

**DEVELOPMENT OF A TRAINING MODULE FOR
TEACHERS TO TRANSACT BIOLOGY CURRICULUM
FOR DEVELOPING CERTAIN MORAL VALUES
IN SECONDARY SCHOOL PUPILS**

REKHA, P.

Thesis
submitted for the Degree of
DOCTOR OF PHILOSOPHY IN EDUCATION

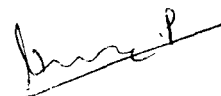
**DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT**

2007

DECLARATION

I, **Rekha, P.**, do hereby declare that this thesis entitled "**DEVELOPMENT OF A TRAINING MODULE FOR TEACHERS TO TRANSACT BIOLOGY CURRICULUM FOR DEVELOPING CERTAIN MORAL VALUES IN SECONDARY SCHOOL PUPILS**", has not been previously formed the basis for the award of a Degree, Diploma, Title or Recognition.

Calicut University,
19-04-2007.



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CERTIFICATE

Certified that this thesis entitled "**DEVELOPMENT OF A TRAINING MODULE FOR TEACHERS TO TRANSACT BIOLOGY CURRICULUM FOR DEVELOPING CERTAIN MORAL VALUES IN SECONDARY SCHOOL PUPILS**", is a record of bona fide study and research carried out by **Smt. Rekha, P.**, under my supervision and guidance and that it has not been previously formed the basis for the award of a Degree, Diploma, Title or Recognition.


Dr. AYISHABI, T.C.

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CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

<i>Chapter</i>	<i>Title</i>	<i>Page No.</i>
I	INTRODUCTION	1 – 23
II	REVIEW OF RELATED LITERATURE	24 – 92
III	METHODOLOGY	93 – 131
IV	ANALYSIS AND INTERPRETATIONS	132 – 208
V	MODULE FOR TRANSACTING SECONDARY LEVEL BIOLOGY CURRICULUM TO DEVELOP VALUES	209 – 348
VI	SUMMARY OF FINDINGS, CONCLUSIONS AND SUGGESTIONS	349 – 366
	REFERENCES	367 – 382
	APPENDICES	383 – 400

LIST OF TABLES

<i>Table No.</i>	<i>Title</i>	<i>Page No.</i>
1.	Classification of Values by Mehndirata	28
2.	Classification of Literature Reviewed	87
3.	List of Samples used in the Study	96
4	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Total Sample	134
5	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 1	136
6	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 2	137
7	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 3	138
8	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 4	139
9	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 5	140
10	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 6	141
11	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 7	142

12	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 8	143
13	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 9	144
14	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 10	145
15	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 11	146
16	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 12	147
17	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 13	148
18	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 14	149
19	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 15	150
20	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 16	151
21	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 17	152
22	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 18	153

23	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 19	155
24	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 20	156
25	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 21	157
26	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 22	158
27	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 23	159
28	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 24	160
29	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 25	162
30	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 26	163
31	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 27	164
32	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 28	165
33	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 29	166

34	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 30	167
35	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Male Teachers	171
36	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Female Teachers	172
37	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Thrissur Region	173
38	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Manjeri Region	174
39	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Calicut University Campus School Region	175
40	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for Boys	177
41	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for Girls	178
42	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Government Schools	180
43	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Aided Schools	181
44	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Urban Schools	182

45	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Rural Schools	183
46	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Co-educational Schools	185
47	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Boys only Schools	186
48	Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Girls only Schools	187
49	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Total Sample	193
50	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Male Teachers	194
51	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Female Teachers	195
52	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for Boys	196
53	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for Girls	198
54	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Government Schools	199
55	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Aided Schools	200

56	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Urban Schools	201
57	Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Rural Schools	202

LIST OF FIGURES

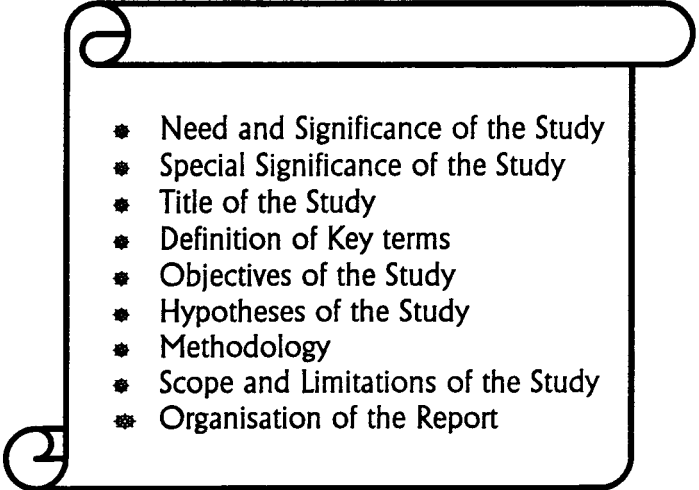
<i>Figure No.</i>	<i>Title</i>	<i>Page No.</i>
3.1	Map showing the Distribution of Schools Selected for the Study	100
3.2	Instructional and Nurturant Effects of Jurisprudential Inquiry Model	116

LIST OF APPENDICES

<i>Appendix No.</i>	<i>Title</i>	
I	Test of Moral Values (Malayalam)	383 – 390
II	Test of Moral Values (English)	391 – 398
III	Test of Moral Values Response sheet	399
IV	Test of Moral Values Scoring Key	400

Chapter - I

INTRODUCTION

- 
- Need and Significance of the Study
 - Special Significance of the Study
 - Title of the Study
 - Definition of Key terms
 - Objectives of the Study
 - Hypotheses of the Study
 - Methodology
 - Scope and Limitations of the Study
 - Organisation of the Report

INTRODUCTION

There is a strong and persistent view that one of the worst crisis of our time is the 'Crisis of Character'. These days social, moral, cultural and spiritual values are disintegrating, religion losing its hold, power and knowledge are misused for vested interests, nations fail to trust one another and black-marketing, corruption, barbarism, indiscipline, violence are fast spreading. That is a chaotic condition is observed in almost all spheres of our life. According to Dr. S. Radhakrishnan the troubles of the whole world are because of the fact that education has been becoming a mere intellectual exercise and not the aid for acquisition of moral and spiritual values.

In the past, India had a rich and glorious tradition. But at present our society faces a lot of crisis in the field of social and moral values of life. In this connection Chilana (1987) opines, "In view of our glorious tradition of piety, tolerance, universal brotherhood and peaceful co-existence as contrasted with the present day phenomenon of hypocrisy, corruption, dishonesty and inhuman attitude, we are undoubtedly convinced that we face today the worst moral crisis" (Sarangi, 1994, p.146).

Gandhiji said, "By Education, I mean an overall allaround drawing out of the best in child and man in body, mind and spirit". In the present context, is it happening in our classrooms? Or in our educational process? With

knowledge explosion education has been restricted to transmission of specialized knowledge leaving aside the human values. Character training and value education has been ignored altogether in our educational system. Here education is soaked in textual scholarship forgetting the values.

"If we are given the right kind of education definitely we may be an exemplary to others. For example, take any tree when it bores fruits it bows down to the ground due to the weight of the fruits attached to the stem, so that the human beings can reach to their fruits easily. Similarly the educated man should stand like a tree which emphasizes the fact that we should be humble. Here definitely the man's character and values in the society will be appreciated by the people" (Vijayakumar and Namasivayam, 2005).

A study of the documents of the Government of India related to pre-independence period and post-independence period reveal the demand of the educators on the inclusion of moral education and its values in our educational system. The need for value education has also been stressed by all the commissions set up for educational development from time to time.

Radhakrishnan Commission (1948), Sri Prakasa Committee on Religious and Moral Instruction (1959), Kothari Commission (1964-66), National Policy on Education (1986) and Programme of Action, NPE (1992) have been highlighting the urgent need for value education. According to Tagore, in order to emphasize the need and importance of value oriented

education, the greatest use of Education is not merely to collect facts but to know man and make oneself known to man (Mehndirata, 1997, P. 981).

Value Education forms the foundation of character and moral development. It is able to inculcate in children humility, truthfulness, tolerance, honesty, sincerity, courtesy, sympathy, fellow feeling, affection spirit of service and sacrifice through education.

The National Policy on Education (NPE, 1986) has rightly pointed out the crisis in values in all aspects of life. Therefore it has recommended a special thrust on inculcation of values at all stages of education, especially at the school stage.

The first and foremost educational agency in the development of children is the family itself. After a particular age they enter school which is the next and most important agency for their development. It is the climate and ethos of the school which is the most significant factor for developing values in children. In the school the curriculum, teachers, friends and all the like influence their moral development.

The teacher is essentially a part and parcel of the society. He is preparing the child in a small community known as school for a larger community known as the society. The teacher is responsible for the allround development of the child in physical, intellectual, emotional, psychic and spiritual domains. The recommendation of the Education Commission

(1964-66) emphasized that every teacher whatever his/her subject must necessarily accept the responsibility of value development of their students.

At present the educational system has undergone many changes; children as enter school at an earlier age than before; a sense of competition which shadows revenge appears in examinations, and all over teachers feel that the society wants only good results in examinations and thus looks for only career development. Instead, the role of the teacher should be upbringing the child by giving importance to the value aspect of the life and thus the development of a child into a better acceptable personality in the society.

Children must behave morally from the earliest stage so that they need a set of moral principles to guide them. This is the kind of development a teacher should expect from their students. First of all the teacher himself should be an embodiment of values and for which he must possess value oriented outlook and then he should follow ways and means of spreading values in the students.

The present attempt is focusing the importance of value education where the role of teacher is the relevant area.

NEED AND SIGNIFICANCE OF THE STUDY

Now-a-days teachers have the opinion that the value-crisis is reflecting in our classrooms. Some students are declared by teachers as mischievous,

indisciplined and some of the them are named delinquent while others are called 'good for nothing fellows', But are these applicable to children? Really not; not at all.

A child is a special sort of human being by reason of its being in a state of growth. Physically and psychologically a child is far more vulnerable than an adult. When a child is born, it is neither moral, nor immoral but amoral. It is the environment which makes him moral or immoral. This gives us the notion that through education and training morality can be inculcated in the child.

Freud proposed that children around four years of age assimilate the morals and standards of their same sex parent, resulting in the onset of the child's superego, which is the storehouse for one's conscience. Thus children have rudimentary sense of right and wrong based on the morals of their parental figure. According to Kohlberg (1969), as the child develops, the child learns that rules can be challenged and is able to consider other factors, such as a person's intentions and motivation. Once this stage in perception occurs, the child's moral development will progress to a higher stage.

Rani (1968) conducted a study on moral development in children and found that age was an important variable influencing the knowledge of moral values, which seemed to increase with an increase in age.

It is in the secondary school stage in which the demands of the society for value laden behaviour increases. Moral breakdown that occurs at the secondary stage might well have been avoided only through proper training. Since character is built largely during childhood and youth it should be a special responsibility of schools and colleges to provide education for character training.

Moral development of a child, according to some, results automatically from the social life of the school. The child as a member of the group imbibes the attitudes, values and general behaviour of the group and continually tries to mould himself according to the group norms. Such adjustment to life constitutes his moral development. Value Education of this period also is a process of aiding the child in such adjustment. "Ethical values are essential to make an individual a good and useful member of society and a good person himself and these values are essential for sustaining societies" (Venkataiah, 1998, p.5). Hence the need of a good atmosphere in school is necessary for the development of values in students.

There is no doubt that many agencies like teachers, friends, peer group and curriculum, all are influencing the development of a child. The development of an individual for leading a better life is happening unknowingly. The students are not aware of the effectiveness of the above agencies. May be that the saying 'Values are caught rather than taught' is true

here. It is sure that the good model of teachers, public, peers, all develop goodness in students. Here the opinion of Rohidekar (1998) is relevant. According to him **Values are to be caught and not taught** is a very old saying. It was perhaps true in days gone by when parents at home and leaders in community in various walks of life were all value based people. Therefore younger children and growing adolescents could catch values of elderly people and either by imitation or by special efforts developed appropriate values accepted and respected in society" (p.80).

If undesirable models are more in the world how can we expect that values can be caught from models? Therefore values have to be taught in addition to being caught, from selected situations and personalities.

Rohidekar adds, the practical solution lies in making a beginning of value education in which teacher training in values should be strong component and the curriculum in value education should be related to the present practical needs of society. Therefore, the need for development of appropriate curriculum and the relevant training courses for teachers to enable them to handle value education in a practical way is more stressing.

Even in any technological advancements the role of teacher is highly relevant and crucial in the development of the child. As is the teacher, so is the student. It is in school most children find their teachers as worthy models. They consciously or unconsciously imitate the values, ideals and habits of

their teachers. Students look up to the teacher with faith and hope and they seek his counsel in matters temporal or transcendental. Hence teacher should have keen sense of values.

Some say that teachers should spend their time teaching students to think rather than feel. This is because of the attitude that the objectives of the affective domain are to be developed by other agencies like family, religious institutions etc. But the separation of the cognitive and affective aspects for the development of an individual is untenable. In the process of education the around development of the individual is to be given importance. This means a teacher should aim the development of the whole person.

In the present system of education, the text books play a pivotal role. Mani (2002) remarks, "when there is doubt on concept clarity, children tend to refer the text-book to a large extent. Sometimes it has more effect than the teacher himself does in the classroom. Therefore, text books have a great role to play in fostering values. Value development concepts should be interwoven with the syllabi. Instead of teaching value development as a separate subject, the concept can be effectively integrated through textbooks" (p. 40). Sharma (1998), Sivakumar (2004), Anilkumar (2005), Vijayan (2005), and Agarwal and Agarwal (2006) have stressed the significance of text books in value development of children.

The above studies show that all subjects like Languages, Civics, History, Geography, Economics, Commerce and Science do contain inherent values. The investigator has specialized in Biology and is specially trained in teaching of Biology only. Through this humble attempt the investigator wishes to find out whether values are hidden in the Biology text book of secondary classes also.

Before transaction of the text book, the teacher should know the effectiveness of the book by looking for its aims and objectives. As the first step teacher should try to find out the value aspect of the book and then approach the transaction procedure/technique to develop them in students. This should be accepted by all teachers as their regular responsibility. That is why the investigator selected teacher as the sample for the study.

SPECIAL SIGNIFICANCE OF THE STUDY

The usual practices of value education in classrooms by the teachers are as follows ;

- Extension lectures of experts on morality or value oriented education.
- Celebration of birthdays of great men and women and celebration of International Days also.
- Arrangement of book exhibitions on literature related to moral values.
- Extracurricular activities for moral development in children.

- On the spot art and painting competitions on themes related to different types of values.
- Role play.

Singh (2004) pointed out the limitations of the above said methods as all these appeal to emotions and not to reason. The rational outlook is essential as it makes the man open-minded, tentative and provisional in nature, dispassionate, cool and tolerant in opinion. Our feeling gives us the values but the reasoning helps us to achieve those values. So such a method of teaching is required which is conducive to imbibe values by students. The aim of the method should be to teach procedure rather than to give solutions.

"A moral person, according to Venkataiah (1998), not only does the right thing but also knows the reason as to why he does it".

The search for such a method ended in Jurisprudential Inquiry Model of teaching (JIM). This model of teaching involves conception of values and productive dialogue as well as curriculum and pedagogical considerations. One notable advantage of this method is that open climate for discussion is there which is a major feature of childcentred approach in the classroom. Another advantage is that the teacher is very powerful person who initiates the questions or inquiry during the process which push students' thinking and help them to learn.

Therefore, the investigator felt the effectiveness of JIM and thus the necessity to orient teachers on JIM. It is also felt that as the textbooks are the real source of values they are to be analysed first for identifying those values and then the values be transacted through JIM. As the investigator is specialized in Biology only she can work on the secondary level Biology curriculum alone.

Hence she decided to conduct an experimental study for which secondary level Biology teachers who are in service can be utilised. The study could be giving training to the selected sample for analyzing the content of the Biology text books to find out values and to transact these values through JIM to the students in the schools. To make the study more useful to the teaching community it was decided to convert the training procedure into a module for self-learning.

How the Study is Different from the Earlier Studies in the Field

The present study is not intended to duplicate the existing studies. It is intended to be an extension of the pervious studies conducted in the area as indicated below.

1. All the studies have proved the relevance of moral education theoretically. This study approaches value education in a practical way.
2. The present study has taken teachers as the sample and mainly focused on the role of teachers in value education.

3. The present study is conducted through a training programme given to teachers after collecting their opinion about the present status of value education in the schools and developed the study along with their expectations in the relevant area.
4. As the teachers pointed out the limitations of already practiced techniques or methods for value education, this study highlights the importance of an effective model JIM for value inculcation.
5. Along with the theoretical aspects this study provides an experimental experience to teachers about JIM for its classroom practice.
6. The earlier studies in this area suggested JIM as an effective strategy for value development in students, the present study is practicing the strategy with utmost care.
7. The references showed that value education is a neglected area in the teachers training programme. Hence the present study attempts to develop a self learning material/module for its use in teachers training programme/ in-service teaching by the mass.

Possible Outcomes of the Study

The findings of the study are intended to yield the following outcomes.

1. As the teachers are the sample for transaction of values which are first identified from the content and then its practice through JIM, every

Biology student of the consecutive years will get its benefits from the same teacher.

2. The trained teachers can transfer the procedure practiced in this study to other teachers of different subjects also. It is helpful to all teachers because every subject inhere values.
3. As the study develops a module/self learning material for JIM, it is highly useful as a ready reference material to all teachers.
4. As the study provides a technique for transaction of values it is helpful for inservice teachers, pre-service training and training through mass media.

In view of all the above aspects, the study was entitled as follows:

TITLE OF THE STUDY

The problem for the present study is entitled as "DEVELOPMENT OF A TRAINING MODULE FOR TEACHERS TO TRANSACT BIOLOGY CURRICULUM FOR DEVELOPING CERTAIN MORAL VALUES IN SECONDARY SCHOOL PUPILS".

DEFINITION OF KEY TERMS

The key terms included in the title of the study are defined as follows:

1. Development

Dictionary of Education (Good, 1973) defines development an extension of basic or applied research through which laboratory findings are reduced to practice.

For the present study "development" means transforming the complete procedure of the training programme conducted for teachers to develop values in students to a module. Thus the term stands for preparation of the module.

2. Training

According to Taneja (1989) training is systematic practice in the performance of a skill.

Dictionary of Education (Good, 1973) defines training as the special kind of teaching and instruction in which the goals are clearly determined, are usually readily demonstrated, and call for a degree of mastery which requires student practice and teacher guidance and appraisal of the student's improved performance capabilities.

For the present study training was given to the select Biology teachers of secondary schools to identify moral values hidden in the content of the Biology curriculum and to transact them for developing values in students.

3. Module

A module is a self contained and independent unit of instruction with the primary focus on a few well defined objectives. The substance of a module consists of materials and instructions needed to accomplish these objectives (Husen and Postlethwaite, 1985).

4. Biology Curriculum

For the present study, Biology curriculum refers to the science of life with special reference to the syllabus of Botany and Zoology prescribed for secondary school students.

5. Moral Values

Moral values refer to those values which are related to an individual's character and personality conforming to what is right and virtuous. Examples; honesty, integrity, sense of responsibility, compassion etc. (Venkataiah, 1998).

6. Secondary School Pupils

Students studying in standards VIII, IX and X in recognized high schools in Kerala state. For the present study only students of standard IX were taken as the representative sample.

OBJECTIVES OF THE STUDY

The following are the objectives of the present study:

1. To train teachers to transact Biology curriculum for developing certain moral values in secondary school pupils.
2. To develop a training module based on the above procedure.

HYPOTHESES OF THE STUDY

The following hypotheses are formulated for the study:

1. There will be a positive effect for the training given to develop moral values identified from the secondary school Biology curriculum which is transformed into a module.
2. The effect of training given for developing moral values, which is presented in the module, will be long lasting as evidenced by the retention of the same.

METHODOLOGY

The methodology of the study is provided below in brief.

a) Design of the Study

The study was conducted at first as an experimental one, the procedure of which was then developed into a training module. The training was for teachers to transact Biology curriculum for developing certain moral values in

secondary school pupils. The study aimed at giving training to a limited number of Biology teachers of secondary level first to analyse Biology curriculum of standards VIII, IX and X to find out the moral values in the Biology content. Secondly training was given to transact these values to the students by using a strategy namely Jurisprudential Inquiry Model (JIM). After becoming well versed in the strategy teachers were allowed to practice the same in their classes. The effect of the treatment was compared between pre-testing, post-testing and retention testings. The complete training procedure was then transformed into a module by hoping that this will be useful for all Biology teachers as a self-learning material for identifying values from the content of text books and for practice of JIM in the field. Hence the design of the study was a single group pre-test –treatment–post-test–retention test experiment combined with development of a self-learning material .

b) Variables of the Study

The following are the variables of the study;

1. Dependent variable – The development of moral values in secondary school students.
2. Independent variable – The training given to teachers to transact Biology curriculum which was later developed as a module.

c) Sample for the Study

The sample for the training was 30 Biology teachers of secondary school level. This sample was selected from the teacher community with those who are willing to participate and practice the training procedure in their classes. The sample was selected from three locales, namely Thrissur, Manjeri and Calicut University Campus regions.

