സൂര്യക്ഷേത്രം സ്ഥിതിചെയ്യുന്നത്. ഇവിടെ ശില്പകലാവൈചിത്ര്യം കലാസന്ദേഹികളെ നിത്യവും ആകർഷിച്ചുകൊണ്ടിരിക്കുന്നവയാണ്. അർക്കക്ഷേത്രം, പത്മക്ഷേത്രം, കറുത്തഗോപുരം എന്നൊക്കെ വിളിക്കപ്പെടുന്ന കൊണാർക്കിൽ നാലായിരം കൊല്ലത്തിലധികം പഴക്കമുണ്ടെന്നാണ് ഐതിഹ്യം. ഇവിടെ സൂര്യദേവന്റെ ക്ഷേത്രമുണ്ടായതിനെ കുറിച്ച് സാംബപുരാണത്തിൽ സൂചനയുണ്ട്.

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31. ഭൂവനേശ്വറിനെ ക്ഷേത്രനഗരം എന്നു പറയുന്നതെന്തുകൊണ്ട്?

32. പുരിയുടെ പ്രത്യേകതകൾ എന്ത്?

33. കൊണാർക്ക് ക്ഷേത്രം മറ്റു ക്ഷേത്രങ്ങളിൽനിന്ന് എങ്ങനെ വ്യത്യാസപ്പെട്ടിരിക്കുന്നു?

34. കലിംഗ രാജ്യവും ഒറീസ്സയും തമ്മിലുള്ള ബന്ധം എന്ത്?

നിർദ്ദേശങ്ങൾ: കാസറിലൂടെ നിങ്ങൾ കേട്ട കവിതയുടെ ആശയം സ്വന്തംവാക്യത്തിൽ എഴുതുക.

35. അങ്കണത്തെമാവിൽ നിന്നാദ്യത്തെപ്പഴം വീഴ്കെയമ്മതൻ നേത്രത്തിൽ നിന്നുതിർന്നു ചുട്ടുകണ്ണീർ നാലുമാസത്തിൽ മുമ്പിലേറെനാൾ കൊതിച്ചിട്ടി-ബ്ബാലമാകനം പൂവിട്ടുണ്ണികൾ വിരിയവേ.

നിർദ്ദേശങ്ങൾ: കാസറിലൂടെ കേട്ടതിന്റെ ആശയം സ്വന്തം വാചകത്തിൽ താഴെ യുള്ള സ്ഥലത്ത് എഴുതുക

36. ഹിപ്പോപൊട്ടാമസ് ഒരു നിരുപദ്രവ ജീവിയാണ്. കുഞ്ഞുങ്ങൾ കൂടെയുണ്ടെങ്കിൽ ആപൽക്കാരിയും. വെള്ളത്തിൽ അവൻ ശത്രുക്കളൊന്നുമില്ല. എന്നാൽ കരയിൽക്കയറിക്കിടക്കുമ്പോൾ മറ്റൊരിരയും കിട്ടാത്ത സിംഹം ആ വഴിക്കുവന്നുവെങ്കിൽ അവനെ പിടികൂടാതിരിക്കുകയുമില്ല. ഹിപ്പോ അത്രവേഗത്തിൽ വഴങ്ങിക്കൊടുക്കുകയില്ല. തേററകൊണ്ടും നഖങ്ങൾക്കൊണ്ടും ഒരു ദീർഘസമരം അവിടെവെച്ചു നടക്കും. നൈൽ നദിയിലൂടെ സഞ്ചരിക്കുമ്പോൾ അടുത്തുള്ളകരയിൽ ഇത്തരം ഹരി ഹിപ്പോ സമരങ്ങൾ നടക്കുന്നതു ചിലപ്പോൾ കാണാം.

നിർദ്ദേശങ്ങൾ: താഴെകൊടുത്തിരിക്കുന്ന ഉദാഹരണം വായിക്കുക. ഉദാഹരണമായി തന്നിരിക്കുന്ന വാചകത്തെ മറ്റൊരു തരത്തിൽ ക്രമീകരിച്ച് എഴുതിയിരിക്കുന്ന 'മാതൃക'യും കൊടുത്തിരിക്കുന്നു. തന്നിരിക്കുന്ന നാലു വാചകങ്ങളെ 'മാതൃക' യിൽ ക്രമീകരിച്ച് എഴുതിയതുപോലെ എഴുതുക. ഓരോ വാചകത്തിന്റെയും താഴെയുള്ള സ്ഥലത്ത് ഉത്തരം എഴുതാവുന്നതാണ്.

ഉദാ: വിളക്കുകൾ സ്വയം പ്രകാശിക്കുന്നു

മാതൃക: സ്വയം പ്രവർത്തിക്കുന്ന വിളക്കുകൾ

37. വാഹനങ്ങൾ കടന്നു പോകുന്നു.

38. വാഹനങ്ങൾ നിർത്തിയിരിക്കുന്നു

39. പാദചാരികൾ റോഡു മുറിച്ചു കടക്കുന്നു

40 റോഡിൽ സീബ്രാ വരകൾ ഇട്ടിരിക്കുന്നു

നിർദ്ദേശങ്ങൾ: രണ്ടു വിഷയങ്ങൾ താഴെ കൊടുത്തിട്ടുണ്ട്. അവയെക്കുറിച്ച് അഞ്ചു വാചകം വീതം എഴുതുക. വിഷയത്തിനു താഴെയുള്ള സ്ഥലത്ത് എഴുതാവുന്നതാണ്.

41. ഞാൻ കണ്ട് നഗരം

42. നിങ്ങൾ ഒരു ട്രാഫിക് പോലീസുകാരനായാൽ

നിർദ്ദേശങ്ങൾ: താഴെകൊടുത്തിരിക്കുന്ന പദ്യം വായിച്ച് അതിലെ ആശയം സ്വന്തം വാചകത്തിൽ എഴുതുക. പദ്യത്തിനു താഴെയുള്ള സ്ഥലത്ത് ഉത്തരം എഴുതാവുന്നതാണ്.

43. വാൽസല്യരത്നത്തെ വയ്പാൻ -മമ
വാച്ചൊരു കാഞ്ചന ചെപ്പോ
ദൃഷ്ടിക്കുവച്ചോരമൃതോ - കുരി
രുട്ടത്തു വച്ച വിളക്കോ.

44. നന്മവിളയും നിലമോ-ബഹു
ധർമ്മങ്ങൾ വാഴും ഗൃഹമോ
ദാഹം കളയും ജലമോ - മാർഗ്ഗ
വേധം കളയും തണലോ.