The treatment was applied and tests were administered to 1094 students of standard IX.

d) Tools used for the Study

The following tools were used for the study;

1. Test of Moral Values for secondary school students
2. Eight value based lesson plans on JIM to develop the identified moral values from the Biology curriculum, which were later transformed as the module.

e) Procedure

The procedure adopted for the study is as follows;

1. Analysing the Biology text books for standards VIII, IX and X to locate moral values that can be developed from the curriculum.

2. Making the teachers aware of the scope of Biology curriculum to develop certain moral values and the need for certain special transacting procedures to develop those values.
3. Giving training to teachers to analyse the Biology text books to identify the values hidden in them.
4. Training the teachers for using JIM to develop moral values identified in the above step.
5. Conducting a pre-test of moral values for secondary school pupils selected as the sample.
6. Conducting classes by the trained teachers through JIM to develop the select moral values for the sampled students.
7. Conducting a post-test of moral values for the sample.
8. Testing the difference between pre-test and post-test scores for its significance.
9. Conducting a retention test of moral values for the sample.
10. Testing the difference between post test and retention test scores for its significance.
11. Developing the final module

f) Statistical Techniques used for the Study

The statistical technique used for analysing the data was the test of significance of the difference between correlated means

SCOPE AND LIMITATIONS OF THE STUDY

The descriptions of the study attempted above are mostly adequate to convey the scope and limitations of the study. Since they have been presented in combination with other routine descriptions, an attempt has been made here to examine separately the scope and limitations of the procedure adopted in the study. The important aspects that need special mention in this context are the following.

The present study has been designed as an experimental one and aimed at development of moral values in secondary school students. Now-a-days the area of moral education is becoming important in the educational scenario and it calls for direct, indirect and incidental way or with an integration of all these for maximum results. Many experts proposed different strategies for value inculcation also. Thus the dependent variable, that is, development of moral values seems highly relevant.

Teachers are the most powerful agents of value inculcation in their students. But there is a big question posed by teachers about how the values are to be identified and transacted. In such a context the teachers are to be trained for identification and transaction of values. Hence the sample of the study was teachers.

The training was systematic with planning and preparation of necessary materials. 30 teacher samples were selected from three regions of

two complete districts which is supposed to be an adequate size to be handled for an experimental study. The 30 teachers were given training in still a handy number in subgroups. The trained teachers conducted classes in their own classes and thus no artificiality could be experienced by the students in the experiment.

The necessary tools prepared for the study were Lesson plans based on JIM and Test of Moral Values for students. The tools were appropriate and adequate for the purpose. The lesson plans followed the actual phases of the JIM proposed in the source book. The components of the test were also appropriate as the test was a criterion referenced one which was then evaluated by experts in the field.

Simple experimental design was selected and significance of pre-post tests was analysed for effectiveness of the training. Necessary statistical techniques were applied for the same. Thus the findings are generalizable.

Since the training found its effectiveness, the complete procedure used for the training was transformed to a module which is hoped to be useful to all teachers to transact values in students.

Eventhough the investigator was careful enough to maximize the generalizability of the study the following limitations also have crept into it.

1. Since it is a pre-test – post-test design the presence of some extraneous variables could have occurred in the experiment, which could not be controlled by the investigator.
2. Due to practical difficulties the study is limited to transaction of eight values through only eight classes by the trained teachers.

Still, it is expected that these limitations would not affect the result of the study and the results would certainly prove highly useful for all teachers especially Biology teachers for their academic and personal development.

ORGANISATION OF THE REPORT

The report has been presented in six chapters.

Chapter I is the **Introduction** which presents a rationale for selecting the problem, its significance including expected original outcomes of the study, statement of the problem, definition of key terms used, statement of the objectives and hypotheses of the study, methodology and scope and limitations of the study.

Chapter II is the **Review of Related Literature**. Its first part is the theoretical perspective of the variables in detail and the second part contains the survey of related studies. The chapter also contains a summary of the major trends observed in the studies reviewed.

Chapter III is the **Methodology**. It includes a detailed description of methodology adopted for the present study. It includes design of the study, variables, samples, tools, procedure in detail and statistical techniques used.

Chapter IV of the report is **Analysis and Interpretations**. This includes detailed statistical analysis of data, discussions and interpretations of the results.

Chapter V of the report is the **Module**. The outcome of the study is presented in the form of a Module which consists of two sections. First section is Identification of values from standard IX Biology text book through content analysis. Second section is Transaction of the select values through Jurisprudential Inquiry Model.

Chapter VI is **Summary of Findings, Conclusions and Suggestions**. The study in retrospect, statement of the problem, major findings, educational implications and suggestions for further research form the aspects of this chapter.

Chapter II

REVIEW OF RELATED LITERATURE

- * Theoretical Overview
 - * Values - An Overview
 - * Theories of Moral development
 - * Approaches to Value education
- * Survey of Related Studies
- * General Trend shown by the Studies Reviewed
- * Contribution of Review of Related Literature to the Present Study

REVIEW OF RELATED LITERATURE

This chapter consists of four sections :

The first section is the theoretical overview related with the problem of the study.

The second section provides a review of the studies conducted in the field.

The third section is the general trend shown by the studies reviewed and The fourth section is the contribution of review of related literature to the present study.

They are given below in this order.

A. THEORETICAL OVERVIEW

This section discusses the theoretical aspects of values.

i) Values - An Overview

The term 'Value' stands for 'Intrinsic Worth'. Whatever is actually liked, prized, esteemed, desired, approved or enjoyed by anyone is valuable. It is defined as "the moral and aesthetic principles, beliefs and standards that give coherence and direction to a person's decisions and actions" (Rowntree, 1981). The science and theory of value – Axiology – coexisted with man and formed the core of human life in all civilizations. Values are vital to any

society because they serve as criteria for selection of action. Values also act as the base for judgement, preference, choice or rejection.

Some Views on Values

Mehndirata (1997) discusses different views and classification of values in great length. The very relevant ones are discussed below.

Allport's view - "The term, value implies the relative prominence of the subject's interest or the dominant interest in personality (p. 952).

John Dewey's view – "The value implies primarily to prize, to esteem to appraise, to estimate; it means the act of cherishing something, holding it dear and also an act of passing judgement upon the nature and amounts of values as compared with something else" (P. 952).

Classification of Values

Plato classified values on the basis of ultimate realities. These are, "Truth, Beauty and Goodness". These are the basic values of life which were enunciated by the Indian thinkers as "Sathyam, Sivam and Sundaram" (P. 956).

The NCERT (1979) classified values as aesthetic values, moral values, economic values, recreational values, social values and religious values. There are 84 values suggested by NCERT. They are presented below.

- | | | | |
|----|----------------------------|----|---|
| 1 | Abstinence | 2 | Appreciation of Cultural values of others |
| 3 | Anti - untouchability | 4 | Citizenship |
| 5 | Consideration for others | 6 | Concern for others |
| 7 | Co-operation | 8 | Cleanliness |
| 9 | Compassion | 10 | Common cause |
| 11 | Common good | 12 | Courage |
| 13 | Courtesy | 14 | Curiosity |
| 15 | Democratic decision making | 16 | Devotion |
| 17 | Dignity of the individual | 18 | Dignity of manual work |
| 19 | Duty | 20 | Discipline |
| 21 | Empathy | 22 | Endurance |
| 23 | Equality | 24 | Friendship |
| 25 | Faithfulness | 26 | Fellow-feeling |
| 27 | Freedom | 28 | Forward look |
| 29 | Good manners | 30 | Gentlemanliness |
| 31 | Gratitude | 32 | Honesty |
| 33 | Helpfulness | 34 | Humanism |
| 35 | Hygienic living | 36 | Initiative |
| 37 | Integrity | 38 | Justice |
| 39 | Kindness | 40 | Kindness to animals |
| 41 | Loyalty to duty | 42 | Leadership |
| 43 | National unity | 44 | National consciousness |
| 45 | Non-violence | 46 | National Integration |
| 47 | Obedience | 48 | Peace |
| 49 | Proper utilization of time | 50 | Punctuality |
| 51 | Patriotism | 52 | Purity |
| 53 | Quest for knowledge | 54 | Resourcefulness |
| 55 | Regularity | 56 | Respect for others |
| 57 | Reverence for old age | 58 | Sincerity |
| 59 | Simple living | 60 | Social justice |
| 61 | Self-discipline | 62 | Self-help |

63	Self-respect	64	Self-support
65	Self-confidence	66	Self-study
67	Self-reliance	68	Self-control
69	Self-restraint	70	Social service
71	Solidarity of man kind	72	Sense of social responsibility
73	Sense of discrimination between good and bad	74	Socialism
75	Sympathy	76	Secularism and respect for all religions
77	Spirit of enquiry	78	Team work
79	Team spirit	80	Truthfulness
81	Tolerance	82	Universal Truth
83	Universal Love	84	Value for national and Civic property

According to Ruhela (1986) values are of two types. They are socio-ethical values-horizontal values; and those related with personality traits – vertical values. They help a person in his self development that is moral upliftment. Vertical values are eternal in nature and hence relevant even today and will remain relevant in future also. Moral values are such values.

Mehndirata (1997) had classified values as social values, moral values, cultural values, and secular values which are presented in table 1.

TABLE 1
Classification of Values by Mehndirata

Social Values	Moral values	Cultural values	Secular values
Social conformity	Honesty	Non-violence	Tolerance
Discipline	Truthfulness	Spiritualism	Appreciation of universal truth
Toleration	Moral stability (Good character)	Tolerance	Mutual understanding
Social adjustment	Self control	Faith in God	Mutual Co-operation
Social sensitiveness	Reliability	Simplicity	Character
Altruism	Persistence in action	Social service	Humanitarianism
Social loyalty	Industriousness	Dignity to manual work	
Social justice	Conscientiousness	Niskama Karma	
Cleanliness	Sincerity	Courtesy	
Truthfulness	Sense of responsibility	Forgiveness	
Co-operation	Tolerance	Brotherhood of man and fatherhood of God	
Equality	Temperance and justice	Truthfulness	
Hardwork	Considerateness	Broad mindedness	
Devotion	Compassion	Purity	
Friendship	Kindness	Secularism	
Good manners	Non-violence	Universal Love	
Helpfulness	Purity	Synthesis between material and spiritual values	
Kindness	Sympathy		
Courtesy	Social service		
Respect for others	Simple living and high thinking		
Sense of social responsibility	Stead fastness		
Solidarity of man kind and team work	Self discipline		
	Courageous conviction		
	God fearing personality		

Reddy (2004) divided values into the following types.

Social values – The satisfactions that we get from friendship, love, family and members in groups are to be included in the social values.

Moral values – These are satisfactions and dissatisfactions that accrue to the individual in the course of his attempts to make right choices.

Religious values – If an object by virtue of its relation to the Divine can be called holy or sacred, it is said to have a religious value.

Intellectual values – An object or action has intellectual value if it in some way helps or hinders the findings of truth.

Aesthetic Values – Perceived objects to which the adjectives beautiful and ugly are relevant give rise in the observer to the kind of experience we call aesthetic.

Health and Physical Values – These include the values of health or physical well-being and all the satisfactions that come from the gratification of bodily needs such as hunger, thirst, rest or sex.

Economic values – An object has economic value, if it becomes a means to satisfy material desires. It is common knowledge that we value money or material things not for their own sake, but for the enjoyments they make possible. Thus economic value is instrumental rather than intrinsic.

Sources of Values

The major sources of values are considered to be the following.

- 1. Religion :** Different religions are known to prescribe different value patterns. Hindu religion emphasizes self realization or Moksha as the ultimate goal of life. Hinduism, Buddhism, Sikhism, Jainism, Islam, Christianity and other religions of the world have recommended the values like, self control, social sacrifice, non-violence, truth, social service, simplicity, purity, devotion, dignity of labour, piety, tolerance, love, high character, prayer, broadmindedness, unity, peace, happiness, welfare of mankind and attainment of bliss.
- 2. Philosophy :** Philosophy forms another important source of values. It is concerned with the study of epistemology, metaphysics, logic, ethics, aesthetics and values. Different philosophies of life and education like Materialism, Naturalism, Pragmatism, Idealism, Realism, Existentialism, Humanism, Progressivism have given rise to values of life based on their own fundamentals.
- 3. Literature :** Literature and social life are closely related to each other. Values of social life have been reflected in different forms of literature such as poems, stories, novels, dramas, etc. Generally the study of literature reveals right type of attitudes, interests, preferences, feelings emotions, and values.

4. **Science :** Science has played a tremendous role in our lives and has changed our entire existence in such important aspects of health, education, production, transportation, communication and occupational trends. It has influenced social organizations and cultural, moral, attitudinal and aesthetic sensitiveness. It is an important source of cultural values, scientific attitudes, moral values and aesthetic values.
5. **Social Customs :** Social customs form significant source of values. The cherished educational values in India today have been (as reported by Mehndirata, 1997).
 - increasing productivity
 - achieving social and national integration
 - accelerating the process of modernization and
 - cultivating social, moral and spiritual values.

Values and Morality

Most of them agreed that value orientation involves educating the heart and conditioning the mind to understand the values, foster them, and translate them into action. Truly speaking moral education means the education of the heart. At present the moral and social values are disintegrating and therefore it is essential that education for moral values should be imparted. Some of the moral values like honesty, truthfulness, good character, self-control, tolerance and sense of responsibility are to be practiced in our life.

Character good or bad, is considered to be observable in one's conduct (Walberg and Wynne, 1989). Thus character is different from values in that values are orientations or dispositions whereas character involves action or activation of knowledge and values. From this perspective values are seen as one of the foundations for character. In the context of the model of human behaviour presented in the site (Huitt, 1996) values include both cognitive and affective components, but not necessarily conative or behavioural components. Character includes all four components.

In terms of defining good character educators stated that this should include developing,

- moral responsibility and sound ethical and moral behaviour;
- capacity for discipline ;
- a moral and ethical sense of the values, goals and processes of a free society;
- standards of personal character and ideas.

Indian culture is basically founded on morality. The 'Gurukula' system concentrated on the development of the child as a social and moral being. But now-a-days many factors affect the value system. Whatever may be the factors, the yesterday's sublime values which were considered as precious as one's own life earlier are now substituted by money and power.

In Gandhiji's opinion all knowledge is useless without a good character. According to him "...the end of all knowledge must be the building up of character" (Sharma, 1992, p. 194). Character building is the moral ideal of education.

Developing desirable values in children is the main objective of moral education. "A value is something which one considers worthy of possession" (Rao, 1986, P. 84).

John Wilson and William Kay, as detailed below, think that the objectives of moral education should be in terms of moral principles, moral traits, moral attitudes etc. rather than in terms of values.

Wilson (1967) suggests five moral components; They are,

- i) A consideration for others (includes virtues like kindness, sympathy, altruism, courtesy, co-operation etc.)
- ii) An awareness of feelings of one's own and in others (includes virtues such as magnanimity, nobility, altruism etc.)
- iii) Ability to collect data (includes reasoning, patience, endurance etc.)
- iv) Ability to take decision (consists of justice, temperance, wisdom etc.)
- v) Will to act on the decision (consist of courage, dutifulness, responsibility etc.).

Kay (1975) suggests that a morally sound individual must possess the four primary moral attitudes namely Autonomy, Rationality, Altruisms and responsibility.

From referring to books about value classification it is found that morality, ethics and human values are synonymous. The ultimate aim of value inculcation is inculcation of moral values. Moral values are root values which take us out themselves and inspire us to be good and to do good to others. Moral values form an important part of the life of an individual and deal with the notions of right and wrong, and good and evil. That is in the educative process the promotion of moral values is imperative.

As morality has come to substitute 'values' it is worthy to think of Moral development and, therefore, the theories of Moral development are discussed next.

ii) Theories of Moral Development

Moral development is the onset and growth of an individual's ability to determine right from wrong, resulting in appropriate ethical behaviour. This is the aim of moral education. The curriculum, co-curriculum, hidden curriculum, the school atmosphere, and the teacher act as the sources for value education. To promote moral education whether formally or informally requires a similar understanding of the child's level of development. So

theories of moral development will provide a base for children's level of moral thinking.

1. Jean Piagets' theory

Piaget (1932) is among the first psychologists whose work remains directly relevant to contemporary theories of moral development. His research findings show that like intellectual development value development also takes place in stages and follows a regular sequence. Young people can be identified by distinctly different types of moral reasoning and these characterize different stages of moral development. In this view, people go through similar stages of moral development. Moral development proceeds developmentally in a stepwise sequence through the various stages of moral reasoning . The capacity for higher reasoning resides in an individual in a particular form and through the individual's repeated encounters with his or her environment. So the environment should be morally stimulating and morally challenging. A characteristic feature of this approach is that these stages of development are irreversible. Once a particular stage of moral thinking is reached, it is not possible to go back to a lower stage. Further the stages of moral reasoning are invariant. People do not skip from stage two to stage four.

Lawrence Kohlberg's theory

Kohlberg (1969) modified and elaborated Piaget's work and his theory has been undergoing changes over the years, but in its most well-known form he describes six stages of moral thinking. These are as follows :

- a) Stage 1 - Heteronomous morality or punishment and obedience orientation.
- b) Stage 2 - Naively egoistic orientation or individualism. Instrumental purpose and exchange.
- c) Stage 3 - Mutual interpersonal expectations, relationships and interpersonal conformity.
- d) Stage 4 - Social systems and conscience or the law and order orientation.
- e) Stage 5 - Social contract orientation.
- f) State 6 - Orientation towards the decision of conscience and towards self chosen ethical principles.

The goal of moral education is to encourage individuals to develop to the next stage of moral reasoning. Development is not merely the result of gaining mere knowledge but rather consists of a sequence of qualitative changes in the way an individual thinks. Within any stage of development , thought is organized according to the constraints of that stage. An individual

then interacts with the environment according to their basic understandings of the environment. However the child will at some point encounter information which does not fit into its world view, forcing the child to adjust the view to accommodate this new information. This process is called equilibration, and it is through equilibration that development occurs.

According to Kohlberg the most common tool for doing this was to present a **moral dilemma** and require students to determine and justify what course the actor in the dilemma should take. Through discussion students should then be forced to face the contradictions present in any course of action not based on principles of justice or fairness. In his view, moral education required more than individual reflection but also needed to include experiences for students to operate as moral agents within a community.

3. Elliot Turiel's theory

According to Turiel's domain theory (1971) the child's concepts of morality and social convention emerge out of the child's attempts to account for qualitatively differing forms of social experience associated with these two classes of social events. Actions within the moral domain have intrinsic effects on the welfare of another person. The core features of moral cognition are centred around considerations of the effects which actions have upon the well-being of persons. Morality is structured by concepts of harm, welfare and fairness.

The implications of domain theory to value education are several. Moral education may be grounded in universal concerns for fairness and human welfare and is not limited to the particular conventions or norms of a given community or school district. The teachers' analysis and identification of the moral or conventional nature of social values issues to be employed in values lessons. Such an analysis contributes to the likelihood that the issues discussed are concordant with the domain of the values dimension they are intended to affect. A related function of the teacher would be to focus student activity (verbal or written) on the underlying features concordant with the domain of the issue. Thus students dealing with a moral issue would be directed to focus on the underlying justice or human welfare considerations of the episode.

4. Carol Gilligan's theory

Gilligan (1982) suggested that a morality of care can serve in the place of the morality of justice and rights expounded by Kohlberg. In her view the morality of caring and responsibility is premised in non-violence while the morality of justice and rights is based on equality.

Gilligan's work has contributed to an increased awareness that care is an integral component of moral reasoning. Her work have emphasized efforts to foster empathy and care responses in students.

5. Norman J. Bull's theory

Bull (1969) identifies four distinct stages of moral development; these are, Anomy, Heteronomy, Socionomy and Autonomy. According to him value development is a progression from one stage to another. At the stage of Anomy the child is said to be amoral. The child's behaviour is controlled by his instincts and pleasure or pain as a result of natural consequences. If proper training is not given at this stage it will continue to be amoral. At the stage of Heteronomy, the adult through reward and punishment controls the child's behaviour and it is disciplined by artificial consequences. Bull is of the opinion that the seeds of autonomy are to be sown at this stage which is strongest at the ages seven to nine. Heteronomy is a stage of external control which leads to a stage on external-internal control namely socionomy. During this stage social forces shape the child's moral judgement. In the last stage the child has a self- rule and this stage is the summit in moral development. He imposes moral codes on himself by himself. This is the stage at which major aspect of conscience, the ego-ideal develops.

6. Social Learning theory

The proponents of this theory are Locke, Watson and Skinner. This theory focuses on moral behaviour (Husen and Postlethwaite, 1985). This view tends to look at human nature as a relatively blank slate on which society writes the experience of the individual. The family, social class, the

institutions, all of which contribute in varying degrees to the individual's learnings. Sometimes the moral lessons which are written on the slate are good lessons that are learned well. Sometimes they are morally poor lessons that are poorly learned. Social learning theorists used the term- *Prosocial* instead of 'moral' or ethical terms. They speak of the need to develop prosocial-opposite to antisocial behaviour in the young.

According to social learning theorists, parents are the culture's agents for the transmission of the key prosocial behaviour. And while parents have a primary responsibility to teach prosocial behaviour the school too has a role.

According to them moral development is a matter of shaping someone's behaviour until it conforms to the shaper's, presumably societies desires.

7. Psychoanalytic theory

Its founder was Sigmund Freud. The most prominent current spokesman of this theory is Bruno Bettelheim (Sankhdher, 1999).

This theory is rooted in a total view of personality which is influenced by *the id, the ego* and *the super ego*. The moral development of youth is a major part of the Freudian Psychological development. Freud states that human being should control his irrational impulses for moral upliftment. Parents induce good behaviour pattern upon their children and ultimately this

pattern promotes welfare of the individual as well as society in which they form an integral part.

Extreme emphasis is felt that parents influence the child for his moral development, from the psycho-analytic point of view. In the absence of such responsibility of the parents the children fail to do good deeds.

Role of Emotions in Moral Development

Moral development reflects an interaction of cognitive and emotional development. The emotional side is explained by psychodynamic theories and research on childhood empathy.

Psychodynamic theories

According to psychodynamic theories, a child internalizes the parent's values and guilt motivates people to obey their conscience. From this perspective, guilt is the primary moral emotion and the mechanism that motivates people to obey their conscience. Like guilt, anxiety and shame also are involved in moral behaviour.

The need gratifying orientation of children begins to change with the development of a conscience or superego between ages 2 and 5. Moral development thus stems from identification or internalization. Children take in the values of their parents which are at first external, and gradually make them internal by adopting them as their own. Empirically, parents and their

children do tend to think similarly about moral questions (Speicher (1994) as reported by Westen, 1996).

Research on Empathy

The motivational role of empathy or feeling for another person who is hurting also has a role in moral behaviour or development. Empathy has both a cognitive component (understanding what the person is experiencing) and an emotional component (experiencing a similar feeling). Research supports the view that empathy contributes to prosocial behaviour (Strayer (1993), as reported by Westen, 1996). Infants show primitive signs of empathy in the first days of life.

As children become better able to distinguish their own thoughts and feelings from those of others, they begin to experience genuine empathic distress - that is feeling upset for another person- which motivates moral or prosocial behaviour. As children get older, they respond more accurately to cues about what other people are feeling. By adolescence a more mature form of empathy emerges as individuals begin to think about suffering that exists beyond the immediate moment and hence become concerned about broader issues.

According to Sharma (1998), certainly children need to learn to control their emotions. It is through moral education, helping them to attain, control of their feelings rather than controlling them for them or establishing

unconscious control mechanisms within them. Education thus must help us to understand our emotions in order to give us this kind of conscious control of them.

The moral educator must be concerned to develop in his pupils the ability not only to sympathise with other peoples' feelings or to understand them, but also to feel for them to have empathy with them, even to love them. Here the focus is pointing to the role of the teacher.

Emotional Intelligence and Values

'Emotional Intelligence' is a relatively new term coined by John Mayer and Peter Salovey to describe a person's ability to understand one's own emotions, the emotions of others and act appropriately based on these emotions. Emotional Intelligence has its roots in Social Intelligence introduced by Thorndike.

Mayor and Salovey (1993) quoted by Sudarsan (2002) say, "Emotional intelligence is the type of social intelligence that involves the ability to monitor one's own and other's emotions, to discriminate among them and to use the information to guide one's thinking and action".

The term had been popularised by the writings of Goleman (1998). According to him Emotional Intelligence refers to the capacity of recognising

our own feelings and those of others for motivating ourselves and for managing emotions well in ourselves and in our relationships.

The emergence of the Emotional Quotient gave the explanation that people with high Intelligence Quotient might not necessarily be successful and a theory that true intelligence is actually a combination of both Emotional Quotient and Intelligence Quotient.

An emotionally intelligent person is skilled in the following areas such as

- i) Identifying one's own emotions
- ii) Managing emotions
- iii) Motivating oneself
- iv) Recognizing others' emotions
- v) Handling relationships

Goleman (1998) for the first time developed a framework of emotional competencies which determines the extent of emotional intelligence acquired by an individual. An emotional competency according to him is a learned capacity based on emotional intelligence that results in understanding performance at work.

The earlier framework consisted of five domains or dimensions such as

- 1) Self awareness
- 2) Self regulation

- 3) Motivation
- 4) Empathy
- 5) Social skills

Lautenschlager (1997) quoted by Mangal (2003) is of the opinion that to be emotionally intelligent one must become proficient in the Four A's of Emotional Intelligence i.e., i) Awareness ii) Acceptance iii) Attitude and iv) Action. Awareness means knowing what you are feeling when you are feeling it. Acceptance means believing that emotions are biological process taking place in the body and the brain and that is not always rational. It means being able to feel an emotion without judging it. Attitudes are beliefs that are attached to emotion. There are times when the emotion follows an attitude or is coloured by an attitude. Unless the attitude is challenged the emotion will continue to be felt in the same direction. Action is the behaviour one takes based on emotion and attitude.

Conclusion

From all the above theories it can be understood that the three positions represent a theoretical background on the basis of which moral education and programmes are working. The three positions are cognitive approach, social learning approach and psychoanalytic approach. Cognitive developmental approach highlights moral reasoning through different stages and thus

effecting moral development. The other two give their role in moral feeling and moral behaviour.

All the theories provide a prominent role to teacher in moral development of children. According to psychoanalysts, schools and teachers can foster love, at the same time they give prominence to parents to train a child to love. The other factors influencing moral development of children are, peer group, community and the media. The role of text books as a source of values is proved by Haq (1973), Choudhari (1974 and 1976), Pillai (1976) Susheela (1977), Sharma (1998) and Yadav (2004).

Of all of the above factors only teacher's formal effort can be manipulated experimentally.

iii) Approaches to Value Education

Character is the prized possession of mankind and as it is so, the role of the teacher is to enable and stimulate pupils to build themselves on the foundation of moral and spiritual consciousness.

The teacher should be morally responsible towards their students and for the educational system as a whole (Sivaswaroop, 2004).

Rao (1986) opines that every teacher including the head teacher is first a moral education teacher and then only a teacher in the subject of specialization. This is the most fundamental and basic requirement for the

growth and development of morality among the children in any educational institution.

Fifth Survey of Educational Research published in 1997 reports that there are more than 25 studies under the theme "teachers and values". There are studies which have been conducted on teachers which include both men and women, junior and senior teachers, teacher trainees and effective and non-effective teachers.

A somewhat different view from Pareek (2004) about the role of teachers in developing values in education is that 'Are they equipped to deal with value education? If not, how could they be prepared? He suggests that we need many more programmes for teachers than for students to start with. Some crash programmes or workshops could be useful for teachers. For training of teachers in human values the programme methodologies have to be carefully designed. So some basic research is needed on teacher's present values, desirable values and the process of erosion of certain values and how the eroded but desirable values can be brought back.

According to Datta (2004), transaction of value education requires a different pedagogy. Value education should rely on discussions amongst students guided by the teachers which will be more effective if the exchange of ideas takes place around life situations. "To begin with, we can have a small number of teachers who can effectively take the responsibility and build

this new methodology of transacting value education" (P. 177). Therefore, he suggests that sufficient importance is to be given training of teachers and also consider the value education as a separate course.

Singh and Kha (2001) suggest that training of teachers is of paramount importance in the process of cultivating values among students. Prospective teachers in their pre-service programme need to be provided rigorous training to imbibe desirable values. Further appropriate experiences need to be provided to them to acquire competencies to develop values among students. They suggest NCTE, NCERT, SCERTS, DIETS and other inservice training agencies need to design appropriate programmes for inservice teachers with a view to develop the desirable values and requisite competencies amongst them.

The two important aspects of development of programmes for values and ethics in school education are framing of curricula and development and adaptation of innovative methods to inculcate values and ethics in children. It is not a subject like History, Geography or Science that needs to be taught through text books. Its importance and application must be underlined in all subjects constituting the school curriculum at all levels. For this all teachers have to understand how basics of values and ethics can be applied to their particular subjects and ensure that they form an integral part of their entire style and content of teaching (Luther, 2001).

Coming to the innovative methods to inculcate values, experts and scholars are using different terms like methods, approaches, techniques, strategies etc. in the area. They are as presented below.

Formal and Informal Methods of Value Education

The **formal approach** consists of imparting knowledge through compulsory core courses while **informal methods** consist of inculcating values among students through exemplary behaviour, indirect suggestions, participative experiences, and bringing to bear in their daily work examples of desirable models and influences. What is more expecting is an **integrated approach** where all school subjects have an element of value orientation.

According to Seetha Ram (1998) value education is a complex process which involves developing the ability to think in terms of values, the ability to do the right thing, and also the ability to feel the right emotions. Therefore, there can be no single method for value education. A variety of methods have to be employed keeping in view the age group of children.

The Direct method

In direct method there is a deliberate, systematic attempt by the teacher to teach values as a subject or an area of thought. It aims at changing the thought process through the development of thinking and reasoning. Direct method might include regular classroom instructions, talks and discussions to

develop knowledge and understanding of values, discussion of situations involving value conflicts, presenting students with value dilemmas and developing the ability to make sound value judgements. John Wilson is a staunch advocate of this method.

Rao (1986) describes the techniques, Discovery approach and Activity approach as a direct way to teach values.

The Indirect method

Value education is given indirectly as a by-product of teaching a particular subject. It is assumed that all educational effort is aimed at value development. Thus instruction in any subject has value development also as one of its aims. The teacher need not try to draw out the values all the time but if he has given some thought to the values underlying the scope of his subject and his work as a teacher they will imperceptibly pass into his teaching and make an impact on the student. The possible ways for this are, school environment, correlating moral education through other subjects and through co-curricular activities.

The Incidental method

Many incidents which can be labelled as morally right or wrong do ordinarily occur in every school. The advocates of this method see in such incidents opportunities for value education and want them to be exploited for

the purpose. Here every action of the child in the school is watched by the teacher. The role of teacher here is to strengthen the right bonds and weaken the wrong ones.

Rao (1986) pointed out that all the three approaches to moral education have to be used if we want to reap the maximum benefits.

Rohidekar (1998) suggested that the most powerful and effective method in inculcation of values is by personal example of teachers and students in their thoughts, feelings, and actions. This has been powerfully demonstrated by personalities like Jesus Christ, Buddha, Gandhiji and various renowned personalities.

Techniques of value education suggested by experts

The following techniques have been suggested for better learning of values by *Goel (1998)*

- Reading, listening and discussion activities.
- Enacting, modelling and role-playing type activities.
- Visual and multi-sensory experiences.
- Dealing with value dilemmas, value clarification and
- Learning by living activities.

Singh (2004) described the following methods for inculcating values among students.

- Lecture method
- Gold-fish bowl method. The meaning of this word is when a fish goes sick, it is taken out of the bowl, and put back after treatment. The same is repeated for one-by-one. In the similar way, children are subjected to physical punishment or moral exhortation whenever value problem arises.
- Providing religious education.
- Silent sitting
- Role playing
- Providing moral ideology
- Story telling
- Teacher behaviour
- Books and supplementary reading
- Activities-simulation, cultural activities, productive manual work oriented activities, health and cleanliness etc. help to inculcate values.
- Providing assembly programmes
- Social science programmes – N.C.C, N.S.S, Shramadan, etc.

Some of the methods outlined by *Pravinchandra (2003)* for better teaching of values are the following;

- Experimental method
- Activity centred method

- Problem solving method
- Participative method
- Dialectical method
- Analytical method
- Lecture method
- Story telling
- Dramatization
- Discussion and
- Situational exposure.

Singh and Kha (2001) has pointed out that Values Clarification Approach (Raths, Harmin and Simons, 1996) and Value Analysis Approach of Metcalf (1968) and Critical Thinking Experiences (Stephenson, 1998) are very relevant approaches for inculcating values among students at secondary/senior secondary and even at graduate and post-graduate levels. Besides these they suggested the following strategies also.

- Role play of situations
- Debates
- Comparing and contrasting behaviours and actions
- Discussion
- Moral dilemma situations
- Drama

- Music and dance concerts and
- Quiz programmes conversations.

According to *Mukhopadhy* (2004) a related issue in value inculcation and value education is the relevant literature or educational material. There is a lively debate about the method of transaction of value curriculum. He described about *conventional lectures on values, and experiential learning through debate on real-life situation captured in the value stories*. The field work is an important methodology in the form of NSS or Red cross, and interactive television for delivering the course on education in human values and life skills. Thus the transactional methodology for value development has to be a multichannel learning incorporating theoretical learning either by study of literature or listening to lectures and discourses, debating on cases and life incidences and practicing values in the field setting.

A number of teaching strategies were reported in the **Fifth Survey of Educational Research** to teach values among students and teachers. These are *Direct Moral Instruction* (Seetharamu, 1974), *Value Clarification Strategies* (Singh and Singh, 1986), *Critical Inquiry Approach* (Bhagia, 1986), *Jurisprudential Inquiry Model* (St. Anns College of Education, Mangalore) and *Value Discussion Model* (Dhand et al., 1993). The findings indicate that these strategies are superior than traditional method for teaching values and improving the moral judgement of the students.

Value clarification Approach

Value Clarification Approach is a process that may be used in schools or colleges to help students learn to make choices from alternate options based on individual belief system and consideration of the consequences of choosing particular options. It is an approach that tells a person what value should be or what values should not be cited within a specific situation. Raths, Harmin and Simon first explicated this process which includes seven sub processes. These are

- choosing from alternatives
- thoughtfully considering the consequences of alternatives
- choosing freely
- prizing and cherishing
- publicly affirming
- acting repeatedly and
- acting with a pattern of consistency

These processes were also described as a 'criteria' for a value.

Ignatian Pedagogical Paradigm (IPP)

Ignatian Pedagogical Paradigm presents a new way of looking at how a teacher is to teach. The focus of IPP is a value based pedagogy. It involves a particular style and process of teaching.

The Ignatian Pedagogical Paradigm comprises three main elements: experience, reflection and action. For such a learning process to be successful, it must include a pre-learning element, that of context, and a post-learning element, that of evaluation.

Context:

This is concerned with all the factors that help or hinder the learning process.

Experience:

Ignatian pedagogy aims to ensure that the student will have a full learning experience of mind, heart and hand. The term experience is used to describe any activity in which in addition to a cognitive grasp of the matter being considered, some sensation of an affective nature is registered by the student.

Reflection:

This is the KEY to the Ignatian pedagogical paradigm. Reflection is the process whereby the student makes the learning experience his/her own, gets to the meaning of the learning experience for self and for others.

Action:

Action is not mere activity. It is rather the student's attitudes, priorities, commitments, habits, values, ideals, internal human growth flowing out into actions for others.

Evaluation:

This is an evaluation of the student's growth in the acceptance of the school's aims and objectives for the student.

The conventional strategies of moral education are direct moral instruction and formation of moral habits with the help of reward and punishment. Research evidence and common observation will say these strategies work well when the critical faculties of the child are not fully mature. **But when the child grows older and starts challenging the conventional patterns of moral behaviour out of his own independent thinking and reasoning, then a better strategy will be to develop rational thinking, a sense of justice and a genuine concern for others, by identifying oneself with others.** The child then should be exposed to situations involving moral conflict and dilemma in which he learns to take moral decisions for himself.

These theoretical references along with survey of related studies led the investigator to concentrate more on '*Models of Teaching*' which is a new approach to impart value education.

Models of Teaching: A New Approach to Impart Value Education

A model of teaching consists of guidelines for designing educational activities and environments. It specifies ways of teaching and learning that are intended to achieve certain kind of goals (Joyce and Weil, 1978, p.2). (An overview about Model of Teaching is presented in the Methodology Chapter).

Research studies on the model of teaching are found to be gaining increasing popularity. The model of teaching usually adopted by the researchers are those developed by Joyce and Weil (1980). According to Joyce and Weil (1990) each model guides us as we design instruction to help students achieve various objectives.

Models of teaching contributed its role in the area of value education also. Two major models they suggested for value education are Jurisprudential Inquiry Model and Role playing.

Jurisprudential Inquiry Model

Pravinchandra (2003), Singh (2004) and Vijayan (2005) described this model in detail and found that this is an effective strategy and to match the Indian classrooms for teaching values. To Pravinchandra this method is based

on Socratic dialogue, the dialogue occur between the teacher and the learner. Teacher puts before the students challenging situations, in order to make them aware of values. He adds, this method can be easily used with adolescents as well as adults. The grown up adolescents can be well taught with the help of this method.

The studies of Agarwal (1987), Hasan (1987), Dubey (1989), Singh (1992) and Tiwari (1992) proved that the model is effective in developing social competence and values.

Vijayan (2005) described JIM as a novel strategy for effective inculcation of values as getting momentum in social science teaching.

Singh (2004) pointed out a notable advantage of JIM as the teacher is very powerful person who initiates the question or inquiry during the process, so the method can be easily linked with the climate of college. Because of its simplicity and application in the Indian classroom settings, JIM of teaching seems to be quite useful.

Role playing

Role playing is another important model like JIM coming under the Social Family and is effective for developing moral values in students. This model is designed by Fannie and Shaftef (1982) quoted by Joyce and Weil (1992) specifically to help students study their social values and reflect on

them. It also helps students collect and organize information about social issues, develop empathy with others, and attempt to improve their social skills. The model asks students to 'act out' conflicts, to learn to take the roles of others and to observe social behaviour. This technique can be used with students of all ages.

Conclusion

Singh and Kha (2001) opined that "there can hardly be any single strategy for value cultivation in different contexts at different levels. Research studies need to be conducted to determine empirically the effectiveness of different value cultivation strategies in different settings".

The references related to value inculcation provides many strategies/approaches/methods. Whatever may be the method the aim of inculcating values is to be given more importance. The theoretical references highlight the need of value oriented education at all levels. But at the same time the traditional methods/approaches used for the same have many drawbacks.

The references had pointed out the effectiveness of JIM in its rational approach and its role in development of moral thinking in children. Therefore, an experimental study in which the effectiveness of JIM is to be proved first in a practical way. Hence the investigator decided to conduct a study using JIM to orient teachers for value development in children.

B. SURVEY OF RELATED STUDIES

The survey of related studies helps the researcher to understand the problem in depth; it also acts as a guide for further investigation and for developing tools for the study. So the investigator has done the review of previous studies in the relevant area of the present study. Only studies done in the last 40 years are gone into.

Rani (1968) conducted an exhaustive study on moral development of children, selecting a sample of 350 children ranging from 6 to 11 years. The main objectives were, to study the pattern of morality among children and the developmental trends and some of the influences operating on the process. The major findings were, age was found to be an important variable influencing the knowledge of moral values. Knowledge of moral values seemed to increase with an age; The knowledge of various moral values did not seem to vary much in the two sexes; Children receiving moral instruction in schools showed a similar pattern of different values to that of those not receiving such instruction; The mental ability of children did not considerably influences their knowledge of moral values, but its influence showed an increasing tendency with the maturity of the children; Children in the beginning were quite immature and showed a clear emotional reaction for the different moral values but as they grow older, they showed maturity; Parents' influence in the acquisition and development of moral values in

children was of vital significance; Other important sources for such knowledge were teachers and books.

Borg et al. (1970) have also demonstrated that minicourses and other staff development techniques can be used to help teachers learn complex skills and strategies.

Ward (1971) developed a training schedule for teachers based on operant conditioning procedures and designed to help them eradicate disruptive behaviour of children in the infant and junior school.

Bhowmick (1977) conducted a study on the systems of moral training of students that was in vogue in ancient India. The findings were, as the moral training prevalent in ancient India had practical bias, it helped in moulding the character of the students as well as developing their body and mind. This system of moral training had a tremendous influence on the people in moulding their character and developing their mind and body.