നിർദ്ദേശങ്ങൾ: താഴെ കൊടുത്തിരിക്കുന്ന സംഭാഷണത്തിന്റെ ആശയം നാലു
വാചകത്തിൽ എഴുതുക. ഉത്തരം എഴുതാൻ പ്രത്യേകം സ്ഥലം കൊടുത്തിട്ടുണ്ട്.

- 45. **ടീച്ചർ** : നോക്കൂ ഇപ്പോൾ നമ്മുടെ വണ്ടി ഒരു ഭാഗത്തേക്കു മാത്രം സഞ്ചരിക്കാവുന്ന റോഡിലൂടെയാണു പോകുന്നത്.
- റാല** : എതിർ ഭാഗത്തുനിന്നും ഇങ്ങോട്ട് വണ്ടികൾ വരികയില്ലേ ടീച്ചർ?
- ടീച്ചർ** : ഈ റോഡിലൂടെ ഇങ്ങോട്ടു വരികയില്ല. ഇങ്ങോട്ടു വരേണ്ട മറ്റൊരു റോഡാണ് ഉപയോഗിക്കുന്നത്. ഇങ്ങനെ ഒരു വശത്തേക്കു മാത്രമേ വണ്ടികൾ ഓടിക്കാൻ പാടുള്ളൂ എന്നു പറയുന്നു. പ്രധാനപട്ടണങ്ങളിലെ വാഹനതിരക്കു കുറയ്ക്കാൻ ചില നിരത്തുകൾ ഇങ്ങനെ വൺവേയാക്കി മാറ്റിയിട്ടുണ്ട്.

- 46. ശുഭ : റോഡിന്റെ മറുഭാഗത്താണ് ഡ്രൈവ് ചെയ്യുന്ന ഹോട്ടൽ. ഇത്ര തിരക്കുള്ളപ്പോൾ നാമെങ്ങനെ റോഡുമുറിച്ചു കടക്കും? വണ്ടികൾ പാഞ്ഞുവരുന്നതു കാണുമ്പോൾ ഭയം തോന്നുന്നു. ഞങ്ങൾ അങ്ങോട്ട് ഓടിപ്പോകട്ടെ?
- സാമുവൽസാർ : പറില്ല. വണ്ടിയിൽനിന്നു വരിയായി ഇറങ്ങി വരിക. അല്പദൂരം ഈ നടപ്പാതയിലൂടെ മുന്നോട്ടു നടക്കാം.
- ശുഭ : അപ്പുറത്തു കാണുന്ന ഹോട്ടലിൽ പോകാൻ നാമിവിടെ വെച്ച് റോഡുകടന്നാൽ പോരെ സാർ?
- സാമുവൽസാർ : പറില്ല. അതാ നോക്കൂ, കുറച്ചുകലയായി റോഡിൽ കുറുകെ വെളുത്ത വരകൾ വരച്ചിട്ടുണ്ടല്ലോ. ആ സ്ഥലത്തുകൂടിയാണ് റോഡുമുറിച്ചു കടക്കേണ്ടത്. സീബ്രാ വരകൾ എന്നാണ് ആ വരകൾ അറിയപ്പെടുന്നത്. അതിലൂടെ മുറിച്ചു കടന്നാൽ സുരക്ഷിതരായി മറുവശത്തെത്തും.
- റാല : ഈ വരകൾ ഇല്ലാത്ത സ്ഥലങ്ങളിൽ റോഡുമുറിച്ചു കടക്കുന്നതോ?
- സാമുവൽസാർ : ഇരുവശത്തുനിന്നും വാഹനങ്ങൾ വരുന്നില്ലെന്ന് ഉറപ്പുവരുത്തിയശേഷമേ പാടുള്ളൂ. നഗരങ്ങളിൽ പ്രത്യേകിച്ച് കൂടുതൽ വാഹനത്തിരക്കുള്ള റോഡുകളിൽ ഇത്തരം സീബ്രാ വരകൾ ഉണ്ടായിരിക്കും.

നിർദ്ദേശങ്ങൾ: രണ്ടു ഖണ്ഡികകൾ താഴെ കൊടുത്തിരിക്കുന്നു. അത് ശ്രദ്ധാപൂർവ്വം വായിച്ച് ആശയം നഷ്ടമാകാതെ സംഗ്രഹിക്കുക. പ്രത്യേകം കൊടുത്തിരിക്കുന്ന സ്ഥലത്ത് ഉത്തരം എഴുതുവാൻ ശ്രദ്ധിക്കുക.

47. പ്രധാന പട്ടണങ്ങളിലെ വാഹനങ്ങളുടെ തിരക്കു കുറക്കാൻ ചില നിരത്തുകൾ വൺവേ ആക്കി മാറ്റാനുണ്ട്. തിരക്കുള്ള റോഡുകളിലെ വാഹനനിയന്ത്രണത്തിന് ഏർപ്പെടുത്തിയിട്ടുള്ള മറ്റൊരു ക്രമീകരണമാണ് ട്രാഫിക് ഐലൻഡുകൾ. ഈ ഐലൻഡ് പ്രദക്ഷിണം വെച്ചു മാത്രമേ വാഹനങ്ങൾ മറുവശത്തേക്ക് കടക്കുകയുള്ളൂ. കവലകളിലെ തിരക്കു കുറയ്ക്കാനുള്ള മറ്റൊരു സംവിധാനമാണ് ട്രാഫിക് പോലീസുകാർ. ക്രമസമാധാനപാലനം പോലെ വാഹനഗതാഗത നിയന്ത്രണവും പോലീസുകാരുടെ ചുമതലയാണ്. അയാളുടെ കയ്യിലുള്ള ബോർഡിൽ സ്പോപ്പ് എന്നെഴുതിവെച്ചിട്ടുണ്ട്. ആ ബോർഡ് കാണിച്ചാൽ വാഹനം നിർത്തണം. നാൽക്കവലകളിൽ വാഹനങ്ങൾ പലഭാഗത്തേക്കും തിരിഞ്ഞു പോകും .മുന്നറിയിപ്പില്ലാതെയും ക്രമമില്ലാതെയും അങ്ങനെ കടന്നുപോയാൽ അപകടങ്ങൾ സംഭവിക്കും. അവയെ ശ്രദ്ധയോടെ നിയന്ത്രിച്ച് ഒരു ഭാഗത്തേക്കു പോകുന്നവയെ കടത്തിവിടും. അതേസമയം എതിർഭാഗത്തേക്കുള്ളവയെ തടഞ്ഞുനിർത്തും. ചില ഭാഗങ്ങളിൽ വാഹനഗതാഗതം നിയന്ത്രിക്കുന്നത് സ്വയം പ്രകാശിക്കുന്ന വിളക്കുകൾ മുഖേനയാണ്. ചെമ്മന്നവെളിച്ചം കണ്ടാൽ ആ വശത്തുള്ള വാഹനങ്ങൾ നിർത്തണം. പുറപ്പെടാൻ തയ്യാറാകാനുള്ള സൂചനയാണ് മഞ്ഞവെളിച്ചം. പച്ച വെളിച്ചം കണ്ടാൽ വാഹനങ്ങൾക്കു മുന്നോട്ടു പോകാം. സ്വയം പ്രവർത്തിക്കുന്ന ഇത്തരം വിളക്കുകൾക്ക് ഓട്ടോ മാറിക് ട്രാഫിക് ലൈറ്റുകൾ എന്നു പറയും.

48. അച്ഛൻ അടുർ മജിസ്ട്രേറ്ററു കോടതിയിൽ ഒരു വക്കീലാണ്. രാത്രിയായാലേ കോടതി പിരിയുകയുള്ളൂ. അവിടെനിന്നും രണ്ടുനാഴികയോളമുണ്ട് വീട്ടിൽ വരുവാൻ. വഴിയിൽ നിന്നും ചൂട്ടുവാങ്ങി കത്തിച്ചു കൊണ്ടാണ് വരുന്നത്. എത്ര ഇരുട്ടി

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യിട്ട് വന്നുകയറട്ടെ, ഞാൻ കിഴക്കെ പുമുഖത്തിരുന്ന് പഠിച്ചുകൊണ്ടിരിക്കണം. അല്ലെങ്കിൽ അടിയാണ്. എന്നാൽ അമ്മ എപ്പോഴും എന്നെ സഹായിക്കാറുണ്ട്. 'നീ വിളിക്കിന്റെ ചുവട്ടിൽ കിടന്നുറങ്ങിക്കോ, ചുട്ടിന്റെ വെളിച്ചം ദൂരെ കണ്ടാൽ ഉടൻ വിളിച്ചുണർത്തിക്കൊള്ളാം' എന്നു പറയും. ഞാൻ അട്ടപ്പോലെ ചുരുണ്ടു കിടപ്പാകും. ചുട്ടുവെട്ടം കാണുമ്പോൾ അമ്മ വിളിച്ചുണർത്തും. ഞാൻ 'രാമൻ നല്ലവൻ - രാവിലെ ഉണർന്നു,' എന്നോ 'ഒരു കാക്ക ദാഹിച്ചു വലഞ്ഞു ' എന്നോ ചൊല്ലി തുടങ്ങുകയായി. ഇങ്ങനെ എത്ര രാത്രികളിൽ ഞാനും അമ്മയും ഒന്നുചേർന്ന് അച്ഛനെ കളിപ്പിച്ചിട്ടുണ്ട്.

നിർദ്ദേശങ്ങൾ: താഴെ A B C D എന്നു ക്രമത്തിൽ നാലു പദങ്ങൾ കൊടുത്തിരിക്കുന്നു. അതിൽ അക്ഷരത്തെറ്റില്ലാത്തത് ഒന്നു മാത്രമേ ഉള്ളൂ. അതു കണ്ടുപിടിച്ച് അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനുചുറ്റും വൃത്തം വരയ്ക്കുക.

ഉദാ: A.മശി B. മഷി C. മശ്ശി D. മസി.

രണ്ടാമത്തേതാണല്ലോ ശരി. അതിനാൽ B ചുറ്റും വൃത്തം വരച്ചു. ഇപ്രകാരം മുഴുവനും ചെയ്യുക

- 49. A. വീഥി B. റീതി C. വീദി D. വീഥീ
- 50. A. ഉത്തിഷ്കാര്യം B. ഉദിഷ്കാര്യം C. ഉധിഷ്കാര്യം D. ഉമിഷ്കാര്യം.
- 51. A. പ്രവർത്തി B. പ്രവൃത്തി C. പ്രവുർത്തി D. പ്രവുർത്തി
- 52. A. പ്രദിക്ഷിണം B. പ്രദക്ഷിണം C. പ്രദക്ഷണം D. പ്രതക്ഷിണം
- 53. A. മാർഗവേധം B. മാർഗവേദം C. മാർഗവേമം D. മാർഗവേതം
- ✓54. A. വിദ്യാഭ്യാസം B. വിധ്യാഭ്യാസം C. വിദ്യഭ്യാസം D. വിധ്യഭ്യാസം

55. A. മൃദു B. മൃധു C. മൃമു D. മൃദ്ധു
56. A. സുകുതി B. സുകി C. സുക്മി D. സുകദി
57. A. ദ്രുമം B. ധ്രുമം C. ധ്രുവം D. ധ്രുമം
58. A. പാരിചാതം B. പാരിജാതം C. പാരിചാരം D. പാരിജായം
59. A. പ്രഭാരം B. പ്രഭായം C. പ്രബാരം D. പ്രഭാരം
60. A. ആഗാശം B. ആവാശം C. ആഘാശം D. ആകാശം
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Appendix V

Item Analysis Data of Objective type and Short Answer type items

Item No.	Difficulty Index/ Facility Value %	Discrimination Power	Item Selected	Item No.	Difficulty Index/ Facility Value %	Discrimination Power	Item Selected
1	.574	.333		31	46.2%	.851	*
2	.555	.592	*	32	42.5%	.85	*
3	.518	.592	*	33	1.8%	.03	
4	.296	.148		34	50.0%	1	*
5	.759	.571	*	35	5.5%	.111	
6	.851	.296		36	46.0%	.460	*
7	.537	.111		37	53.7%	.851	*
8	.77	.444	*	38	59.2%	.814	*
9	.666	.460	*	39	59.2%	.740	*
10	.185	.07		40	11.1%	.148	
11	.592	.518	*	41	44.9%	.518	*
12	.277	.20		42	9.2%	.185	
13	.481	.222		43	20.3%	.407	
14	66.6%	.444	*	44	14.8%	.296	
15	.370	.296		45	14.8%	.296	
16	75.7%	.481	*	46	18.5%	.370	
17	.518	.460	*	47	40.4%	.629	*
18	74.0%	.518	*	48	48.6%	.592	*
19	.259	.37		49	.574	.48	*
20	77.7%	.444	*	50	.703	.518	*
21	.666	.486	*	51	.185	.074	
22	79.6%	.407	*	52	.407	.460	
23	.555	.194		53	.351	.259	
24	.703	.592		54	.555	.460	
25	.611	.703		55	.611	.407	*
26	.555	.888		56	.592	.666	*
27	77.7%	.148		57	.555	.592	*
28	75.9%	.185		58	.629	.518	*
29	11.1%	.148		59	.666	.666	
30	35.2%	.444	*	60	.777	.460	