Joyce (1978) urges teachers to acquire strategies by first studying theories of strategies, then seeing them demonstrated as a whole, practicing their parts, synthesizing them in future practice, and finally applying them in classroom. His assumption is that teachers need several teaching strategies because all students do not generally learn from a single one.

Kalra (1978) studied the moral judgement in children belonging to different mental and socio-economic levels. He selected 1000 girls from 15 schools of the western zone of Delhi. On the basis of intelligence, the sample was divided into high, average and low groups. Each group was subdivided into three subgroups on the basis of their socio-economic status. The results revealed that intelligence was positively related with the level of moral judgement and the three levels of socio-economic status. The socio-economic status was positively related with the level of moral judgement at all levels of intelligence.

Roy (1980) found that family and friends were influencing factors of the development of moral and social values in young boys and girls.

Bandhyopadhyay (1981) carried out a study on growth and development of moral judgement in children. The objectives were to adapt Piaget's stories and to study the growth of moral judgement with age. The findings showed moral judgement grew with age. In moral judgement girls showed more maturity than boys in attitude towards justice, equality and authority and collective responsibility. Both boys and girls of missionary schools where some moral lessons were given in some allotted hours of a week, were better in moral judgement than children of non missionary schools where no time was allotted for moral lessons.

Kumari (1981) conducted a study on personality needs, moral judgement and value patterns of secondary school teachers and found that teachers of both the sexes expressed keen moral sense.

Massey (1981) conducted a study on the effects of training in the formulation and usage of behavioural objectives on the classroom verbal behaviour of inservice teachers. He found that the inservice teachers after training in the formulation and usage of behavioural objectives exerted indirect influence on students, rewarded students responses by praise and encouragement attended to students' ideas and integrated them into class discussion by asking more and more questions.

Pinkeerani (1981) studied about the behaviour of students in and out of school as related to their moral education. The sample consisted of 200 students, 120 teachers and 200 parents. The findings showed significant differences in the ratings of the students, the parents and the teachers on the behaviour of the students. The overall behaviour of the students getting formal education was significantly different and comparatively better than the behaviour of those who were not getting moral education. Yet the out of school behaviour of both the groups of students was not found to be significantly different from each other.

Srivasthava (1981) had done a psychological study of the development of moral ideas among university students. The findings were, for every

increase on the educational ladder there was corresponding decrease in moral values. Female university students were significantly higher on morality score than their male counterparts.

Prahallada (1982) observed age, sex, and educational level differences in moral judgement. He used stratified random technique in drawing samples from science, arts, and commerce colleges. While differences in moral judgement were attributed to sex, level of education, and age, moral values were related positively to socio-economic status and personality adjustment.

Zaman (1982) carried out a study of social, religious and moral values of students of class XI and their relationship with moral character traits and personality adjustment. He found that moral value has the greatest influence on character traits. The educational implication of this study is that the development and strengthening of a healthy social, moral and religious value system among students should be a very important function of the secondary schools which would help in solving problems of student unrest and discipline.

Gupta (1984) studied moral development of school children. 831 students (483 boys and 348 girls) were selected by stratified random technique. His findings were (1) children from Government schools were superior in moral reasoning (2) co-education schools were superior over non co-educational schools (3) Girls were superior to boys in moral reasoning (4)

Girls showed faster development in moral judgement and (5) Boys and Girls did not differ significantly in their judgement with reformatory zeal.

Kothari (1984) carried out a study of the development of moral concepts among first generation learners and second generation learners in Indore. The findings were better interpersonal relationship with teachers encouraged the development of moral concepts among their students. Treatment given in the form of instructional materials was found to be more effective in developing the selected moral concepts among the first generation learners than among the second generation learners. Educational implication of the study is that text book writers should be encouraged to write books which would help in the development of moral concepts.

Lewis (1984) studied the academic, and socio cultural influences on the development of values among students in two year's colleges. Females rated school environment higher in respect of its influence on the development or orderliness and friendliness along with moral and religious values.

Soni's (1984) attempt was to construct and develop a moral judgement scale which could be used to find the level of development of moral judgement of school going children of a rural area of Delhi; and the difference between boys and girls in their moral judgement. He found out that girls had better value systems than boys.

D'Lima and Puri (1985) conducted an experimental study of the effectiveness of creative value oriented education on the value pattern of the pupils. The chief objectives were to find out the effectiveness of the brain storming technique in providing value oriented education and to find out the relative effectiveness of the brain storming technique and ordinary method of teaching in providing value oriented education. The pre-test-post-test parallel matched group design of experiment was employed for the study. He found that a significant difference was there between the pre-test-post-test mean scores of pupils with regard to the value of righteousness, significant effect on the attitude of pupils towards the value righteousness, found superiority of the technique over ordinary method of teaching in providing value oriented education.

Sahoo (1985) examined the association of sex, grade, and residential pattern with the moral reasoning ability of 80 male and 80 female; seventh and eighth graders, half of whom were from rural and half from urban high schools. Rural subjects showed a greater degree of moral reasoning than urban subjects and females demonstrated a greater degree of moral reasoning than males. There was also a significant interaction between residential area and grade; urban seventh graders showed more moral reasoning ability than urban ninth graders and rural ninth graders were superior over rural seventh graders.

Bhargava (1986) studied the development of moral judgement among children at concrete and formal operational stages and its relationship with the variable of home and educational environment. The objectives were to identify from the concrete operational stage (8⁺ to 11⁺ yrs) to the formal operational stage (12⁺ to 13⁺ yrs) and to examine the variables of educational environment with moral judgement in the two levels. The findings were there was a significant development of moral judgement from one age group to the next successive age group. Moral judgement is more at the formal operational stage. Teaching methods and co-curricular activities were positively related with moral judgement. Another interesting fact was that both boys and girls scored equally well on moral judgement.

Kapur (1986) conducted a study on the moral education of primary school children and found that text books were a major repository of Hindu religious value and the science curriculum reasserted the sexual division of labour as the girls learnt home science while boys learnt science.

Rao (1986) cites with illustrations different instructional strategies in moral education. The direct approach made use of precept and authority. Stories, Fairy tales, Fables, Biographies, Proverbs, Slokas, Poems, Parables from suitable background are effective for inculcating values. The school government offers excellent training in leadership and democratic functioning. The school environment, correlation with teaching subjects and a

variety of co-curricular activities come under the indirect approach. Work experience sets the ground for a training in essential values. Incidental approach is yet another effective way to inculcate values.

Singh and Singh (1986) conducted an experimental study using value clarification (V.C) strategies in comparison with traditional method to teach values to B.Ed students. Their conclusions are 1) VC's are more effective than conventional methods for teaching the values of dedication to teaching profession, 'co-operation' and 'nationalism'. 2) VC's are found to be more effective than traditional methods in the inculcation of scientific outlook.

Abhyankar (1987) conducted a study which focused mainly on the need for the value education in India today. He found that there is a vital and urgent need for value education at all levels of schooling in India today and to inculcate the values like love, self-realization, brotherhood, service responsibility, sympathy, non-violence, dutifulness, tolerance, freedom, courage, self-reliance, dignity of labour, honesty, truth and fearlessness.

Agarwal (1987) conducted a study to know the effect of JIM on development of values among the post graduates students. This study revealed that JIM was not found to contribute significantly to the development of values such as theoretical, economic, aesthetic, religious, etc.

Hasan (1987) studied the effect of intelligence and JIM on the development of social competence. The study confirmed that intelligence had

no effect on the development of social competence; but treatment through the model showed significant positive effect on the development of social competence.

Pratibha (1988) conducted an experimental study on moral development in children. Results indicated that moral judgement was normally distributed. Intelligence played a vital role in the development of moral reasoning. The moral programme and approach of instruction, along with enriched content enhanced the moral standard of children irrespective of the psychogenic variables.

Dubey (1989) conducted a study to know the effectiveness of JIM on development of social problem solving ability and secularmindedness. The study found that the students' exposure to jurisprudential Inquiry teaching session develops their social problem solving ability and secular mindedness.

Hall (1990) found that the development of moral values is possible by a number of teaching strategies. The strategies include the techniques of self-discovery, the provision of learning environments that encourage growth and the practice of specific skills.

Koikara (1991) observed that teachers should be given adequate training to make them competent and effective value educators. And the institution should provide the time and resources necessary so that value

education classes may not be a burden for the teachers and the students but a significant and beautiful part of their whole educational experience.

Mac Callum (1991) conducted a study to investigate the moral development of teachers. An inservice course on student discipline was offered at two secondary schools at Australia. The study found that teachers' moral judgement was related to various aspects of discipline and therefore that more attention need to be paid to the development of teachers' moral judgement during education courses. The educational programme could include the presentation, a discussion of theories of moral issues inherent in the teaching learning environment.

Pal and Misra (1991) studied the effectiveness of JIM in developing the social consciousness and the ability to solve social conflicts among pupils of class IX. It was found that the individual JIM approach was less effective than the group approach.

The instructional and nurturant effects of JIM were studied by Pandey (1991). Here the intelligence and socio-economic status of the pupils were found to be interacting with the development of certain values such as equality, tolerance and justice.

Mohanty (1992) compared JIM with Concept Attainment Model in development of moral concepts and judgement and the personal values of Class VIII pupils. The findings of the study indicated JIM was more effective

for developing the moral judgement and personal values of students where as CAM was effective in developing moral concepts.

Seshadri et al. (1992) suggested a range of techniques and activities such as, reading, listening, and discussion activities; visual and multi sensory experiences, enacting, modelling and role-play type activities dealing with value dilemmas, value clarification and learning by living activities.

Sharma et al. (1992) studied moral judgement as a function of intelligence, birth order, and age of the children. They investigated the effect of these variables on moral judgement of 150 boys. The factorial design of the study was 2x2x2 with two levels of intelligence (higher/lower), two birth orders (first born/last born) and two age levels (six to seven years and ten to eleven years). The results showed that intelligence, birth order and age are important factors influencing moral judgement. None of the interaction was significant.

Singh (1992) conducted a study on the effect of Jurisprudential Inquiry Model of teaching on value preference and social behaviour of school students. It draws upon that value preferences and social behaviour are the two determinants of behaviour pattern of every individual. Therefore of necessity teachers, educators, parents and students-in fact all-have to adopt methods like jurisprudential inquiry procedure in teaching, discourses and general dealings in order to build well-integrated value oriented citizens and

pave the way for value-based society, which is so crucial for the survival of the world community.

Tiwari (1992) studied the effectiveness of JIM for developing social competence, civic sense, and attitude towards fundamental rights among the VIII grade students. This investigation proved that Jurisprudential Inquiry teaching sessions develop attitude towards fundamental rights but the model was not found effective in social competence and civic sense.

Dhand et al. (1993) compared the effects of the implementation of the value discussion model in terms of value clarification and its dimensions on Canadian and Indian undergraduate students. The experimental group was treated through the value discussion model and the other two control groups followed their routine activities. The Value Clarification Scale (VCS) was used to collect the data. The data were analysed through ANOVA followed by the t-test. The value discussion model group was found to be superior to the control groups.

Sarangi (1994) studied the bases and implications of moral education in schools. His objective was to study the extent of utilization of moral education and the interest of children in moral education. The conclusions are (1) There is a necessity of imparting moral education at Primary school level, (2) guest lectures, discussions, social service programmes are organized for awakening moral values and instilling good behaviour, co-operation and

helpfulness among children (3) Special period of moral education is taken by specially trained teachers (4) Moral talks and question answer methods are useful in imparting moral education (5) Newspapers, magazines, radio broadcasts and tapes are used by teachers for moral education. From the students' opinion (1) Moral education should be carried out in schools through discussions and moral talks in a special moral education period. (2) TV programmes and books are preferred for learning ideas of moral education. (3) All subjects of learning are suitable for moral education. Sarangi also observed that the conceptual content and pedagogical principles of moral education should be made available to teacher. This will bring about a systematic understanding of the moral domain and how to initiate pupils into it. Above all a planned teacher training programme in moral education should enable teachers to become aware of the values that they consciously or unconsciously propagate via the hidden curriculum.

Hassija (1995) feels that there is an immediate need to change attitudes and to inculcate moral and humanistic values. The author opines that for different branches of knowledge, profession, community and sections of the society, essential values must be imbibed to make this world a better place to live.

Kirschenbaum (1995) presents the idea in his book that there are 100 ways to enhance values and morality. The approach presented in this book is a practical one.

Rajput (1995) investigated on the process of inculcation of values. It is emphasised that the quality and character of teachers can be developed by inculcating and internalizing humanistic, ethical and moral values. The author points out that a motivated teacher who is conscious of social responsibility can impart quality education in relation to values.

Usha Sri (1995) conducted an evaluation of value education provided in secondary schools. From the weighted scores, it was found that in text books of VIII, IX and X standards, the greatest attention is paid to examples given from life situations. 'Desirable values are emphasized wherever possible' a logical approach to problem solving is emphasized. Questions given call for value judgement and good and glory of all religion is highlighted.

Demmon (1996) addresses in his paper the pros and cons educators may encounter if they are involved in a character education programme. The results indicated strong support from parents, school employees, and the community for development and implementation of moral and character development in public education.

Rani (1996) spoke of three psychological approaches, viz., psychoanalytic, cognitive development, and learning theories for value development. The schools and the curriculum should follow the approach for value education are suggested by John Dewey i.e., to discuss values rather than forcing them on children.

Usha Sri (1996) traces the process of value development and internalization of values by individuals. She suggests that conflicts between values cherished by an individual and values practiced in the society can be resolved by autonomous functioning with inner control and a wholesome consciousness.

Ambrose (1997) has the opinion that the role of the teacher is to make sure that students are truly exposed to real problem so that they leave the classroom troubled, disturbed, and mentally shaken up. The goal of value education is to expose students to several solutions to force them to mull over than and examine them from all angles in a spirit of objective inquiry so that once convinced they are able to commit themselves to work for the transformation of structures.

Dagar (1997) stresses that value education and moral education in particular constitute the sine qua non of education. It is emphasised that moral traits cannot be effectively inculcated by direct instructions. Orientation of all

working teachers via special seminars and conduction of moral education are a pre requisite.

Sharma (1997) highlights the three dimensions of value education such as value education and its conceptual frame, value education as personality enrichment of the teachers and students, and value education through subject teaching. The students' module should have combination of three teaching techniques such as direct value education, value education through subjects and programmed value education. The teacher should also evolve the values in their work culture.

Shukla (1997) highlights different approaches of value development such as philosophical, psychological, cognitive development, learning theories, and value analysis model. According to him the development of the individual and society is best facilitated by a synthesis of the traditional and modern values on a selective basis. Teachers and parents are to be the role models in the process of value inculcation.

Chilana and Dawan (1998) focuses on the theoretical background of values in the framework of education. It emphasized that the role of school teacher is crucial in any action programme to nourish the values initially taught at home.

Arora (1999) opines that education should be designed to achieve higher aim of life : imparting of value based education is a challenge in front

of the educator. The responsibility is to be equally shared by the teacher and parents to impart moral values to the youth.

Joshi (1999) lays focus on the role of teacher in value education which is irreplaceable. The author suggested that the teachers should themselves be value oriented and enthusiastically participate in different programmes of value education.

Saraf (1999) highlights the curricular and co-curricular activities to imbibe human value in students. The pivotal role of the teacher who is acknowledged through out the world as the king-pin, has been presented. Teacher-parent co-operation and the role of media in the promotion of values is indispensable.

Barbara (2000) conducted research on preservice teacher education programmes and found that United States do not offer significant instruction in the methodology of teaching character, morals, values, and virtue. The paper contains four sections. In this the third section discusses inservice character-education programmes. Future teachers need to be specifically taught how to meet the overriding goals of education to make students both intellectually smart and morally good.

Kishore (2000) stresses on the need of incorporating value education in science teaching. The author suggests that the role and attitude of science

teachers in value education must be positive and they should be able to resolve the value conflict of children.

Passi and Singh (2000) observed that some of the latest models of teaching which may be used for developing the various aspects of human values are rationale building, consideration, value clarification, value analysis, cognitive moral development, social action, value discussion and role playing.

Rajput (2000) highlights the policy perspective regarding the role of teachers and teacher training institutions to promote value education which has been emerging from the recommendations of different committees. It is advocated that the curriculum content of the school education must be indigenous. Value emphasis in school must form a part of every unit and activity.

Ruhela (2000) highlighted major roles of teachers, teacher-educators, researchers, and educational planners who have developed the thought provoking ideas or views to promote certain values. These values are peace, stability, integration, and democracy.

Luther (2001) had made a very persuasive case for reorganizing the school education system and to provide a central place in it for value education. In the book the author deals with a conceptual framework of value education, techniques and strategies for value education including curricula development, role of the teacher, as well as the outline of teachers' training.

Rao (2001) observed that it is the time that universities and colleges give serious consideration to reconstruct our system of higher education in respect of value orientation. The methods are,

- ❖ Organizing lectures by eminent people on themes related to moral value.
- ❖ Arrange social service or social welfare projects for the benefit of poor and disadvantaged families in society.

Seetharam (2001) opined that value education cannot be circumscribed by text books alone; teachers too play an important role. There are various practical methods and techniques of imparting value education. The author concludes that teachers and schools' role in value education depends upon the teacher's attitude and personal commitment.

Singh and Kha (2001) highlight the present educational system which ignores character training. They suggest that research studies need to be conducted to determine empirically the effectiveness of different value cultivation strategies in different settings. This is a challenge, according to them, which needs to be met by researchers working in the realm of value education.

Veeraraghavan (2001) opines that a school which make value education a serious part of its curricular transaction will require considerable

effort and experimentation, but it is the most important task of the school of the twenty first century.

Chinera (2002) classified the values into four categories; classification of values by structures, by principles, by generality, and by specificity on the basis of the review of literature. The author suggests that the fourth category is more comprehensive in its clarity and functional in its utility than the other three because this approach suggests that the relevance of a set of values under a specific content area differs in degree among and between other sets of values under other content areas.

Nagaraju (2002) opined that character training was an important component of education. Each learner was required to undergo rigorous character training and value education. In the article the author suggests that at the secondary school level, learning of social, physical, biological sciences would continue to be built around natural and social element of environment. Hence, the teachers are better to promote the values among them at this stage.

Bharat (2003) observed that teacher is the key component of an education system. Very few take up teaching because they love teaching. Science teachers have to know the art of using and applying this knowledge to create interest and arouse curiosity amongst students. This art comes with the skills which can be developed through training. when knowledge gets blended with skills, the journey of excellence begins. Leaders and managers of higher

education have to accept their skills development concept, have faith in teachers and their potential, and prepare a strategy for training which the existing teachers can take on as a journey of excellence. Training courses will help every science teacher to become more effective in encouraging students to take up careers in science.

Dhankar (2003) observed that it is difficult to arrange for special teachers, resources, and extra time for development of values in the students as already there is heavy syllabi, even then integration of value development and integration of studies is not impossible because value as such cannot be neglected as these are not only important but necessary part of education.

Joshi (2003) describes the accelerating pace of social and technological change, its effects on children, criteria for choice of values and the role of education. She stressed that the ultimate aim of education is building up of character.

Das (2004) argues that we must redesign our system of education at all levels to stress the importance of human values in human relations as well as in social development.

Anilkumar (2005) conducted a critical study of the effectiveness of English curriculum for secondary schools of Kerala to develop moral maturity among the learners. The study found that the content of the secondary school English curriculum for Kerala is rich in values. But teachers have less than 60

percent of awareness of values in the content. The study reveals that the teachers are still following activities in accordance with age old 'tradition' of teaching for academic excellence. He found that orientation of teachers is the need of the our. His suggested head - on seminars, workshops, refresher course etc. for orienting teachers in this.

Maikhuri and Shah (2005) consider education to be a major mode of developing strong and abiding values in individuals. According to them teaching of values must begin in early years of childhood, since whatever learning occurs during this period remains of lifelong disposition. They point out that Value Education must become an integral part of the entire education system and be introduced into all the educational institutions and their curricular and co curricular programmes at all levels. In their opinion along with information exposure to selected experiences through participatory activities and opportunities for translating them into action will have a lasting impact on learning of these values.

Modi (2005) has the opinion that value oriented education cannot be seen as something to do with a long list of does and does not. Here the role of the teacher becomes very important. The teacher has to put the students on the right track and encourage them by providing subtle suggestions and not merely imposing or interfering. Every subject can be a means of building good character and values can be integrated into every lesson.

Singh (2005) presented value discussion model as good strategy for discussion. In his article he describes the model by highlighting its effects, syntax, social system, Principles of reaction and support system in detail.