Appendix VI

UNIVERSITY OF CALICUT
DEPARTMENT OF EDUCATION
ACHIEVEMENT TEST IN MALAYALAM LANGUAGE SKILLS
Standard VI (Final Form)

Dr.Kamala S.Pillai

Bindhu.C.M.

നിങ്ങൾക്ക് മലയാള ഭാഷയിലുള്ള പരിജ്ഞാനവും നൈപുണിയും പരിശോധിക്കുന്നതിനുള്ള ഒരു പരീക്ഷയാണിത്. വിവിധ തരത്തിലുള്ള 30 ചോദ്യങ്ങൾ ഇതിൽ അടങ്ങിയിരിക്കുന്നു. ഓരോ പ്രധാന ചോദ്യത്തിനും കൊടുത്തിരിക്കുന്ന നിർദ്ദേശങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിച്ച് ഉചിതമായ ഉത്തരമെഴുതുക. ചോദ്യക്കടലാസിൽ തന്നെ ഉത്തരം രേഖപ്പെടുത്തേണ്ടതാണ്.

നിർദ്ദേശങ്ങൾ: താഴെ കൊടുത്തിരിക്കുന്ന ഓരോവാക്കിന്റെയും നേരേ ABCD എന്ന ക്രമത്തിൽ അതിന്റെ മൂന്നു പര്യായങ്ങളും പര്യായമല്ലാത്ത ഒരു പദവും കൊടുത്തിരിക്കുന്നു. പര്യായമല്ലാത്ത പദം കണ്ടുപിടിച്ച് അതിനെ കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനു ചുറ്റും വൃത്തം വരയ്ക്കുക.

ഉദാ:- രാജാവ് A.നൃപൻ B.അരചൻ C. സമ്പന്നൻ D.ഭൂപൻ.

സമ്പന്നൻ എന്ന പദം രാജാവിന്റെ പര്യായമല്ല. അതിനെ കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരം C ആണല്ലോ. അതുകൊണ്ട് C ക്ക് ചുറ്റും വൃത്തം വരച്ചു. ഇതുപോലെ ഓരോന്നും ചെയ്യുക.

- 1 താമര A. കമലം B. നളിനം C. കുസുമം D. അംബുജം.
- 2 സ്വർണ്ണം A. കാഞ്ചനം B. ഹിരണ്യം C. കനകം D. ദ്രുമം.

നിർദ്ദേശങ്ങൾ: താഴെ കൊടുത്തിരിക്കുന്ന വാക്കുകളുടെ വിപരീതപദം കണ്ടു പിടിക്കുക. ഓരോ വാക്കിനും ABCD എന്ന ക്രമത്തിൽ നാല് ഉത്തരങ്ങൾ കൊടുത്തിരിക്കുന്നു, അതിൽ ഒന്നുമാത്രമാണ് ശരിയായ വിപരീത പദം. അതുകണ്ടുപിടിച്ച് അതിന്റെ നേരേയുള്ള ഇംഗ്ലീഷ് അക്ഷരത്തിനു ചുറ്റും വൃത്തം വരയ്ക്കുക.

ഉദാ: അല്പം A. അധികം B.അനേകം C അസംഖ്യം D അനൽപം.

അൽപം എന്നതിന്റെ ശരിയായ വിപരീതപദം അനൽപം എന്നാണ്. അതിന്റെ ഇംഗ്ലീഷ് അക്ഷരം D ആണല്ലോ. അതിനാൽ D യ്ക്കു ചുറ്റും വൃത്തം വരച്ചു. ഇപ്രകാരം ഓരോന്നും ചെയ്യുക.

3 രക്ഷ A. ശിക്ഷ Bസുശിക്ഷ C.സുരക്ഷ D. അരക്ഷ.

4 പരിഷ്കൃതം A. പാമരം B പൗരാണികം. C.നവീനം D. അപരിഷ്കൃതം.

നിർദ്ദേശങ്ങൾ: താഴെ കൊടുത്തിരിക്കുന്ന ഓരോ വാക്കിന്റെയും നേരെ ABCD എന്ന ക്രമത്തിൽ നാല് അർത്ഥങ്ങൾ കൊടുത്തിരിക്കുന്നു. ഇതിൽ ഒന്നു മാത്രമാണ് ശരി. ഓരോ വാക്കിന്റെയും ശരിയായ അർത്ഥം കണ്ടു പിടിച്ച് അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനു ചുറ്റും വൃത്തം വരയ്ക്കുക.

ഉദാ: പരവശൻ.

A അതിയായ ക്ഷീണമുള്ളവൻ B. അതിയായ ദുഃഖമുള്ളവൻ C. അതിയായ ചിന്തയുള്ളവൻ D. അതിയായ വിഷമമുള്ളവൻ.

പരവശൻ എന്നത് അതീയായ ക്ഷീണമുള്ളവൻ എന്നതിന്റെ ഒറ്റ വാക്ക് ആണല്ലോ. അതിനാൽ അതിനെക്കുറിക്കുന്ന A എന്ന അക്ഷരത്തിനു ചുറ്റും വൃത്തം വരച്ചു ഇതുപോലെ എല്ലാം ചെയ്യുക.

5 ഉദ്ദിഷ്ടകാര്യം

A. അറിഞ്ഞകാര്യം B. പറഞ്ഞകാര്യം C ഉദ്ദേശിച്ചകാര്യം D. നടന്നകാര്യം.

6. അനുദിനം

A. ദിവസംതോറും B. ദിവസം മുഴുവൻ C. ദിവസംമുൻപേ D.ദിവസം കഴിഞ്ഞ്

നിർദ്ദേശങ്ങൾ: ഏതാനും ഖണ്ഡികകൾ താഴെ കൊടുത്തിരിക്കുന്നു. ഓരോ ഖണ്ഡികയും ശ്രദ്ധിച്ച് വായിക്കുക. അതിൽ പറഞ്ഞിരിക്കുന്ന ആശയം മനസ്സിലാക്കിയതിനുശേഷം അതിനു താഴെ കൊടുത്തിരിക്കുന്ന ചോദ്യത്തിന് ഖണ്ഡികയിൽ നിന്ന് ഉചിതമായ ഉത്തരം കണ്ടെത്തി എഴുതുക.

ബസ്റ്റോൻഡിലും റെയിൽവേ സ്റ്റേഷനിലും ആശുപത്രിയിലും മറ്റു പൊതുസ്ഥാപനങ്ങളിലുമൊക്കെ കാര്യസാധ്യത്തിനായി വരുന്നവർ എത്തുന്ന മുറയ്ക്ക് ഒരാളുടെ പിറകിൽ മറ്റൊരാൾ എന്ന ക്രമത്തിന് ക്യൂവായി നിൽക്കുന്നത് നല്ലതാണ്. ഉന്നതം തള്ളും ബഹളവുമില്ലാതെ എല്ലാ പേർക്കും ഉദ്ദിഷ്ട കാര്യം സാധിക്കാൻ ഈ സമ്പ്രദായം സഹായിക്കും. പരസ്പര ബഹുമാനവും സമഭാവനയും സഹിഷ്ണുതയും നിലനിർത്താനും സാധിക്കുന്നു. പരിഷ്കൃത സമൂഹത്തിലെ ഉത്തമ പൗരൻമാർ ഇത്തരം ചിട്ടകൾ പാലിച്ചേതീരൂ. ഇതുപോലെയുള്ള പെരുമാറ്റ ചട്ടങ്ങൾ മറ്റാരുടെയെങ്കിലും നിർബന്ധം കൊണ്ടോ നിയമം മൂലമോ അടിച്ചേൽപ്പിക്കുന്നതിനേക്കാൾ നല്ലത് സ്വയം നടപ്പിലാക്കുന്നതാണ്.

7 ഏതു പെരുമാറ്റച്ചട്ടങ്ങളാണ് സ്വയം നടപ്പിലാക്കേണ്ടത്?

അതാ അടുത്ത കവലയിൽ നോക്കൂ. അവിടെ ഒരു ചെമ്മന്ന പ്രകാശം കാണുന്നുല്ലേ? ചില ഭാഗങ്ങളിൽ വാഹന ഗതാഗതം നിയന്ത്രിക്കുന്നത് സ്വയം പ്രവർത്തിക്കുന്ന ഇത്തരം വിളക്കുകൾ മുഖേനയാണ്. വാഹനങ്ങൾ പോകരുത് എന്നു കാണിക്കാനാണ് ചെമ്മന്ന വിളക്ക് പ്രകാശിപ്പിക്കുന്നത്. ചെമ്മന്ന വെളിച്ചം തെളിഞ്ഞുകണ്ടാൽ ആ വശത്തുള്ള വാഹനം നിർത്തണം. പുറപ്പെടാൻ തയ്യാറാകാനുള്ള സൂചനയാണ് മഞ്ഞ വെളിച്ചം. പച്ചവെളിച്ചം കണ്ടാൽ വാഹനങ്ങൾക്കുമുമ്പോട്ടു പോകാം. സ്വയം പ്രവർത്തിക്കുന്ന ഇത്തരം വിളക്കുകൾക്ക് ഓട്ടോമാറ്റിക്ക് ട്രാഫിക്ക് ലൈറ്റുകൾ എന്നു പറയും. വാഹനങ്ങൾ ഓടിക്കുന്നവർ ഈ സൂചനകൾ എല്ലാം നിർബന്ധമായും അനുസരിക്കണം.

8 പച്ച, മഞ്ഞ, ചുവപ്പ് വിളക്കുകൾ തെളിയുമ്പോൾ വാഹനങ്ങൾ എന്താണ് ചെയ്യേണ്ടത്?

ഗതാഗത നിയമങ്ങൾ എല്ലായിടത്തും എല്ലാവരും പാലിക്കണം. റോഡിൽ എപ്പോഴും വലതുവശം ചേർന്നേ നടക്കാവൂ. കൂട്ടം കൂടിയും തോളിൽ കൈയിട്ടും

കൈകോർത്തുപിടിച്ചും ഒരിക്കലും റോഡിലൂടെ നടക്കരുത്. റോഡിന്റെ മധ്യത്തിലൂടെ യാത്ര ചെയ്യരുത്. ബസ്സിൽ തൂങ്ങിനിന്ന് യാത്ര ചെയ്യരുത്. പിടിവിട്ടുപോയാൽ പിന്നാലെ വരുന്ന വാഹനത്തിന്റെ അടിയിൽ പെടും. വാഹനങ്ങളുടെ ചവിട്ടു പടിയിൽ നിന്ന് യാത്ര ചെയ്യുന്നത് അപകട കാരണമാണ്. ബസ്സിൽ യാത്രചെയ്യുമ്പോൾ കൈയും തലയും പുറത്തിടരുത്. ശ്രദ്ധിക്കാതെ കൈയും തലയും പുറത്തിട്ടാൽ പാഞ്ഞുപോകുന്ന മറ്റു വാഹനങ്ങളിലോ വഴിയരികിലെ തൂണുകളിലോ തട്ടി അപകടം പറ്റും.

9 ബസ്സിൽ യാത്രചെയ്യുമ്പോൾ ശ്രദ്ധിക്കേണ്ട കാര്യങ്ങളെന്തെല്ലാം?

നിർദ്ദേശങ്ങൾ: ഏതാനും ഖണ്ഡികകൾ താഴെ കൊടുത്തിരിക്കുന്നു. ഓരോ ഖണ്ഡികയും ശ്രദ്ധിച്ച് വായിച്ച് അതിൽ പറഞ്ഞിരിക്കുന്ന ആശയം മനസ്സിലാക്കിയതിനുശേഷം ഖണ്ഡികയ്ക്ക് ഒരു തലക്കെട്ട് തീരുമാനിക്കുക. ABCD എന്ന ക്രമത്തിൽ നാലുതലക്കെട്ടുകൾ കൊടുത്തിരിക്കുന്നു. ഉചിതമായ തലക്കെട്ട് ഏതെന്നു കണ്ടുപിടിച്ച് അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനുചുറ്റും വൃത്തം വരയ്ക്കുക. അതിനുതാഴെ കൊടുത്തിരിക്കുന്ന ചോദ്യത്തിന് ഖണ്ഡികയിൽ നിന്ന് ഉചിതമായ ഉത്തരം കണ്ടെത്തി എഴുതുക.