Thakur and Kang (2005) conducted a study to find out the relationship of school environment with development of moral values and judgement among children. They found from the study that good socio-emotion climate of the school plays a vital role in the development of positive moral values and judgement.

Vijayan (2005) conducted a critical study of the effectiveness of social science curriculum to develop values in secondary school pupils. He found that one of the major objectives of secondary school social science curriculum is the development of values. The secondary school social science content is abundantly rich with various categories of values which are hidden it. It is also found from the study that the teachers do not have at least seventy percent ability in identifying values which are hidden in the content. According to him, the secondary school social science teachers are not able to follow activities suitable to develop values through the teaching of their subject. If all teachers put their purposing effort towards the goal of value development, the students' attainment of values would have been high in all categories values. He suggested that NCERT, SCERT, NCTE and DIET may organise some inservice programme to enable the teacher to learn the know-how in adopting most appropriate teaching strategies with special focus on

value development in their students. The strategies he mentioned were JIM, IPP, Co-operative learning strategies, Investigative approach, Activity approach etc.

Baby (2006) emphasized development of values among adolescents through meta cognitive skills like self regulatory and self monitoring. These two skills can be developed through some training such as contextual programmes and exponential learning. In each stage during the training there will be a reflection and refinement. Before and after adopting the strategy extent of values should be assessed. The value thus developed will remain permanently in adolescents.

Bhatia (2006) opined that, As values cannot be taught, the teachers have to ensure that these values are upheld by the children in the process of schooling. It therefore becomes imperative for the teachers to function as role models. For helping teachers in internalizing values that should be developed in children through the schooling processes making education in human values an integral part of the curriculum of teacher education will be necessary. According to her

- A new course to be developed in values education for pre-service teacher education or
- The entire programme of teacher education to be given value orientation.

Jalajakumari (2006) found that the objectives of jurisprudential inquiry model are to help students to develop a strong stand on the public policy issue-the way to construct new knowledge. Thus the jurisprudential inquiry model can be connected with the deconstructive readings of discourse analysis which offers method for developing students' abilities to take up a stand on the social issues that they confront in daily life situations. So while teaching language, social sciences, or even science the student has to think of those issues which are controversial to develop the teaching learning process.

Kaur and Saini (2006) opined that teaching is also about inspiring students. There is a need for teachers to get themselves inspired before they can inspire others. So the teacher training programmes need to incorporate values based education. This will be helpful for reawakening to the entire teaching community so as to improve the younger generation which is utterly confused and bewildered about moral and social values of life.

C. GENERAL TREND SHOWN BY THE STUDIES REVIEWED

Altogether eightyone studies were reviewed related with the present study. A summary of the studies reviewed is given in Table 2 by classifying them in to three. These are, Studies related with development of values in general; Role of teachers and their training in development of values; and Studies related with approaches and strategies for developing values.

TABLE 2

Classification of Literature Reviewed

Studies on development of values in general		Studies on role of teachers and their training in development of values		Studies on approaches/ strategies for developing values	
Rani	(1968)	Borg et al.	(1970)	D'Lima and Puri	(1985)
Bhowmick	(1977)	Ward	(1971)	Rao	(1986)
Kalra	(1978)	Joyce	(1978)	Singh and Singh	(1986)
Roy	(1980)	Kumari	(1981)	Agarwal	(1987)
Bandhyopadhyay	(1981)	Massey	(1981)	Hasan	(1987)
Pinkeerani	(1981)	Koikara	(1991)	Dubey	(1989)
Srivathava	(1981)	Mac Callum	(1991)	Hall	(1990)
Prahallada	(1982)	Ambrose	(1997)	Pal and Misra	(1991)
Zaman	(1982)	Dagar	(1997)	Pandey	(1991)
Gupta	(1984)	Chilana and Dawan	(1998)	Mohanty	(1992)
Kothari	(1984)	Joshi	(1999)	Seshadri	(1992)
Lewis	(1984)	Barbara	(2000)	Singh	(1992)
Soni	(1984)	Kishore	(2000)	Tiwari	(1992)
Sahoo	(1985)	Rajput	(2000)	Dhand et al.	(1993)
Bhargava	(1986)	Ruhela	(2000)	Rani	(1996)
Kapur	(1986)	Seetharam	(2000)	Sharma	(1997)
Abhyankar	(1987)	Bharat	(2003)	Shukla	(1997)
Pratibha	(1988)	Anilkumar	(2005)	Saraf	(1998)
Sharma et al	(1992)	Modi	(2005)	Passi and Singh	(2000)
Sarangi	(1994)	Vijayan	(2005)	Rao	(2001)
Hassija	(1995)	Baby	(2006)	Anilkumar	(2005)
Kirschenbaum	(1995)	Bhatia	(2006)	Singh	(2005)
Rajput	(1995)	Kaur and Saini	(2006)	Vijayan	(2005)
Usha Sri	(1995)			Baby	(2006)
Demmon et al.	(1996)			Jalajakumari	(2006)
Usha Sri	(1996)				
Arora	(1999)				
Luther	(2001)				
Singh and Kha	(2001)				
Veeraraghavan	(2001)				
Chinera	(2002)				
Nagaraju	(2002)				
Dhankar	(2003)				
Joshi	(2003)				
Das	(2004)				
Anilkumar	(2005)				
Maikhuri and Sha	(2005)				
Modi	(2005)				
Thakur and Kang	(2005)				
Vijayan	(2005)				

i) Studies on Development of Values in General

Review showed that most of the studies are dealing with value development in general and all stressed the development of values in students. Abhyankar (1987), Sarangi (1994), Arora (1999), and Veeraraghavan (2001) stressed the importance and necessity of value education in schools.

Bhowmick (1977), Zaman (1982), Singh and Kha (2001), and Modi (2005) conducted studies in value education and proved the role of moral education in character development. Singh and Kha suggests that research studies are to be conducted in the area of value education which is a challenge to them. Modi has the opinion that every subject can be a means of building good character and values can be integrated into every lesson.

Luther (2001) and Thakur and Kang (2005) described the role of school in value education. Roy (1980) and Bhargava (1986) conducted studied on the role of family and friends in development of values.

Kapur (1986), Kothari (1984), Kishore (2000), Anilkumar (2005), and Vijayan (2005) conducted studies to find out the role of text books in value education. Kishore stresses on the need of incorporating value education in science teaching.

The importance of value education in adolescents are found by Nagaraju (2002) and Baby (2006). Nagaraju also found that teachers are better to promote the values among adolescents in secondary level.

Among the factors influencing moral development intelligence, age, sex, socio-economic status, and media are also studied by many. Rani (1968), Bandhyopadhyay (1981), Prahallada (1982), Lewis (1984), Soni (1984), Sahoo (1985), and Sharma (1992) have conducted such studies.

Major trends show that studies in the general classification are very many. Most of the studies highlight the importance of value education at different levels of educational ladder. Studies also proved that family, friends, school, text book all have strong influence in value development of children. So the trend shows the importance of value education.

ii) Studies on Role of Teachers and their Training in Value Education

Almost all studies highlight the role of teachers in value education. Ambrose (1997), Rajput (2000), Ruhela (2000), Seetharam (2000), Anilkumar (2005) and Vijayan (2005) proved the role of teacher in value education. Chilana and Dawan (1998) emphasized that the role of school teacher is crucial in any action programme to nourish values.

Koikara (1991), Sarangi (1994) and Bharat (2003), Kaur and Saini (2006) stressed the importance of planned teacher training programme in

moral education. Massey (1981) and Barbara (2000) found out effectiveness of training given to teachers. Dagar (1997) emphasized the need of orientation of all working teachers via special seminar on moral values.

Studies related to teachers' role and the need and effectiveness of teachers' training in moral education proved without doubt from the review.

iii) Studies on Approaches/Strategies for Developing Values

D'Lima and Puri (1985), Rao (1986), Hall (1990), Sharma (1997), Shukla (1997) and Vijayan (2005) highlight the need of different strategies to be used in value education. Joyce (1978) observed that teachers need several teaching strategies because all students do not generally learn from a single one. Dhand (1993) and Singh (2005) presented value discussion model as a good strategy. Seshadri (1992) suggested a range of techniques and activities for value education.

Agarwal (1987), Hasan (1987), Dubey (1989), Pal and Misra (1991), Pandey (1991), Mohanty (1992), Singh (1992), Tiwari (1992), Pravinchandra (2001), Singh (2004), and Jalajakumari (2006) conducted studies on Jurisprudential Inquiry Model. Almost all studied found out effectiveness of JIM in value development. Some of the studies conducted in value education propose strategies like JIM, role-playing and value discussion model to be practiced in the classroom because of their specific characteristics for value development. Vijayan (2005) supports this view as an implication of his

study. Thus the studies related with JIM proved its significant role in value development.

D. CONTRIBUTION OF REVIEW OF RELATED LITERATURE TO THE PRESENT STUDY

Studies reviewed showed the relevance of value education at all times, especially as the urgent need of the hour. Review also provides the role of different agencies such as schools, parents, text books, teachers and other factors in value development of children.

Studies related with teachers role in value education are many. so also the role of text books in value education. But studies related to teacher training on values are very limited. This may be due to the strong hold on the view, "values are only caught". But at the same time studies proved that moral instruction is effective in many ways among children. By considering this aspect along with 'values are to be caught and taught' supported by educational experts in value education, attracted the investigator to take up the present study in a practical way by giving training to teachers.

The strength of review of literature for using JIM in classrooms as a value transaction Model of Teaching, along with her practical experience, led the investigator to conduct the present study using JIM.

Review also pointed out that curriculum/text books are rich source of values. The tool to modify students' behaviour by teachers in the classroom is text book. So the training on values through text books is selected by the investigator for the present study. Therefore this experimental study is designed to give training to teachers first to identify values from the content of the Biology curriculum and then to transact these values through JIM in their classrooms. Thus the effectiveness of Biology curriculum and strategy JIM for the development of values in students by teachers can be investigated practically.

The detailed methodology of the study is presented in chapter III.

92.0 14

Chapter III

METHODOLOGY

- * Design of the Study
- * Variables
- * Samples
- * Tools used for the Study
- * Procedure
- * Scoring and Consolidation of the Data
- * Statistical Techniques used for the Study
- * Development of the Training Module

METHODOLOGY

An account of methodology for conducting the present study is given in this chapter. Methodology is the vital part of any research, as it guides the way to proceed.

The methodology has been described under the following heads:

1. DESIGN OF THE STUDY
2. VARIABLES
3. SAMPLES
4. TOOLS
5. PROCEDURE
6. SCORING AND CONSOLIDATION OF THE DATA
7. STATISTICAL TECHNIQUES
8. DEVELOPMENT OF THE TRAINING MODULE

Each of the above has been described below in detail

DESIGN OF THE STUDY

The study was developing a training module for teachers to transact Biology curriculum for developing certain moral values in secondary school pupils. This study had two parts. The first was an experimental one to train teachers to identify values hidden in the content of secondary school Biology

curriculum and then to train them to use JIM in the classrooms to transact these values. The second part of the study was to convert the training procedure into a self-learning module.

Training was given to 30 teachers selected from two districts. They were given training in three groups, each with a handy number, in three regions. The trained teachers had developed eight lesson plans to teach for eight values. They taught these lessons in their own classes.

The experimental part was done as a single group pre-test–treatment–post-test –retention test design, using 1094 secondary school pupils. The Test of Moral Values was used to collect data in the different testings.

The development of **Training Module** was done after confirming the results of the experiment to be positive. The Module was developed by writing down the exact procedure used in the experiment, following the principles of preparing self-instructional material for distance education.

VARIABLES

The experimental study had two variables. The dependent variable was the development of Moral Values along with its four components, Moral Awareness, Moral Thinking, Moral Action, and Moral Attitude in secondary school pupils. The independent variable was the training of teachers to transact Biology curriculum which finally was developed as a module.

SAMPLES

The study was intended to be conducted on a sample of 30 Biology teachers of secondary school level. It was decided to select them from two districts which are easily accessible for the investigator. So she selected Thrissur and Malappuram districts. As the training was presumed to be of a difficult procedure she wanted only a handy number of sample at a time and at the same time, only those who are willing to participate in the experiment. Therefore, the sample was grouped into three, based on locale and these were Thrissur, Manjeri and Calicut University Campus regions. This ensured a coverage of both the districts. The schools used in the study are listed in table 3 and shown in figure 1.

TABLE 3

List of Samples used in the Study

Particulars of Teachers' Sample				Details of Students' Sample					
Sl. No.	Name and Address of the Teacher	Male/Female	Region	Boys	Girls	Total	G/A	U/R	Co-ed Boys only Girls only
1	Chandrika.C HSA (N.S) G.G.H.S.S. Manjeri	F	Manjeri	-	41	41	G	U	Girls only
2	Zuhra Banu HSA (N.S) G.B.H.S.S. Manjeri	F	"	38	-	38	G	U	Boys only
3	Muralidharan. P HSA (N.S), G.H.S.S. Thuvvur	M	"	17	20	37	G	R	Co-ed
4	Ajithmon. K.J. HSA (N.S) G.H.S.S. Karuvarakundu	M	"	17	19	36	G	R	Co-ed
5	Rita Thomas HSA (N.S) M.T.H.S.S. Chungathara	F	"	17	21	38	A	R	Co-ed
6	Tessimma Thomas HSA (N.S) C.K.H.S. Manimooly	F	"	22	8	30	A	R	Co-ed
7	Ramakrishnan. K. HSA (N.S) S.V.H.S.S. Palaemad	M	"	23	22	45	A	R	Co-ed

contd...

8	Rajesh. A HSA (N.S) G.M.V.H.S.S. Nilambur	M	"	17	18	35	G	R	Co-ed
9	Krishna Prakash. T.V H.S.A (N.S) G.H.S.S. Kuzhimanna	M	"	14	22	36	G	R	Co-ed
10	Lovely John HSA (N.S) G.H.S.S. Kuzhimanna	F	"	17	17	34	G	R	Co-ed
11	Rasheed Odakkal HSA (N.S) IKTHSS. Cherukulamba	M	"	19	19	38	A	R	Co-ed
12	Ullas. K.K. HSA (N.S) G.H.S.S. Pang	M	"	12	26	38	G	R	Co-ed
13	Sabu Ismail HSA (N.S) P.M.S.A V.H.S.S. Chappanangadi	M	"	15	15	30	A	R	Co-ed
14	Geethabai. E.K. HSA (N.S)G.B.H.S.S. Malappuram	F	"	26	-	26	G	U	Boys only
15	Radhalakshmi. A HSA (N.S) T.H.S. Angadipuram	F	"	15	18	33	A	R	Co-ed
16	Rosamma Varghese HSA (N.S) G.H.S.S. Irumbuzhi	F	"	11	17	28	G	U	Co-ed
17	Anila. S HSA (N.S), G.V.H.S.S. Chelari	F	C.U.C	20	17	37	G	R	Co-ed

18	Valsala Kumari. C HSA (N.S) G.V.H.S.S. Chelari	F	C.U.C	14	20	34	G	R	Co-ed
19	Kadeeja. P.K. HSA (N.S) VPKMM H.S.S. Pallikkal	F	C.U.C	16	27	43	A	R	Co-ed
20	Jayasreedevi. K HSA (N.S) VPKMM H.S.S. Pallikkal	F	C.U.C	20	21	41	A	R	Co-ed
21	Santhakumari. V HSA (N.S) G.M.H.S.S. Tenhipalam	F	C.U.C	26	26	52	G	R	Co-ed
22	Gouri. K HSA (N.S) G.M.H.S.S. Tenjipalam	F	C.U.C	21	25	46	G	R	Co-ed
23	Radha. K.G HSA (N.S) G.M.H.S.S. Tenjipalam	F	C.U.C	20	28	48	G	R	Co-ed
24	Mariyam. M.A. HSA (N.S) A.P.H.S. Alagappanagar	F	Thrissur	24	14	38	A	R	Co-ed
25	Beena. K.M HSA (N.S) A.A.H.S. Kattanellur	F	"	28	9	37	A	U	Co-ed
26	Celine. K.A. HSA (N.S) G.M.B.H.S.S. Thrissur	F	"	27	-	27	G	U	Boys only

27	Remani. T.V. HSA (N.S) G.M.B.H.S.S. Thrissur	F	"	33	-	33	G	U	Boys only
28	Sajan Anto. P HSA (N.S) J.P.E.H.S. Koorkenjeri	M	"	20	14	34	A	U	Co-ed
29	Lilly. V.B HSA (N.S) S.N.B.H.S.S. Kanimangalam	F	"	28	-	28	A	U	Boys only
30	Sr.Thressia. M.D. HSA (N.S) S.G.H.S. Peringottukara	F	"	-	33	33	A	R	Girls only

Note: F - Female
M - Male
G - Government
A - Aided
U - Urban
R - Rural



Figure 3.1. Map Showing the Distribution of Schools Selected for the Study



As the teachers were the subjects of the transacting sample the availability and their assembling was a problem. With the advice of the Guide at first the investigator approached the DEO of Thrissur and convinced him the scope of the study and the need of the sample for the study. He was very positive in attitude towards the problem and promised all necessary help for the study. He arranged a subject council meeting of Biology teachers of Thrissur district on 4th February 2004 in which 54 teachers participated and from them the investigator selected eight teachers as per their willingness.

The second set of sample was from Manjeri region. The course was conducted with the help of the DEO and sixteen Biology teachers participated.

The third and last set of the sample was from the Calicut University Campus school and seven teachers participated in this course. Both the Manjeri region and the Calicut University Campus region belonged to Malappuram district.

Though the total sample thus came upto 31, one teacher from Thrissur region was not available at the time of the treatment. The total number of teachers thus came to be 30.

The treatment and tests were administered to the students of standard IX who are taught Biology by the selected teachers. The student sample

came upto 1094. The sample of teachers selected, administered their treatment on these student samples.

Subsamples of the Study

The total sample of 30 teachers could be divided into subsamples. Thus the study had the following subsamples.

1. Individual teacher sample

As the total sample was 30, each individual teacher was studied as a subsample under this category.

2. Sex of the teachers

Based on this criterion male and female teachers were studied as subsample under this category. There were 9 male teachers and 21 female teachers.

3. Region of the sample where the training was conducted

The region is identified based on the place where the workshop for the training was conducted. Thus the subsamples based on the criterion was Thrissur region with 7 teachers, Manjeri region with 16 teachers, and Calicut University Campus region with 7 teachers.

The students taught by the sampled 30 teachers became the students' sample. The total 1094 students fell into the following subsamples.

1. Sex of the students

Sex of the students was taken as the criterion for this subsample and boys were 577 and girls were 517 in number.

2. Management of the school

The type of the school was taken as another criterion for subsampling and two types of schools viz., Government and Aided were taken in this category. The number of Government school sample were 664 and that of Aided were 430.

3. Locale of the school sample

In this subsample locale of the school was taken as the criterion and thus Urban and Rural schools were taken. The Urban sample consisted of 325 students and that of Rural consisted of 769 students.

4. Sex-typing of the school

In the sex typing, Boys-only, Girls-only and Co-educational types were taken as the subsamples. The number of Girls-only type consisted of 74 students, Boys-only was 152 and that of Co-educational type was 868 students.

Thus a total of 1094 students were there.

TOOLS USED FOR THE STUDY

The following tools were used for the study.

1. Test of moral values for secondary school students.
2. Eight lesson plans based on JIM to develop the identified moral values from the Biology curriculum.

Description of the Tools

1. Test of Moral Values for Secondary School Students.

This was the tool to test the level of moral values in secondary school pupils which were identified from their Biology curriculum. The tool was prepared by the investigator with the help of her supervising teacher for the present study.

Planning and Preparation of the test

It is known that Biology is rich in values. So many moral values are there in Biology curriculum. Many moral values are already there in pupils also. So the investigator prepared a tool to test the level of moral values in secondary school students. So identifying the moral values to be included in the tool was the first task. For this the investigator searched for moral values relevant to the target group. The prominent source books referred to were Wilson (1967), Kay (1975), Rao (1986) and Mehndiratta (1997). Next the investigator analysed the Biology curriculum of secondary school classes to confirm whether these moral values are present in it. Combining both these

the investigator could identify some moral values relevant to secondary school students that could be developed by transacting the Biology curriculum. They are listed below.

1. Sense of responsibility
2. Concerns for others
3. Appreciation of Nature
4. Considerateness
5. Sincerity
6. Justice
7. Servicemindedness
8. Kindness
9. Non-violence
10. Sympathy
11. Friendship
12. Brotherhood
13. Self control
14. Reliability
15. Tolerance
16. Self-discipline
17. Courageous conviction
18. Social service
19. Good Manners
20. Cleanliness
21. Dignity of Labour
22. Love
23. Patience and
24. Sense of freedom.