തിരക്കുള്ള റോഡുകളിൽ നടപ്പാതകളിലൂടെ മാത്രമേ പദയാത്രികർ നടക്കാവൂ. റോഡിൽ കുറുകെ വെളുത്ത വരകൾ വരച്ചിട്ടുണ്ട്. ആ സ്ഥലത്തുകൂടിയാണ് റോഡുമുറിച്ചുകടക്കേണ്ടത്. സീബ്രാ വരകൾ എന്നറിയപ്പെടുന്ന ഈ വരകളിലൂടെ മുറിച്ചുകടന്നാൽ നാം സുരക്ഷിതരായി മറുവശത്തെത്തും. നടന്നു പോകുന്ന പദയാത്രികർക്കുള്ളതാണിത്. ട്രാഫിക്ക് പോലീസുകാരൻ വാഹനങ്ങളെയെല്ലാം തടഞ്ഞിട്ട് കാൽനടയാത്രക്കാർക്ക് റോഡുമുറിച്ചുകടക്കാനുള്ള സൗകര്യമുണ്ടാക്കിത്തരും. ഈ വരകൾ ഇല്ലാത്ത സ്ഥലങ്ങൾ റോഡുമുറിച്ചു കടക്കാൻ ഇരുവശത്തു നിന്നും വാഹനങ്ങൾ വരുന്നില്ലെന്ന് ഉറപ്പു വരുത്തിയ ശേഷം മാത്രമേ പാടുള്ളൂ. കൂടുതൽ വാഹനത്തിരക്കുള്ള റോഡുകളിൽ ഇത്തരം സീബ്രാ വരകൾ ഉണ്ടായിരിക്കും.

10 A.വരകൾ. B. നടപ്പാത C പദയാത്രികർ D. സീബ്രാവരകൾ.

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11 റോഡുമുറിച്ചുകടക്കുമ്പോൾ എന്തെല്ലാം കാര്യങ്ങൾ ശ്രദ്ധിക്കണം?

പഴഞ്ഞാലി റോഡിൽ വലിച്ചെറിയരുത്. നടന്നു പോകുന്ന യാത്രക്കാർ വഴുതിവീഴുക മാത്രമല്ല പൊതുമുതലുകൾ വൃത്തികേടാക്കുകയും ചെയ്യും. പൊതുമുതലുകൾ എപ്പോഴും ശുചിയായി സൂക്ഷിക്കണം. പല പരിഷ്കൃത രാജ്യങ്ങളിലും റോഡിൽ തുപ്പുകയോ ചവറുകൾ വലിച്ചെറിയുകയോ ചെയ്യുന്നവരെ ശിക്ഷിക്കാറുണ്ട്. നിരത്തുകളിൽ ചിലേടത്ത് വീപ്പുകളും കുനകളും വച്ചിട്ടുണ്ടാകും. ചപ്പുചവറുകൾ അതിൽ ഇട്ടാൽ നിരത്തുകൾ വൃത്തികേടാകാതെ സൂക്ഷിക്കാം. ക്ലാസു മുറികളിലും ഓഫീസുകളിലും വീടുകളിലും ചപ്പുചവറുകൾ നിക്ഷേപിക്കാൻ ചവറുകുട്ടകൾ വയ്ക്കുന്നത് നല്ലതാണ്.

12 A. പൊതുമുതലുകൾ ശുചിയായി സൂക്ഷിക്കണം. B പരിഷ്കൃത രാജ്യ നിയമങ്ങൾ C. ചവറുകുട്ടകളുടെ ഉപയോഗം. D. ചപ്പുചവറുകളുടെ നിക്ഷേപം.

13 നിരത്തുകൾ വൃത്തിയായി സൂക്ഷിക്കാൻനാം എന്തെല്ലാം കാര്യങ്ങൾ ചെയ്യണം?

നിർദ്ദേശങ്ങൾ: കാസറ്റ് കേട്ടതിനുശേഷം ചോദിക്കുന്ന ചോദ്യങ്ങൾക്ക് അതിനുവേണ്ടി പ്രത്യേകം കൊടുത്തിരിക്കുന്ന സ്ഥലത്ത് ഉത്തരം എഴുതുക.

ഒരു വട്ടം കൂടിയാപ്പഴയ വിദ്യാലയ-
ത്തിരുമുറ്റത്തെത്തുവാൻ മോഹം!
തിരുമുറ്റത്തൊരുകോണിൽ നിൽക്കുന്നോരാനെല്ലി-
മരമൊന്നുലുത്തുവാൻ മോഹം!
അടരുന്ന കായ്മണികൾ പൊഴിയുമ്പോൾ ചെന്നെടു-

അതിലൊന്നു തിന്നുവാൻ മോഹം!
 സുഖമെഴും കയ്പും പുളിപ്പും മധുരവും
 നുകരുവാനിപ്പോഴും മോഹം!
 തൊടിയിലെ കിണർവെള്ളം കോരിക്കുടിച്ചെന്തു
 മധുരം! എന്നോതുവാൻ മോഹം!
 വെറുതെയിരുന്നേതോ കുമ്പിളിന്റെ പാട്ടുകേ-
 ടെതിർപ്പാട്ടുപാടുവാൻ മോഹം!
 അതുകേൾക്കെയുച്ചത്തിൽ കൂകും കുമ്പിളിന്റെ
 ശ്രുതിപിൻതുടരുവാൻ മോഹം!
 ഒരുമയിൽ പീലി ഞാനിന്നു കാണുമ്പോഴും
 ഒരുകുട്ടിയാകുവാൻ മോഹം.

14 കവിയ്ക്ക് ഇങ്ങനെയുള്ള മോഹങ്ങളുണ്ടാവാൻ കാരണമെന്ത്?