There are 24 values thus identified by the investigator. But it may be pointed out that all these values are not mutually exclusive but many of them overlap with each other.

The next task was constructing the tool for measuring the level of these values. A previous tool developed by the supervising teacher was available and it was already used by the investigator for her M.Ed study. To explore some of the values of the target group some relevant items of the tool were retained as such with the permission of the author. To explore the other values more items were prepared by the investigator.

According to Rao (1986) Moral education being an abstract subject, testing is much more difficult here than in other subjects. In spite of the

difficulties attempts can be made to evaluate moral traits. The test of moral understanding are similar to the tests in the cognitive area of any other subject. They may be classified under three categories as:

- Testing an understanding of the meaning of the terms/concepts/principles/codes etc.
- Testing capacity for Moral Thinking
- Testing capacity for Moral action.

He also opined that, in moral development attitudes constitute an important aspect. It is the attitude of a person that ultimately determines one's way of action in moral situations. Kay (1975) opined that a morally mature person must possess the Primary Moral Traits (PMT) and the Primary Moral Attitudes. These traits and attitudes demand the inculcation of several virtues. With these evidences the investigator made discussions with her supervising teacher and thus selected four components to test each moral value and these were Moral Awareness, Moral Thinking, Moral Action and Moral Attitude.

After deciding the values to be included and the four components of each value, the investigator prepared the items. They were in the format of multiple choice items except for Moral Attitude which were in a 3 point scale. First a number of items were written for each value under each section with the options. From them the apt ones were selected for the final tool with the help of the supervising teacher and an expert in the field. Thus the tool

consisted of 50 items as a total in which 12 items were under Moral Awareness, 10 items each under Moral Thinking and Moral Action, and 18 items under Moral Attitude. The prepared tool was in Malayalam.

The details of the four sections are given below.

Section I Moral Awareness

The items in this section are intended to check the awareness of the respondents about the meaning of moral terms, virtues and qualities. Four distractors were given for each item.

Example

What type of character of a person is shown from his throwing away of wastes here and there?

- | | |
|-------------------------|-----------------------|
| (A) Truthfulness | (B) Indiscipline |
| (C) Lack of Cleanliness | (D) Irresponsibility. |

Section II Moral Thinking

The items in this section were meant for checking the ability for moral thinking. This also checks the respondent's ability to make moral decisions.

Example

An abatoir (slaughter house) running near your house is creating pollution. Which of the following ways being adopted will be proper?

- (A) Quarrel with the owner of the slaughter house on the issue.
- (B) Prevent people from purchasing meat from there
- (c) Presume that this issue is not to be taken seriously.
- (D) Make the families living nearby aware of the issue.

Section III Moral Action

Here each item presents a situation where the respondents have to act morally. This requires a sound moral courage and also qualities like concern for others, patience, selflessness and more flexibility.

Example

Suppose your sister failed in the examination. How will you react?

- (a) Blame her for her fault
- (b) Tease her by telling that she failed due to lack of competitiveness.
- (C) Assure her not to worry much and also offer your all out efforts in the future.
- (D) Promise that you would remain with her to face the accusation of all other family members.

Section IV Moral Attitude

This section is constructed as a three-point scale. 18 items were given out of which 14 items require positive responses whereas the remaining four items expect negative responses.

Example

I believe that life is precious

- | | | | | | |
|-----|-------|-----|-----------|-----|----------|
| (A) | Agree | (b) | Uncertain | (C) | Disagree |
| | () | | () | | () |

Mode of Answering

The tool was prepared with necessary instructions to students. A single response sheet containing four sections to answer the items was prepared. The first three sections have four options of A, B, C and D. The fourth section has three circles for the responses of Agree, Uncertain and Disagree.

A sample copy of the Test, its English version and Response sheet are provided as Appendix I, II and III respectively.

Scoring

For the first three sections the right responses are to be given one mark each whereas for the last section which is an attitude scale, the responses indicating positive attitude are to be given three marks each, the responses showing negative attitude be given one mark each and the undecided category would get two marks each. Thus the maximum a subject could score in this tool was 86.

A copy of the scoring key is given as Appendix IV.

The tool was a criterion referenced test which was prepared on the basis of prefixed criteria for the assessment of selected values. All the items were selected after consultation with experts, thus ensuring *face validity*. Situations are provided to the students to know Moral Values and its components in the form of a test. Hence the investigator previously determined the objectives and had represented almost all moral qualities/values in the tool. Thus the tool enjoys *Content Validity*. A vast amount of literature was gone through for selecting the criteria to prepare the items. Hence the test ensures *construct validity* also.

2. Lesson Plans to Develop the Identified Moral Values from the Biology Curriculum

The lesson plans used in the study were aimed at developing the select Moral Values among secondary school students.

Planning and Preparation of Lesson plans

As the first step of preparing the lesson plans the Biology text books of standards VIII, IX, and X were analysed by the investigator to identify the values inherent in them. The next hurdle was how to transact these values in the classroom. From referring to many books and journals the investigator found that there are many strategies for developing values. One among them is 'Models of Teaching'. According to Joyce and Weil (1992), 'Models of Teaching' help students acquire information, ideas, skills, values, ways of

thinking and means of expressing themselves. A model of teaching is a plan or pattern that we can use to design face to face teaching in classrooms or tutorial settings and to shape instructional materials – including books, films, tapes, computer-mediated programs and curricula (long term courses of study).

A thorough reading of models of teaching showed that there are two important models for value development. They are the Role play model and the Jurisprudential Inquiry Model (JIM). Both are coming under the same Social Family of Models of teaching.

Role playing leads students to understand social behaviour, their role in social interactions and ways of solving problems more effectively. The model asks students 'to act out' conflicts, to learn to take the role of others and to observe social behaviour. That is, role-playing requires students to take on and act out the roles of real or imaginary individuals in various situations.

As students mature, the study of social issues at community, state, national and international levels can be made available to them. The Jurisprudential model is designed for this purpose. Created especially for secondary students in social studies, the model brings the case-study method, reminiscent of legal education, to the process of schooling. Students study cases involving social problems in areas where public policy needs to be made. They can be led to identify the public policy issues and the options that

are available for dealing with them and the values underlying those options. Although developed for social studies this model can be used in any area where there are public policy issues and most curricular areas abound with them (ethics in science, business, sports, etc.), (Joyce and Weil, 1992).

According to Singh (2004) Jurisprudential Inquiry Model (JIM) is an effective strategy for value inculcation because of its own advantages. One notable advantage of this method is that open climate for discussion is there which is a major feature of child centred approach in the classroom. Another advantage is that the teacher is very powerful person who initiates the questions or inquiry during the process. Because of its simplicity and application in the Indian classroom settings, Jurisprudential Inquiry Model of Teaching seems to be quite useful.

Studies in 1990 onwards found that the emotions are stored in the form of memories in our brain, known as emotional memory. Memory that we ordinarily designate for awareness is the 'cognitive memory'. Both these are different and both are situated at two different places in the human brain. While cognitive memory resides in **Hippocampus**, emotional memory is situated in **Amygdala** (Nader, 2002). According to Nader strong emotions lead to strong memories. The importance given here is that JIM is capable of developing our emotions and thus stimulating our Amygdala. Participation of students about an issue through JIM is capable of inducing empathy

especially in its fifth phase. This empathy will help the students view the situation in a personalised manner. This gives them clarity of vision making them capable of changing towards the positive side of the situation from the old negative viewpoint. This is how JIM helps in the development of a value. Therefore, the investigator selected JIM as a value transaction strategy for her study.

The investigator has previous experience of practicing JIM during her M.Ed course. As a part of the course the investigator had studied the effect of JIM as a strategy to develop moral values in secondary school pupils and found that this method is highly effective in developing moral values in students. Because of the evidences from the above said references and from the own experience of the investigator, she decided to select JIM as one of the models for preparing lesson plans.

After thinking over of its application she decided to reject the inclusion of Role play model, because it has limited scope in implementation, although it is an effective technique. It is more applicable to lower class students. Thus the investigator limited the study to JIM alone as the transaction procedure.

The complete form of JIM including its Orientation to the model, Major concepts, Steps, and Application and Effects are provided in Chapter V, Section II of the Module. For its brief description a summary chart is shown here along with the effects of the model.

SUMMARY CHART :JURISPRUDENTIAL INQUIRY MODEL

Syntax

Phase One : Orientation to the Case

Introduce materials

Review facts.

Phase Two : Identifying the Issues

Synthesize facts into a public policy issue or issues.

Select one policy issue for discussion

Identify values and value conflicts

Recognize underlying factual and definitional questions.

Phase Three : Taking Positions

Articulate a position

State the basis of the position in terms of the social value or consequences of the decision

Phase Four : Exploring the Stance (s). Patterns of Argumentation

Establish the point at which value is violated (factual).

Prove the desirable or undesirable consequences of a position (factual)

Clarify the value conflict with analogies

Set priorities. Assert priority of one value over another and demonstrate lack of gross violation of second value.

Phase Five : Refining and Qualifying the Positions.

State position and reasons for position and examine a number of similar situations.

Qualify position .

Phase Six : Testing Factual Assumptions behind Qualified Positions

Identify factual assumptions and determine if they are relevant

Determine the predicted consequences and examine their factual validity (will they actually occur?).

Social System

The model has moderate to high structure, with the teacher initiating and controlling the discussion; however, an atmosphere of openness and intellectual equality prevails.

Principles of Reaction

Maintain a vigorous intellectual climate where all views are respected; avoid direct evaluation of students' opinions.

See that issues are thoroughly explored.

Probe the substance of students' thinking through questioning relevance, consistency, specificity, generality, definitional clarity, and continuity.

Maintain dialectical style : Use confrontational dialogue, questioning students' assumptions and using specific instances (analogies) to contradict more general statements.

Avoid taking a stand.

Support System

Source documents that focus on a problem situation are needed.

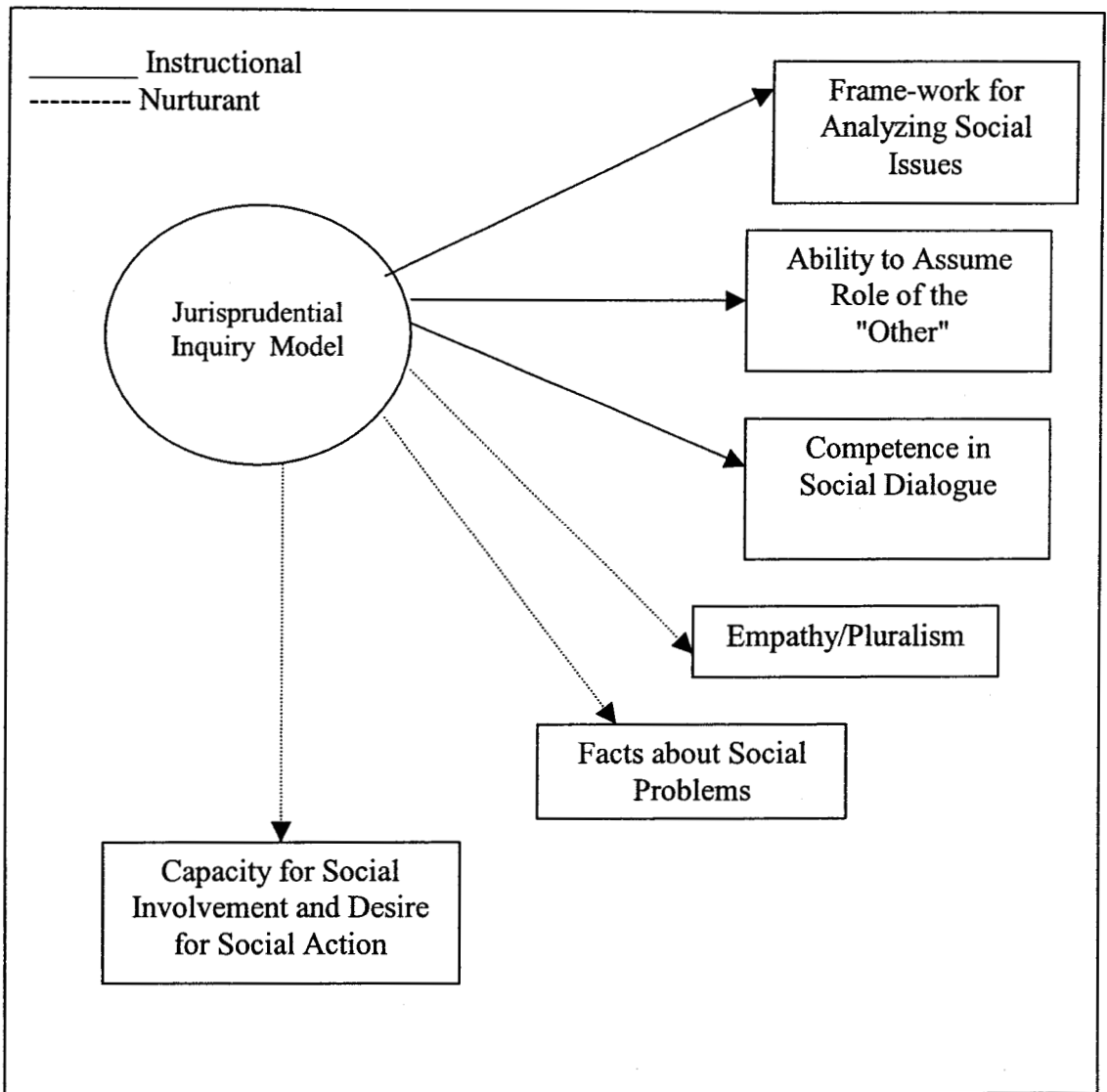


FIGURE 3.2 Instructional and Nurturant effects of Jurisprudential Inquiry model

The investigator prepared a sample lesson plan based on JIM for the training procedure. Based on the training during the workshop the teachers prepared necessary lesson plans for classroom practices. The sample lesson plan is provided in the procedure part. The prepared lesson plans are provided in the module.

PROCEDURE

The procedure adopted for the study is as follows :

1. Analysing the Biology text books for standards VIII, IX and X to locate moral values that can be developed from the curriculum.
2. Making the teachers aware of the scope of Biology curriculum to develop certain moral values and the need for certain special transacting procedures to develop those values.
3. Giving training to teachers to analyse the Biology text books to identify the values hidden in them.
4. Training the teachers for using JIM to develop moral values identified in the above step.
5. Conducting a pre-test of moral values for secondary school pupils selected as the sample.
6. Conducting classes by the trained teachers through JIM to develop the select moral values for the sampled students.
7. Conducting a post-test of moral values for the sample.
8. Testing the difference between pre-test and post-test scores for its significance.
9. Conducting a retention test of moral values for the sample.
10. Testing the difference between post-test and retention test scores for its significance.

11. Developing the final module for the self-learning of the training procedure.

Procedure one was the actual preparatory phase of the training given to teachers. So step one of procedure is given under the heading, '*Preparation for the training to teachers*'. This was followed by a thorough '*Planning for conducting the training programme*' by the investigator. Procedure steps of two, three and four were the actual training programme intended. So these three are combined and described below in detail under the heading '*Workshop for training teachers*'.

1. Preparation for the training to teachers

Before the training programme the investigator analysed the content of Biology text books of standard VIII, IX and X to locate values.

Here the investigator did the content analysis to find out values included in it. A number of values are hidden in the Biology content. From teachers' opinion it is understood that they never know the technique of content analysis for finding out values and also no training was there to fill this gap. Hence the investigator gave training to analyse Biology content to learn how to identify the values hidden there. The actual procedure followed for content analysis is described in section 1 of the Module. Biology text books of standard VIII and IX were analysed by the teachers in the workshop and standard X was given as home assignment for teachers.

For demonstration purpose the investigator selected one chapter of standard VIII. The findings of the chapter are summarised below.

Chapter 3	The Earth for our Future
Major Concept	: The Earth for our Future
Minor concepts	: Values identified
1. Introduction	: Duty and Responsibility Self Discipline Concern for Others Cleanliness
2. Table	: Reliability
3. Pollution-Laws	: Dignity of Labour Patience Justice Servicemindedness
4. Pollution	: Servicemindedness Concern for Others Social service Non-violence Considerateness Appreciation of Nature Duty and Responsibility Cleanliness Group Responsibility
5. My duty	: Duty and Responsibility Concern for Others Non-violence
6. Further Activities	: Social Service Duty and Responsibility
Major Value of the Chapter – Sense of Responsibility	

After the content analysis the investigator entered to its transaction strategy. After thorough reading she prepared a lesson plan based on JIM. This is prepared as a sample for giving training to the teachers. It was intended that based on this sample lesson plan, during the workshop the teachers have to prepare sufficient lesson plans on all major values identified.

The JIM requires six phases for completing the model. The phases of the sample lesson plan are shown below.

The lesson plan was based on a specific value "**Sense of Responsibility**"

Phase One: Orientation to the case

As the first step the teacher introduces a material in the form of an issue,

'June 5 – World Environmental Day' – followed by the matter.

Phase Two: Identifying the issues

In the phase II students analyse the material and selects one policy issue for discussion such as the nature is being destructed by the activities of human beings.

(Value Vs value conflict)

Protection of nature Vs utilisation of nature.

Phase Three: Taking Positions

Students take positions on the issue. They can be.

1. The earth is for man. All the resources on the earth is created for man. Therefore utilising the same is not wrong.
2. Man is only an unimportant creature on earth. Earth sustains man. Yet man behaves greedily and destructs earth.

Based on their positions about the issue the teacher divides them in two groups.

Phase Four: Exploring the stance(s), Patterns of Argumentation

Argumentation on the issue between the two groups follows and in this phase.

Phase Five: Refining and Qualifying the Positions

Phase four naturally leads to the clarification of their views as the teacher enquires and refinement occurs in this phase.

Phase Six: Testing Factual Assumption Behind Qualified Positions.

Teacher summarises the value points pointed out by the two groups.

The detailed procedure and the lesson plan in its complete form are presented in the Module.

After completing the preliminary resources thus, the investigator then started for the plan of the training programme.

2. Planning the training programme

With the help of the supervising teacher the investigator prepared a plan for the actual training programme. The training programme was intended for four days and the activities of each day also were planned accordingly. It was decided to start the programme with an opinionnaire administered on the teachers about their views on value education in schools. If the opinion is on the negative it was decided to re-administer the same after the training programme to see for any change. The training for analysis of content followed by that for transaction of values through JIM were also planned. Thus the training programme planned for the complete analysis of Biology text books of standard VIII and IX (X will be the home assignment); and preparation of eight value based lesson plans through JIM as the outcome of the training were finalised.

The general plan prepared for the training is shown below.

1st day

- 10.00 - 10.30 - Self Introduction by Teachers
- 10.30 - 11.30 - Opinion Gathering
- 11.30 - 11.45 - Tea break
- 11.45 - 1.00 - Presentation and Demonstration for content analysis (Std VIII)
- 1.00 - 2.00 - Lunch break
- 2.00 - 4.00 - Work shop

2nd day

- 10.00 - 11.30 - Discussion of Lessons of the previous day
- 11.30 - 11.45 - Tea break
- 11.45 - 1.00 - Workshop (Std. IX)
- 1.00 - 2.00 - Lunch break
- 2.00 - 4.00 - Workshop + Discussion for selection of values for classroom practice

3rd day

- 10.00 - 11.30 - Selection of values for lesson plan preparation
- 11.30 - 11.45 - Tea break
- 11.45 - 1.00 - JIM introduction & illustration
- 1.00 - 2.00 - Lunch Break
- 2.00 - 3.00 - Analysed a problem based on JIM
- 3.00 - 4.00 - Further discussion

4th day

- 10.00 - 11.30 - Workshop on JIM
- 11.30 - 11.45 - Tea break
- 11.45 - 1.00 - Workshop
- 1.00 - 2.00 - Lunch Break
- 2.00 - 3.00 - Workshop
- 3.00 - 4.00 - Future plans for practice of Lesson in the field

With all these plans the investigator conducted a pilot training before its actual field work. This was done under the supervision of the supervising teacher to six Natural science students of M.Ed course in the own Department. The investigator detailed the procedure of content analysis with demonstration which was followed by the workshop. In this way they were trained to analyse the Biology text book of standard IX and found a list of moral values inherent in it. After content analysis procedure the strategy JIM was introduced and demonstrated . The discussion continued upto a certain level, but not upto the expectation of the investigator because the participants were fully morally matured. Still, the participants became surprised to know the long list of values hidden in the content and the strategy JIM.