കലിംഗ രാജ്യത്തെക്കുറിച്ച് നിങ്ങൾ കേട്ടിരിക്കുമല്ലോ. പഴയ കലിംഗ
 രാജ്യമാണ് ഇന്നത്തെ ഒറീസ്സ സംസ്ഥാനം. ഒറീസ്സയുടെ വിവിധ ഭാഗങ്ങളിലും
 തലസ്ഥാനമായ ഭൂവനേശ്വറിലും ചെറുതും വലുതുമായ നിരവധി ക്ഷേത്രങ്ങളുണ്ട്.
 ഭൂവനേശ്വറിനെ ക്ഷേത്ര നഗരം എന്നു പറയാറുണ്ട്. അവിടെയുള്ള അനേകം
 ക്ഷേത്രങ്ങളിൽ ഏറ്റവും വലുത് ലിംഗരാജ ക്ഷേത്രമാണ്. സമുദ്രതീരത്തുള്ള
 അതിപുരാതനവും പ്രസിദ്ധവുമായ പുരിയിലെ ജഗന്നാഥ ക്ഷേത്രവും അവിടുത്തെ
 രഥോൽസവവും ലോക പ്രശസ്തിയാർജ്ജിച്ചിട്ടുണ്ട്. അശോക ചക്രവർത്തി
 കലിംഗയുദ്ധം നടത്തിയ സ്ഥലത്ത് സ്ഥാപിച്ചിട്ടുള്ള ശാന്തിസ്തൂപം വാസ്തു
 കലയുടെ മനോഹാരിത വിളിച്ചറിയിക്കുന്നു. പുരിയിൽ നിന്ന് 35 കിലോമീറ്റർ അകലെ
 വടക്കു കിഴക്കു ഭാഗത്താണ് കൊണാർക്ക് സൂര്യക്ഷേത്രം സ്ഥിതിചെയ്യുന്നത്.
 ഇവിടുത്തെ ശിൽപകലാ വൈചിത്ര്യം കലാസ്നേഹികളെ നിത്യം
 ആകർഷിച്ചുകൊണ്ടിരിക്കുന്നവയാണ്. അർക്കക്ഷേത്രം, പത്മക്ഷേത്രം കുറുത്ത
 ഗോപുരം എന്നോക്കെ വിളിക്കപ്പെടുന്ന കൊണാർക്ക് 4000 കൊല്ലത്തിലധികം
 പഴക്കമുണ്ടെന്നാണ് ഐതീഹ്യം. ഇവിടെ സൂര്യദേവന്റെ ക്ഷേത്രമുണ്ടായതിനെക്കുറിച്ച്
 സാംബ പുരാണത്തിൽ സൂചനയുണ്ട്.

15 ഭൂവനേശ്വറിനെ ക്ഷേത്ര നഗരം എന്നു പറയുന്നതെന്തു കൊണ്ട്?

16 പുരിയുടെ പ്രത്യേകതകൾ എന്ത്?

17 കലിംഗരാജ്യവും ഒറീസ്സയും തമ്മിലുള്ള ബന്ധം എന്ത്?

നിർദ്ദേശങ്ങൾ: കാസറ്റിലൂടെ കേട്ടതിന്റെ ആശയം സ്വന്തം വാചകത്തിൽ താഴെയുള്ള സ്ഥലത്ത് എഴുതുക.

18 ഹിപ്പോപൊട്ടാമസ് ഒരു നിരുപദ്രവ ജീവിയാണ്. കുഞ്ഞുങ്ങൾ കൂടെയുണ്ടെങ്കിൽ ആപൽക്കാരിയും. വെള്ളത്തിൽ അവൻ ശത്രുക്കളൊന്നുമില്ല. എന്നാൽ കരയിൽ കയറിക്കിടക്കുമ്പോൾ മറ്റൊരിരയും കിട്ടാത്ത സിംഹം ആ വഴിക്കു വന്നുവെങ്കിൽ അവനെ പിടികൂടാതിരിക്കുകയുമില്ല. ഹിപ്പോ അതി വേഗത്തിൽ വഴങ്ങിക്കൊടുക്കുകയുമില്ല. തേറ്റു കൊണ്ടും നഖങ്ങൾക്കൊണ്ടും ഒരു ദീർഘസമരം അവിടെ വെച്ചു നടക്കും. നൈൽ നദിയിലൂടെ സഞ്ചരിക്കുമ്പോൾ അടുത്തുള്ള കരയിൽ ഇത്തരം ഹരിഹിപ്പോ സമരങ്ങൾ നടക്കുന്നത് ചിലപ്പോൾ കാണാം.

നിർദ്ദേശങ്ങൾ താഴെ ABCD എന്ന ക്രമത്തിൽ നാലു പദങ്ങൾ കൊടുത്തിരിക്കുന്നു. അതിൽ അക്ഷരത്തെറ്റില്ലാത്തത് ഒന്നു മാത്രമെയുള്ളൂ. അതുകണ്ടു പിടിച്ച് അതിനെക്കുറിക്കുന്ന ഇംഗ്ലീഷ് അക്ഷരത്തിനുമുറ്റും വൃത്തം വരയ്ക്കുക.

ഉദാ: A മശി B. മഷി C.മശ്ശി D മസി.

രണ്ടാമത്തേതാണല്ലോ ശരി. അതിനാൽ B യ്ക്കു ചുറ്റും വൃത്തം വരച്ചു. ഇപ്രകാരം മുഴുവനും ചെയ്യുക.

- 19 A. വീഥി B വീതി C വീദി D വീഥി
- 20 A. ഉത്തിഷ്ടകാര്യം B ഉദ്ദിഷ്ടകാര്യം C.ഉദ്ദിഷ്ടകാര്യം D.ഉഥിഷ്ടകാര്യം
- 21 A മുദു B. മുധു C. മൂമു D മുദ്ധു.
- 22 A സുകതി B സുതകി C സുക്മി D സുക്ദി
- 23 A ദ്രുമം B. ധ്രുമം C. ധ്രുവം D.ധ്രുമം
- 24 A പാരിചാതം B. പാരിജാതം C പാരിചാദം D. പാരിജായം.

നിർദ്ദേശങ്ങൾ: താഴെ കൊടുത്തിരിക്കുന്ന ഉദാഹരണം വായിക്കുക. ഉദാഹരണമായി തന്നിരിക്കുന്ന വാചകത്തെ മറ്റൊരുതരത്തിൽ ക്രമീകരിച്ച് എഴുതിയിരിക്കുന്ന 'മാതൃക' യും കൊടുത്തിരിക്കുന്നു. തന്നിരിക്കുന്ന നാലു വാചകങ്ങളെ 'മാതൃകയിൽ' ക്രമീകരിച്ച് എഴുതിയതുപോലെ എഴുതുക. ഓരോ വാചകത്തിന്റെയും താഴെയുള്ള സ്ഥലത്ത് ഉത്തരം എഴുതാവുന്നതാണ്.

ഉദാ: വിളക്കുകൾ സ്വയം പ്രകാശിക്കുന്നു.
മാതൃക: സ്വയം പ്രവർത്തിക്കുന്ന വിളക്കുകൾ.

- 25 വാഹനങ്ങൾ കടന്നുപോവുന്നു.
- 26 വാഹനങ്ങൾ നിർത്തിയിരിക്കുന്നു.
- 27 പാദചാരികൾ റോഡു മുറിച്ചു കടക്കുന്നു.

നിർദ്ദേശങ്ങൾ: താഴെ കൊടുത്തിരിക്കുന്ന വിഷയത്തെക്കുറിച്ച് അഞ്ചു വാചകം എഴുതുക. വിഷയത്തിനു താഴെയുള്ള സ്ഥലത്ത് എഴുതാവുന്നതാണ്.

28 ഞാൻ കണ്ട നഗരം

നിർദ്ദേശങ്ങൾ: രണ്ടു ഖണ്ഡികകൾ താഴെ കൊടുത്തിരിക്കുന്നു. അത് ശ്രദ്ധാപൂർവ്വം വായിച്ച് ആശയം നഷ്ടമാവാതെ സംഗ്രഹിക്കുക. പ്രത്യേകം കൊടുത്തിരിക്കുന്ന സ്ഥലത്ത് ഉത്തരമെഴുതാൻ ശ്രദ്ധിക്കുക.

29 പ്രധാന പട്ടണങ്ങളിലെ വാഹനങ്ങളുടെ തിരക്കുകുറക്കാൻ ചില നിരത്തുകൾ വൺവെ ആക്കി മാറ്റാറുണ്ട്. തിരക്കുള്ള റോഡുകളിലെ വാഹന നിയന്ത്രണത്തിന് ഏർപ്പെടുത്തിയിട്ടുള്ള മറ്റൊരു ക്രമീകരണമാണ് ട്രാഫിക് ഐലൻഡുകൾ. ഈ ഐലൻഡ് പ്രദക്ഷിണം വെച്ചു മാത്രമേ വാഹനങ്ങൾ മറുവശത്തേക്കു കടക്കുകയുള്ളൂ .കവലകളിലെ തിരക്കു കുറക്കുവാനുള്ള മറ്റൊരു സംവിധാനമാണ് ട്രാഫിക് പോലീസുകാർ. ക്രമസമാധാനം പോലെ വാഹന ഗതാഗത നിയന്ത്രണവും പോലീസുകാരുടെ ചുമതലയാണ്. അയാളുടെ കൈയിലുള്ള ബോർഡിൽ സ്റ്റോപ്പ് എന്നെഴുതിവെച്ചിട്ടുണ്ട്. ആ ബോർഡ് കാണിച്ചാൽ വാഹനം നിർത്തണം. നാൽക്കവലകളിൽ വാഹനങ്ങൾ പല ഭാഗത്തേക്കും തിരിഞ്ഞു പോകും. മുന്നറിയിപ്പില്ലാതെയും ക്രമമല്ലാതെയും അങ്ങനെ കടന്നു പോയാൽ അപകടങ്ങൾ സംഭവിക്കും. അവയെ ശ്രദ്ധയോടെ നിയന്ത്രിച്ച് ഒരു ഭാഗത്തേക്ക് പോകുന്നവയെ കടത്തിവിടും. അതേ സമയം എതിർ ഭാഗത്തേക്കുള്ളവയെ തടഞ്ഞു നിർത്തും. ചില ഭാഗങ്ങളിൽ വാഹന ഗതാഗതം നിയന്ത്രിക്കുന്നത് സ്വയം പ്രകാശിക്കുന്ന വിളക്കുകൾമൂലമേയെന്നാണ്. ചെമ്മന്ന വെളിച്ചം കണ്ടാൽ ആ വശത്തേക്കുള്ള വാഹനങ്ങൾ നിർത്തണം. പുറപ്പെടാൻ തയ്യാറാകാനുള്ള സൂചനയാണ് മഞ്ഞവെളിച്ചം. പച്ചവെളിച്ചം കണ്ടാൽ വാഹനങ്ങൾക്കു മുന്നോട്ടുപോവാം. സ്വയം പ്രവർത്തിക്കുന്ന ഇത്തരം വിളക്കുകൾക്ക് ഓട്ടോമാറ്റിക് ട്രാഫിക് ലൈറ്റുകൾ എന്നു പറയും.

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30 അച്ഛൻ അടുർ മജീസ്‌ട്രേറ്റു കോടതിയിൽ ഒരു വക്കീലാണ്. രാത്രിയായാ ലെ കോടതി പിരിയുകയുള്ളു. അവിടെനിന്നു രണ്ടു നാഴികയോളമുണ്ട് വീട്ടിൽ വരുവാൻ. വഴിയിൽ നീന്നും ചുട്ടു വാങ്ങിക്കെത്തിച്ചുകൊണ്ടാണ് വരുന്നത്. എത്ര ഇരുട്ടിയിട്ടു വന്നു കയറട്ടെ, ഞാൻ കീഴക്കേ പൂമുഖത്തിരുന്നു പഠിച്ചുകൊണ്ടിരി ക്കണം .അല്ലെങ്കിൽ അടിയാണ്. എന്നാൽ അമ്മ എപ്പോഴും എന്തെ സഹായി ക്കാറുണ്ട്. ‘നീ വിളക്കിന്റെ ചുവട്ടിൽ കിടന്നുറങ്ങിക്കോ, ചുട്ടിന്റെ വെളിച്ചം ദുരമ കണ്ടാൽ ഉടൻ വിളിച്ചുണർത്തി ക്കൊള്ളാം, എന്നു പറയും, ഞാൻ അട്ടപോലെ ചുരുണ്ടു കിടപ്പാകും. ചുട്ടു വെട്ടം കാണുമ്പോൾ അമ്മ വിളിച്ചുണർത്തും. ഞാൻ രാമൻ നല്ലവൻ-രാവിലെ ഉണർന്നു’ ,എന്നോ ‘ഒരു കാക്ക ദാഹിച്ചു വലഞ്ഞു’ എന്നോ ചൊല്ലിത്തുടങ്ങുകയായി. ഇങ്ങനെ എത്ര രാത്രികളിൽ ഞാനും അമ്മയും ചേർന്ന് അച്ഛനെ കളിപ്പിച്ചിട്ടുണ്ട്.

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