3. Workshop for training teachers

With the plan prepared the investigator started the training programme.

a. Workshop at Thrissur

The workshop at Thrissur was on 4th, 5th and 6th February 2004. It was conducted in Government Model Girls Higher Secondary school, Thrissur which was arranged by the DEO Thrissur. The school was in the compound of the DEO office and the DEO visited the training programme and encouraged the teachers for understanding its importance.

As per the plan self introduction was the first attempt. Then the investigator introduced the scope of the study. As a first step the investigator supplied the opinionnaire to the teachers. There were four questions in it which are given in the module. After answering the questions the investigator collected back the opinionnaire. It was found that all teachers were expressing positive opinion for value education.

Then the investigator detailed the procedure of content analysis and demonstrated with one of the chapters of standard VIII. All the teachers analysed the same with the help of the investigator using the text book individually which was followed by their discussion. In the afternoon session the workshop continued with the analysis of the other five chapters of standard VIII by groupwise analysis and their discussions.

In the second day the selected ten teachers assembled and continued the work of content analysis of standard IX in the morning session as per the plan. Here the investigator encouraged group wise activities in the workshop. Three groups were made for this. Finally, the three groups worked together and they completed all chapters of standard VIII and IX and left the Xth standard for home assignment.

In the third day they selected the values necessary for classroom practice and the selected eight major values from the eight chapters of the text book for standard IX were

- Life is Worth living.
- Concern for Others
- Hardwork
- Simplicity
- Dignity of Labour
- Good Manners
- Servicemindedness and
- Sense of Responsibility

In the same day the investigator started JIM along with an introduction. As the teachers were in need of special techniques for value education, the investigator directly introduced Models of Teaching and JIM. The orientation of JIM was followed by the demonstration and discussion of a problem and thus familiarising the sample with the phases of JIM. After this the investigator connected the content analysis and the JIM.

As the workshop was during February and the teachers were very busy with the schedule in their schools, the investigator could not get the teachers in the consecutive 4th day. Hence from the third day of the workshop, fifteen days were allotted to prepare the lesson plans. During this period the investigator visited each teacher and made corrections and maximum

concentration was given to this field work. As per the plan on the sixteenth day that is on 4th March all the eight subjects of the sample met again and discussed their lesson plans. In the afternoon session through discussion they prepared Phase one of each lesson plan in common. They were ready to prepare the complete lesson plans in the vacation and the finalisation of the eight lessons was done after consultation with each other.

b) Workshop at Manjeri

The investigator's plan was to conduct the workshop at Manjeri immediately after the workshop at Thrissur. But due to some problems, the workshop was delayed and it was conducted during September 2004 from 7th to 10th of the month. Sixteen teachers attended from this region. Here the workshop was completed in a single stretch. They analysed the text books of standard VIII and IX for listing out values and also prepared eight lesson plans by group work and discussed thoroughly and finalised the same for common use. Here also the course details were the same as at Thrissur.

c) Workshop at Calicut University Campus School Region

Seven teachers participated in this region and the course was from 20th to 23rd May 2005. The whole procedure was the same as of those conducted before.

Thus all the three groups of the teacher sample got training on JIM and prepared necessary lesson plans before starting the treatment.

4. Administration of the pre-test

With the letter from the DEO's the investigator approached the Heads of the schools for fieldwork. They agreed to co-operate and gave necessary help to conduct the field work. The investigator printed sufficient number of response sheets and tools for answering and conducted pre-test in the student samples of the three regions. The pre-test at Thrissur was during June and July 2004. In Manjeri region it was during September and October 2004 and in Calicut University Campus region it was during June 2005.

5. Treatment

Immediately after the administration of the Pre-test the field work of the sampled teachers started. The investigator contacted each teacher of the sample and conducted demonstration classes in some of the schools where they were in need.

Only after they are fully confident to start their classes they were allowed to take the same. The treatment started from November 2004 in Thrissur and Manjeri regions and came to an end during March 2005. The investigator observed maximum classes of all these teachers. Each sample took eight classes based upon eight values. The investigator recorded what

actually happened in the class. The development of the lessons was the same as per the prepared materials except for some modifications in the details. For the third set of sample, that is, at Calicut University Campus school region, the treatment was during July and August 2005.

6. Administration of the post-test

The post test was conducted by the same tool used for the pre-testing. In Manjeri and Thrissur regions it was during February and march 2005. In Calicut University Campus school region it was during August and September 2005.

7. Retention test

After a gap of one month from the post test the retention test was conducted in the three sets of samples. The same was completed by November 2005.

SCORING AND CONSOLIDATION OF THE DATA

Soon after the collection of the data the investigator valued the data sheets of pre-test, post-test, and retention test separately. The marks were given as per the scoring key of the tool. All the scores were entered in the consolidation sheet in a systematic way so that the subsamples also could be identified easily.

STATISTICAL TECHNIQUES USED FOR THE STUDY

The statistical technique used for analysing the data was the test of significance of the difference between correlated means. Paired t-test was used by using SPSS (Statistical Package for Social Sciences Software) for analysis of the obtained data. The findings and conclusions of the study are presented in the following chapter.

DEVELOPMENT OF THE TRAINING MODULE

The study is to develop a Training Module out of the experiment conducted. It was decided to develop the module if the findings of the study proved to be positive. The Module is intended to be used as a Self-instructional one. Hence the same procedure used for training the teachers have to be given in the Module following the principles of developing self-instructional materials. The following principles were practiced in the preparation of the Module (Nath, 1998).

Principles of Developing Self-instructional Materials Followed in the Module

1. The material has a specific beginning, a body and ending.
2. The whole material has sectioning and subsectioning.
3. Each section has an objective and an introduction.
4. New material is presented through subsections with summary.

5. Presentation of the material is with adequate explanation, activities to provoke thinking and self-check questions for reinforcing.
6. Assignment question and Source Materials for further reading are to be provided.
7. Clarity of language is to be ensured through simple, short, conversational style of sentences addressing the learner personally.

All the above principles were followed for developing the Module. All activities and explanations given in the module were the same as used for training in the workshops.

The developed Module is presented as Chapter V.

Chapter - IV

ANALYSIS AND INTERPRETATIONS

- * Statistical Analysis
- * Section I
- * Examination of the Results of Comparison Between Pre-test and Post-test
- * Section II
- * Examination of the Results of Comparison Between Post-test and Retention Test
- * Tenability of Hypotheses
- * Conclusion

ANALYSIS AND INTERPRETATIONS

This chapter deals with the statistical analysis of the collected data and its interpretations. Analysis of data means studying the tabulated material in order to determine inherent facts or meanings. Interpretation is a critical examination of the results of analysis (Sukhia, 1976). According to Best (1977), this is the heart of the research report.

By keeping the objectives in mind which are already cited in the Introduction Chapter, the investigator collected and classified the data. Then they were subjected to analysis to find out the test of significance of the difference between correlated means. The levels of significance used here are at 0.05 level and 0.01 level.

STATISTICAL ANALYSIS

The statistical analysis is done on the variables Moral Values , Moral Awareness , Moral Thinking , Moral Action and Moral Attitude.

The analysis of data and the results are presented in two sections. The first section deals with the data and results of the test of significance of differences in means of the select variables between the pre-test and post-test.

The second section deals with the data and results of the test of significance of differences in means of the select variables between the post-test and retention test.

Section 1 is presented below.

SECTION - I

This section presents the data and results of comparison of mean scores of the select variables between the pre-test and post-test of 1094 students belonging to 45 samples namely, **Total sample; 30 Individual Teacher samples; students of Male and Female teachers; Thrissur, Manjeri and Calicut University Campus School; Boys and Girls; Government and Aided schools; Urban and Rural schools; Co-educational, Boys-only and Girls-only type of schools.**

The analysis of data and the results are given below.

1. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Total Sample.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the total sample are given in Table 4.

TABLE 4

**Data and Results of
Comparison of Mean Scores of the Select
Variables between the Pre-test and Post-test for the Total Sample**

(N =1094)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.7770	8.313	70.2066	7.692	0.706	-13.04**
Moral Awareness	6.7075	2.077	7.3739	2.075	0.565	-11.38**
Moral Thinking	5.8035	1.493	6.0229	1.434	0.393	-4.50**
Moral Action	7.7733	1.875	8.1810	1.786	0.609	-8.32**
Moral Attitude	47.4927	5.372	48.6865	4.391	0.553	-8.41**

** – Indicates significance at 0.01 level.

Table 4 provides the comparison of mean scores of the select variables between the Pre-test and Post-test for the Total sample (N=1094). In the total sample the Moral Values had a mean score of 67.7770 with a standard deviation of 8.313 in the pre-test. In the post-test the mean was 70.2066 and standard deviation was 7.692. In pre-test the Moral Awareness had a mean score of 6.7075 and standard deviation was 2.077. In post-test the mean score was 7.3739 and standard deviation was 2.075. The Moral Thinking had a mean score of 5.8035 with a standard deviation of 1.493 in pre-test while the post-test had the mean of 6.0229 and standard deviation of 1.434. Moral Action had a mean score of 7.7733 with a standard deviation of 1.875 in pre-test and in post-test this was 8.1810 and 1.786 respectively. In pre-test the Moral Attitude had a mean score of 47.4927 and standard deviation of 5.372

and in post-test this was 48.6865 and 4.391 respectively. The critical ratio obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -13.04, -11.38, -4.50, -8.32 and -8.41 respectively. The critical ratios for all the select variables showed significance at 0.01 level.

Discussion

From Table 4 it is found that all the critical ratios of the select variables viz., Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude showed significance at 0.01 level. The higher value of post-test means and significant difference in mean scores for the total sample have shown that the transaction procedure as explained in the lessons prepared was effective to develop Moral Values and its selected components in secondary school pupils.

2. Comparison of Mean scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 1

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of teacher No.1 is given in Table 5.

TABLE 5

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.1**

(N = 41)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	68.6585	7.933	70.9756	6.417	0.787	-3.03**
Moral Awareness	6.9756	2.031	7.7561	2.300	0.513	-2.32*
Moral Thinking	6.0000	1.643	6.0000	1.466	0.166	0.00
Moral Action	8.1951	1.487	8.6341	1.260	0.426	-1.89
Moral Attitude	47.4878	4.696	48.5854	3.626	0.727	-2.18*

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratio obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -3.03, -2.32, 0.00, -1.89 and -2.18 respectively. The critical ratio for Moral Values showed significance at 0.01 level and those for Moral Awareness and Moral Attitude showed significance at 0.05 level while the critical ratio for Moral Thinking and Moral Action had no significance at any level.

This showed that the particular teacher could develop Moral Values, Moral Awareness, and Moral Attitude in students by applying the transaction procedure. Still, the result showed that the teacher could not develop Moral Thinking and Moral Action.

3. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 2.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No.2 is given in Table 6.

TABLE 6

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.2**

(N = 33)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	74.0000	4.294	75.5758	3.849	0.771	-3.25**
Moral Awareness	8.2727	1.807	8.3333	1.652	0.628	-0.23
Moral Thinking	5.9394	1.088	6.3939	1.248	0.386	-2.01*
Moral Action	8.3939	1.144	8.6970	1.237	0.529	-1.50
Moral Attitude	51.3939	2.410	52.1515	1.822	0.626	-2.29*

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -3.25, -0.23, -2.01, -1.50, and -2.29 respectively. The critical ratio for Moral values showed significance at 0.01 level, Moral Thinking and Moral Attitude showed

significance at 0.05 level and Moral Awareness and Moral Action had no significance at any level.

4. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No.3.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No.3 is given in Table 7.

TABLE 7
Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.3

(N = 28)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.7143	8.423	69.7143	7.883	0.826	-2.19*
Moral Awareness	6.4286	1.687	6.7857	1.950	0.209	-0.82
Moral Thinking	5.7500	1.266	6.1071	1.499	0.483	-1.33
Moral Action	7.2143	2.283	7.6786	2.358	0.791	-1.63
Moral Attitude	48.3214	5.179	49.1429	3.817	0.640	-1.08

* – Indicates significance at 0.05 level.

The means of pre-test and post-test were compared and the critical ratios obtained were -2.19, -0.82, -1.33, -1.63 and -1.08 for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude

respectively. The critical ratio obtained for Moral Values showed significance at 0.05 level. All other values showed no significance at any level.

5. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No.4.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher no. 4 is given in Table 8.

TABLE 8

Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No.4

(N = 27)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	71.8889	4.948	73.3704	4.334	0.630	-1.91
Moral Awareness	7.8148	1.545	8.4444	1.476	0.240	-1.76
Moral Thinking	5.9259	1.238	6.0741	1.328	0.425	-0.56
Moral Action	7.3704	2.022	8.1111	1.601	0.616	-2.36*
Moral Attitude	50.7778	2.455	50.7407	2.809	0.426	0.07

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were, -1.91, -1.76, -0.56, -2.36 and 0.07. The critical ratio obtained for Moral Action showed significance at 0.05 level while all other values had no significance at any level.

6. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 5.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 5 is given in Table 9.

TABLE 9

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.5
(N = 33)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	73.7576	5.056	74.2424	4.704	0.491	-0.56
Moral Awareness	7.9697	1.630	8.5152	1.417	0.494	-2.03*
Moral Thinking	6.0909	1.234	5.9394	1.088	0.377	0.67
Moral Action	8.5455	1.583	8.5455	1.416	0.630	0.00
Moral Attitude	51.1515	3.053	51.2424	3.260	0.169	-0.13

* - Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values , Moral Awareness , Moral Thinking , Moral Action and Moral Attitude were, -0.56, -2.03, 0.67, 0.00, -0.13 respectively. The t-value obtained for Moral Awareness showed significance at 0.05 level while all other critical ratios had no significance at any level.

7. Comparison of Mean Scores of the Select Variables between the Pre- test and Post-test for the Students of Teacher No. 6.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 6 is given in Table 10.

TABLE 10

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.6
(N = 26)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	65.8077	8.075	69.3462	7.354	0.737	-3.20**
Moral Awareness	6.1923	1.960	7.6154	2.228	0.219	-2.76*
Moral Thinking	5.3077	1.379	5.7692	1.883	0.260	-1.16
Moral Action	7.5000	1.655	8.0769	1.896	0.484	-1.62
Moral Attitude	46.8077	5.748	47.8846	3.943	0.581	-1.16

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -3.20, -2.76, -1.16, -1.62 and -1.16 respectively. The t-value of Moral Values showed significance at 0.01 level and that for Moral Awareness showed significance at 0.05 level while all other values showed no significance at any level.

8. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 7

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 7 is given in Table 11.

TABLE 11

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.7
(N = 38)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.3684	9.172	70.8158	7.938	0.771	-1.51
Moral Awareness	7.0789	2.123	7.4211	2.321	0.657	-1.14
Moral Thinking	5.6316	1.460	5.4211	1.588	0.384	0.77
Moral Action	8.0263	2.020	8.5789	1.869	0.740	-2.42*
Moral Attitude	48.6316	5.577	49.3947	4.117	0.575	-1.01

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -1.51, -1.14, 0.77, -2.42 and -1.01 respectively. The critical ratio for Moral Action showed significance at 0.05 level and all other values do not show significance at any level.

9. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 8.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 8 is given in Table 12.

TABLE 12

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.8
(N = 37)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	70.4324	6.825	73.2973	5.821	0.395	-2.49*
Moral Awareness	7.1351	1.843	7.5946	1.907	0.514	-1.51
Moral Thinking	6.2162	1.493	6.5135	1.426	0.181	-0.97
Moral Action	7.8378	1.849	8.2162	1.797	0.638	-1.48
Moral Attitude	49.2432	4.930	50.9730	2.891	0.010	-1.85

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -2.49, -1.51, -0.97, -1.48, -1.85 respectively. The critical ratio for Moral Values showed significance at 0.05 level. The t-values for Moral Awareness, Moral Thinking, Moral Action and Moral Attitude showed no significance at any level.

10. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No.9.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 9 is given in Table 13.

TABLE 13

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.9
(N = 38)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.4474	6.583	71.7632	8.654	0.565	-1.94
Moral Awareness	6.7632	2.111	7.5789	1.869	0.488	-2.48*
Moral Thinking	5.8158	1.504	6.0526	1.314	0.183	-0.81
Moral Action	7.5526	1.884	8.2105	1.742	0.416	-2.07*
Moral Attitude	49.3158	3.632	49.9211	6.029	0.434	-0.68

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were -1.94, -2.48, -0.81, -2.07 and -0.68 respectively. The critical ratios for Moral Awareness and Moral Action showed significance at 0.05 level. But the critical ratios obtained for

Moral Thinking , Moral Attitude and Moral Values showed no significance at any level.

11. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 10.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 10 is given in Table 14.

TABLE 14

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.10
(N = 34)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	71.9118	5.895	74.0882	4.795	0.458	-2.25*
Moral Awareness	7.0882	1.865	7.9412	1.632	0.420	-2.63**
Moral Thinking	6.2353	1.046	6.2941	1.142	0.060	-0.22
Moral Action	8.7353	1.214	8.8824	1.250	0.478	-0.68
Moral Attitude	49.8529	3.799	50.9706	3.010	0.304	-1.60

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were -2.25, -2.63, -0.22, -0.68, -1.60 respectively. The critical ratio for Moral Awareness showed

significance of 0.01 level. The t-value for Moral Values showed significance at 0.05 level. But the critical ratios for Moral Thinking, Moral Action and Moral Attitude had no significance at any level.

12. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 11.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 11 is given in Table 15.

TABLE 15

Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No.11 (N = 35)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	68.5143	6.446	72.0286	3.967	0.649	-4.24**
Moral Awareness	7.3143	1.795	7.9429	1.765	0.452	-1.99*
Moral Thinking	6.1143	1.367	6.3714	1.285	0.427	-1.07
Moral Action	8.1714	1.150	9.1429	1.192	0.411	-4.52**
Moral Attitude	46.9143	4.355	48.5714	2.547	0.577	-2.76**

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Action, and Moral Attitude showed significance of 0.01 level. The critical ratio for Moral Awareness showed significance at 0.05 level. But the critical ratio for Moral Thinking showed no significance at any level.

13. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 12.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 12 is given in Table 16.

TABLE 16

Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No.12 (N = 30)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	71.7000	5.453	74.0667	3.886	0.597	-2.93**
Moral Awareness	8.0333	1.884	8.5333	1.925	0.565	-1.54
Moral Thinking	6.4333	1.524	6.3333	1.155	0.189	0.32
Moral Action	8.0667	1.507	8.1333	1.795	0.353	-0.19
Moral Attitude	49.1667	2.937	51.0667	1.799	0.226	-3.38**

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -2.93, -1.54, -0.32, -0.19

and -3.38 respectively. The critical ratio obtained for Moral Values and Moral Attitude showed significance at 0.01 level. All other values for Moral Awareness, Moral Thinking and Moral Action had no significance at any level.

14. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 13.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No.13 given in Table 17.

TABLE 17

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.13
(N = 30)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	66.6000	8.290	65.7667	8.997	0.706	0.69
Moral Awareness	6.5000	2.271	6.3667	2.442	0.581	0.34
Moral Thinking	6.0000	1.702	6.0667	1.799	0.518	-0.21
Moral Action	7.8667	1.814	7.8667	2.030	0.613	0.00
Moral Attitude	46.2333	4.768	45.4667	4.681	0.553	0.94

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were 0.69, 0.34, -0.21, 0.00

and 0.94 respectively. All the t-values showed no significance at any level. The particular teacher could not develop Moral Values and its components among the students through the special strategy.

15. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 14.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No.14 is given in Table18.

TABLE 18

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.14
(N = 37)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	61.1351	7.506	63.2973	8.524	0.756	-2.31*
Moral Awareness	5.4595	1.894	5.9459	2.134	0.439	-1.38
Moral Thinking	5.4054	1.607	5.4865	1.521	0.520	-0.32
Moral Action	6.4595	2.268	7.0000	2.506	0.719	-1.82
Moral Attitude	43.8108	4.081	44.8649	5.089	0.488	-1.36

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were -2.31, -1.38, -0.32, -1.82

and -1.36 respectively. The t-value for Moral Values showed significance at 0.05 level, while all other variables had no significant difference at any level.

16. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 15.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 15 is given in Table 19.

TABLE 19
Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.15
(N = 33)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.7273	6.700	72.3333	5.470	0.636	-2.82**
Moral Awareness	7.0606	2.423	8.0606	1.903	0.467	-2.52*
Moral Thinking	5.9394	1.144	6.5152	1.326	0.557	-2.82**
Moral Action	8.1515	1.302	8.4242	1.601	0.508	-1.07
Moral Attitude	48.5758	3.992	49.3333	3.577	0.255	-0.94

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -2.82 , -2.52 , -2.82 , -1.07 and -0.94 respectively. The t-value for Moral Values and Moral Thinking

showed significance at 0.01 level and Moral Awareness showed significance at 0.05 level. But the other values viz., for Moral Action and Moral Attitude had no significance at any level.

17. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 16.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 16 is given in Table 20.

TABLE 20

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.16
(N = 34)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.7059	9.514	71.6765	7.289	0.617	-3.04**
Moral Awareness	6.4706	2.259	7.9412	2.117	0.437	-3.69**
Moral Thinking	5.4706	1.674	6.2059	1.513	0.331	-2.32*
Moral Action	8.0000	2.335	8.7353	1.524	0.400	-1.93
Moral Attitude	47.7647	5.478	48.7941	3.991	0.623	-1.39

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The means of pre-test and post-test were compared for significance for the select variables, Moral Values, Moral Awareness, Moral Thinking, Moral

Action, and Moral Attitude and got the critical ratios of -3.04 , -3.69 , -2.32 , -1.93 and -1.39 respectively. The t-value obtained for Moral Values, and Moral Awareness showed significance at 0.01 level. While those for Moral Thinking showed significance at 0.05 level. But the t-values for Moral Action and Moral Attitude showed no significance at any level.

18. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 17.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 17 is given in Table 21.

TABLE 21

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.17
(N = 36)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	65.8889	6.255	67.0556	7.286	0.637	-1.20
Moral Awareness	6.4167	2.020	6.6111	2.358	0.749	-0.74
Moral Thinking	5.3333	1.867	5.9722	1.502	0.441	-2.12*
Moral Action	7.6944	1.737	8.1111	1.526	0.563	-1.63
Moral Attitude	46.4444	5.118	46.3611	4.223	0.277	0.09

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were -1.20 , -0.74 , -2.12 , -1.63 and 0.09 respectively. The t-value for Moral Thinking showed significance at 0.05 level while all other values showed no significance at any level.

19. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 18.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 18 or given in Table 22.

TABLE 22

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.18
(N = 45)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	66.2222	7.813	69.7556	6.945	0.687	-4.02**
Moral Awareness	5.9556	1.551	6.9778	1.994	0.418	-3.52**
Moral Thinking	5.6000	1.587	5.8667	1.325	0.201	-0.97
Moral Action	7.3556	1.909	8.0000	1.822	0.654	-2.78**
Moral Attitude	47.3111	5.338	48.9111	3.970	0.376	-2.02*

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

From the table it is known that all the post-test means were higher than pre-test means. When the means were compared for significance the t-values obtained for the Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -4.02 , -3.52 , -0.97 , -2.78 and -2.02 respectively.

The critical ratios obtained for Moral Values, Moral Awareness and Moral Action were significant at 0.01 level and that for Moral Attitude significant at 0.05 level, while those for Moral Thinking had no significance at any level.

20. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 19.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 19 is given in Table 23.

TABLE 23

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.19
(N = 41)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	65.1463	10.709	68.5610	8.958	0.827	-3.63**
Moral Awareness	5.9024	2.022	7.3659	1.984	0.694	-5.94**
Moral Thinking	5.9756	1.620	6.1220	1.536	0.504	-0.60
Moral Action	7.4634	2.388	7.6098	2.235	0.789	-0.62
Moral Attitude	45.8049	6.904	47.4634	5.129	0.691	-2.12*

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The pre-test and post-test means were compared for significance obtained the critical ratios for the select variables were -3.63, -5.94, -0.60, -0.62, and -2.12. The t-values for Moral Values and Moral Awareness were significant at 0.01 level. Since it exceeds 2.58 and the t-value for Moral Attitude showed significance at 0.05 level. But those for Moral Thinking and Moral Action had no significance at any level.

21. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 20.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 20 is given in Table 24.

TABLE 24

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.20
(N = 37)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	65.8378	8.777	67.8919	7.593	0.846	-2.67**
Moral Awareness	6.3243	2.550	6.8919	1.760	0.670	-1.82
Moral Thinking	5.2703	1.446	5.5405	1.282	0.473	-1.17
Moral Action	7.2703	2.207	7.7297	1.661	0.748	-1.91
Moral Attitude	46.9730	4.799	47.7279	5.305	0.641	-1.07

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness , Moral Thinking , Moral Action and Moral Attitude were -2.67, -1.82, -1.17, -1.91 and -1.07 respectively. The t-value obtained for Moral Values showed significance at 0.01 level. While the t-value for Moral Awareness, Moral Action, Moral Thinking and Moral Attitude had no significance at any level.

22. Comparison of Mean scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 21.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 21 in given in Table 25.

TABLE 25

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.21
(N = 46)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.1739	7.209	69.5870	6.202	0.690	-3.05**
Moral Awareness	6.3261	1.989	6.8478	1.862	0.614	-2.09*
Moral Thinking	5.3043	1.590	5.7826	1.246	0.337	-1.96*
Moral Action	7.7391	1.666	8.3043	1.547	0.532	-2.46*
Moral Attitude	47.8043	4.262	48.6522	3.407	0.600	-1.64

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were -3.05, -2.09 -1.96, -2.46 and -1.64 respectively. The ratio of Moral Values showed significance at 0.01 level and the critical ratios for Moral Awareness , Moral Thinking and

Moral Action showed significance at 0.05 level and that for Moral Attitude had no significance at any level.

23. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 22.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No.22 is given in Table 26.

TABLE 26

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.22
(N = 52)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.3269	6.392	69.5962	7.413	0.569	-0.30
Moral Awareness	7.3269	2.093	7.6923	2.138	0.571	-1.34
Moral Thinking	6.2672	1.610	5.4423	1.685	0.367	3.22
Moral Action	7.7885	1.893	8.0000	2.029	0.465	-0.75
Moral Attitude	47.9423	3.659	48.4615	4.041	0.324	-0.83

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were -0.30, -1.34, 3.22, -0.75

and -0.83 respectively. The t-value for all the variables had no significance at any level.

24. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 23.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 23 is given in Table 27.

TABLE 27

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.23
(N = 48)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.1042	9.539	73.1042	5.703	0.591	-3.60**
Moral Awareness	7.3333	1.993	7.9583	1.611	0.389	-2.15*
Moral Thinking	6.1458	1.487	6.5000	1.429	0.475	-1.64
Moral Action	8.0833	1.866	8.0417	2.133	0.491	0.14
Moral Attitude	47.5417	7.175	50.6042	2.804	0.392	-3.21**

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The pre-test and post-test means were compared for significant difference and the critical ratios obtained were -3.60 , -2.15 , -1.64 , 0.14 and -3.21 for the corresponding variables Moral Values, Moral Awareness, Moral

Thinking , Moral Action and Moral Attitude respectively. The critical ratios for Moral Values and Moral Attitude had significance at 0.01 level and that for Moral Awareness showed significance at 0.05 level and those for Moral Thinking and Moral Action had no significance at any level.

25. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 24.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 24 is given in Table 28.

TABLE 28

Data and Result of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No.24 (N = 28)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.0714	6.880	70.8929	5.940	0.753	-2.10*
Moral Awareness	6.6786	1.827	7.9286	1.489	0.604	-4.39**
Moral Thinking	6.0000	0.981	6.2143	1.228	0.246	-0.83
Moral Action	8.3929	1.343	8.5357	1.644	0.623	-0.57
Moral Attitude	48.0000	4.952	48.2143	4.022	0.532	-0.26

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained by the comparison of means of pre-test and post-test were -2.10, -4.39, -0.83, -0.57 and -0.26 for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude respectively. The critical ratio obtained for Moral Awareness showed significance at 0.05 level and that for Moral Values showed significance at 0.05 level and the t-value for Moral Thinking, Moral Action and Moral Attitude had no significance at any level.

26. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 25.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 25 is given in Table 29.

TABLE 29

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.25
(N = 38)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	66.6053	7.016	68.5526	12.729	0.546	-1.13
Moral Awareness	6.2105	1.758	7.0526	2.205	0.513	-2.60**
Moral Thinking	6.0000	1.627	6.3947	1.480	0.606	-1.76
Moral Action	7.8421	1.620	8.2895	1.374	0.701	-2.34*
Moral Attitude	46.5526	4.416	48.4737	3.073	0.464	-2.93**

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were -1.13, -2.60 -1.76, -2.34 and -2.93 respectively. The t-value for Moral Awareness and Moral Attitude showed significance at 0.01 level and those for Moral Action showed significance at 0.05 level. The critical ratios for Moral Values and Moral Thinking had no significance at any level.

27. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 26.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 26 is given in Table 30.

TABLE 30

**Data and Result of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.26
(N = 38)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	68.1316	6.183	70.1316	7.513	0.843	-3.05**
Moral Awareness	6.5263	2.275	7.0526	2.229	0.645	-1.71
Moral Thinking	5.8158	1.291	6.1842	1.270	0.318	-1.52
Moral Action	8.0789	1.549	8.2895	1.450	0.567	-0.93
Moral Attitude	47.7105	3.777	48.6053	4.565	0.766	-1.87

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -3.05, -1.71, -1.52, -0.93, -1.87 respectively. The critical ratios obtained for Moral Values showed significance at 0.01 level. All other values had no significance at any level.

28. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 27.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 27 is given in Table 31.

TABLE 31

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.27
(N = 38)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.2895	7.683	73.6316	5.744	0.727	-5.07**
Moral Awareness	6.7368	1.855	8.0526	1.643	0.412	-4.26**
Moral Thinking	6.0789	1.421	6.4211	1.266	0.462	-1.51
Moral Action	8.0526	1.770	8.8684	0.991	0.636	-3.66**
Moral Attitude	48.4211	5.134	50.2895	4.191	0.518	-2.48*

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The means of pre-test and post-test were compared for significance and got the t-values for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -5.07, -4.26, -1.51, -3.66 and -2.48 respectively. The critical ratios obtained for Moral Values, Moral Awareness and Moral Action showed significance at 0.01 level and those for Moral

Attitude showed significance at 0.05 level. Moral Thinking had no significance at any level.

29. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 28.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 28 is given in Table 32.

TABLE 32

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.28
(N = 36)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	59.2222	9.097	61.4444	9.013	0.850	-2.69**
Moral Awareness	4.9167	2.075	5.4722	2.049	0.507	-1.63
Moral Thinking	5.1111	1.508	5.0000	1.444	0.538	-1.64
Moral Action	6.8889	2.605	6.8611	2.167	0.751	0.10
Moral Attitude	42.3056	5.253	43.6111	5.426	0.793	-2.28*

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -2.69, -1.63, -1.64, 0.10 and -2.28 respectively. The critical ratio obtained for Moral Values showed

significance at 0.01 level and for Moral Attitude showed significance at 0.05 level while all other values had no significance at any level.

30. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 29.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 29 is given in Table 33.

TABLE 33

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.29
(N = 34)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	64.2941	9.999	67.5000	8.043	0.740	-2.77**
Moral Awareness	6.3529	1.873	7.2059	1.871	0.584	-2.91**
Moral Thinking	5.5882	1.328	6.0882	1.264	0.437	-2.12*
Moral Action	7.5000	1.656	8.1176	1.935	0.501	-1.99*
Moral Attitude	44.8529	7.727	46.0882	5.259	0.621	-1.19

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action, and Moral Attitude were -2.77, -2.91, -2.12, -1.99 and -1.19 respectively. The critical ratios for Moral Values and Moral

Awareness showed significance at 0.01 level, Moral Thinking and Moral Action showed significance at 0.05 level and Moral Attitude had no significance at any level.

31. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Teacher No. 30.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Teacher No. 30 is given in Table 34.

TABLE 34

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Teacher No.30
(N = 43)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	62.6744	10.410	67.9070	5.322	0.547	-3.93**
Moral Awareness	6.2093	1.627	6.1163	1.828	0.680	-0.44
Moral Thinking	5.3488	1.494	5.5581	1.402	0.496	-0.94
Moral Action	7.1860	1.955	7.9535	1.379	0.542	-3.01**
Moral Attitude	43.9302	8.069	48.2791	3.439	0.446	-3.95**

** – Indicates significance at 0.01 level.

The means of pre-test and post-test were compared for significant difference and the critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were, -3.93,

0.44, -0.94, -3.01 and -3.95 respectively. The critical ratios for Moral Values, Moral Action and Moral Attitude showed significance at 0.01 level and Moral Awareness and Moral Thinking had no significance at any level.

Discussion

The results presented from Tables 5 to 34 can be summarised as follows. Of the 30 teachers 22 teachers (73%) could show a significantly higher mean score for the major variable Moral Values after the transaction of the select eight values using the special lesson plans based on JIM.

Of the 30 teachers 16 teachers (53%) could show a significantly higher mean score for the variable Moral Awareness after the transaction of the same eight values.

Six teachers out of the 30 (20%) could show a significantly higher mean score for the variable Moral Thinking after the transaction of the same lessons.

Ten teachers out of the 30 (33%) could show a significantly higher mean score for the variable Moral Action after the transaction of the same eight values.

Of the 30 teachers 11 teachers (37%) could show a significantly higher mean score for the variable Moral Attitude after the transaction of the same eight lessons.

The above findings show that the special lessons meant for developing Moral Values in secondary school students are capable of realising this objective to a great extent. Of the four components of Moral Values namely Moral Awareness, Moral Thinking, Moral Action and Moral Attitude, it is found that the lessons are capable of developing Moral Awareness to a moderate extent. But Moral Attitude and Moral Action are developed to a less extent and Moral Thinking to the least extent. Still all these five variables have shown an increase from their entry condition, which shows the lessons had a positive effect. Hence, it is felt that if the number of classes are increased and each class separately stressing on each of these components, the lesson plans used in the study would be able to realise the development of all variables alike.

The development of the variables was in the order of Moral Values, Moral Awareness, Moral Attitude, Moral Action and the last of all comes Moral Thinking. The earlier studies had shown that it is very difficult to inculcate Moral Thinking among the students and this study also reveals the same. The investigator believes that this is because the training was based only on eight major values and classes. If the classes had included some of the minor values also, and had specifically given training for thinking, Moral Thinking and other components also might have been increased.

From the 30 samples, only two teachers could not develop Moral Values and any of the components among their students. On enquiry they informed that the busy schedule of their school along with some of the personal problems did not allow them to complete the stipulated eight classes for their students. This might be the reason of their negative results, Still, they were more favourable and positive towards the procedure in which they were trained.

From the above findings, it may be concluded that the transaction procedure as explained in the lessons prepared for teachers for teaching the values present in the Biology Curriculum was effective to develop Moral Values and the select components in secondary school pupils.

32. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Male teachers.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of male teachers are given in Table 35.

TABLE 35

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Male Teachers
(N = 329)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	66.1125	8.173	68.4590	8.896	0.715	-6.57**
Moral Awareness	6.2675	1.999	6.9362	2.189	0.561	-6.16**
Moral Thinking	5.7538	1.571	6.0365	1.446	0.458	-3.26**
Moral Action	7.6535	1.934	8.1094	1.855	0.679	-5.44**
Moral Attitude	46.4377	5.142	47.5684	4.710	0.578	-4.51**

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were -6.57, -6.16, -3.26, -5.44 and -4.51 respectively. All the values showed significance at 0.01 level.

**33. Comparison of Mean Scores of the Select Variables between the
Pre-test and Post-test for the Students of Female Teachers**

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of female teachers are given in Table 36.

TABLE 36

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Female Teachers
(N = 765)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	68.4928	8.276	70.9582	6.985	0.701	-11.32**
Moral Awareness	6.8967	2.082	7.5621	1.997	0.556	-9.57**
Moral Thinking	5.8248	1.459	6.0170	1.430	0.363	-3.26**
Moral Action	7.8248	1.848	8.2118	1.756	0.576	-6.44**
Moral Attitude	47.9464	5.408	49.1673	4.159	0.531	-7.09**

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -11.32, -9.57, -3.26, -6.44 and -7.09 respectively. All the critical ratios showed significance at 0.01 level.

Discussion

From Tables 35 and 36, it is found that the critical ratios of each of the select variables that is, Moral Values , Moral Awareness , Moral Thinking , Moral Action and Moral Attitude were significant at 0.01 level.

The higher values of post-test means and significant difference in mean scores for both male and female teachers have shown that both could develop

Moral Values and all its components by applying the transactional strategy in which they were trained.

Thus from the above findings, it could be understood that the transaction procedure as explained in the lessons prepared was effective to develop Moral Values and all its components in secondary school pupils.

34. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Thrissur Region

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Thrissur region is given in Table 37.

TABLE 37

Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Thrissur Region (N = 230)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	71.3174	6.396	73.1957	6.187	0.614	-5.15**
Moral Awareness	7.3435	1.890	7.8826	1.783	0.490	-4.40**
Moral Thinking	6.0043	1.283	6.2043	1.294	0.276	-1.96*
Moral Action	7.9739	1.800	8.3522	1.672	0.624	-3.80**
Moral Attitude	49.9957	3.880	50.7565	3.717	0.365	-2.69**

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The Moral Values had a critical ratio of 5.15 and for Moral Awareness the critical ratio was 4.40. Moral Thinking had a critical ratio of 1.96. The Moral Action had 3.80 as t-value while for Moral Attitude this was 2.69. Here all the critical ratios except Moral Thinking showed significance at 0.01 level and the critical ratio of Moral Thinking showed significance at 0.05 level.

35. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Manjeri Region

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Manjeri Region is given in Table 38.

TABLE 38

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Manjeri Region
(N = 563)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.0426	8.103	69.4565	8.183	0.725	9.49**
Moral Awareness	6.5115	2.099	7.2682	2.219	0.558	8.84**
Moral Thinking	5.7602	1.531	6.0373	1.466	0.405	4.02**
Moral Action	7.7833	1.854	8.2220	1.778	0.619	6.56**
Moral Attitude	46.9876	5.031	48.0409	4.421	0.589	5.79**

** – Indicates significance at 0.01 level.

Comparison of the mean scores between the pre-test and post-test was done and the critical ratios obtained were -9.49 , -8.84 , -4.02 , -6.56 and -5.79 for the select variables Moral Values, Moral Awareness, Moral Thinking, Moral Action and moral attitude. All the critical ratios showed significance at 0.01 level.

36. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Calicut University Campus School Region

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Calicut University Campus School Region is given in Table 39.

TABLE 39

Data and Results of Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Calicut University Campus School Region (N = 301)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	66.4452	9.230	69.3256	7.226	0.684	-7.35^{**}
Moral Awareness	6.5880	2.082	7.1827	1.947	0.600	-5.71^{**}
Moral Thinking	5.7309	1.561	5.8571	1.462	0.427	-1.35
Moral Action	7.6013	1.960	7.9734	1.869	0.578	-3.67^{**}
Moral Attitude	46.5249	6.325	48.3123	4.347	0.511	-5.59^{**}

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were 7.35, 5.71, 1.35, 3.67 and 5.59 respectively. All the critical ratios except Moral Thinking showed significance at 0.01 level and Moral Thinking had no significance at any level.

Discussion

From Tables 37, 38 and 39, it is found that the critical ratios of Moral Values, Moral Awareness, Moral Attitude and Moral Action showed significance at 0.01 level. Moral Thinking showed significance at 0.01 level in Manjeri region and at 0.05 level in Thrissur region but had no significance at any level in Calicut University Campus Region. This may be due to the reason that, from their opinion, the teachers in the Calicut University Campus School Region were very busy with their school schedule. Besides, the shift system in their schools minimised the duration of each class and this might have influenced the result. From the above findings it could be concluded that the transaction procedure as explained in the lessons prepared for teachers to transact the values in the Biology Curriculum was effective to develop Moral Values and its components in secondary school students of the three regions studied, i.e., Thrissur, Manjeri and Calicut University Campus, though Moral Thinking is found difficult to be developed.

37. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for Boys

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for Boys is given in Table 40.

TABLE 40

**Data and Results of
Comparison of Mean Scores of the
Select Variables between the Pre-test and Post-test for Boys
(N = 577)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	68.3830	7.655	70.6049	6.918	0.702	-9.42**
Moral Awareness	6.8336	1.961	7.4991	2.023	0.521	-8.11**
Moral Thinking	5.7331	1.444	5.9653	1.445	0.334	-3.35**
Moral Action	7.6638	1.913	8.1456	1.783	0.590	-6.90**
Moral Attitude	48.1525	4.743	48.9948	4.098	0.536	-4.71**

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -9.42, -8.11, -3.35, -6.90 and -4.71 respectively. The critical ratios for all the select variables showed significance at 0.01 level.

38. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for Girls

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for girls is given in Table 41.

TABLE 41
Data and Results of
Comparison of Mean Scores of the Select
Variables between the Pre-test and Post-test for Girls
(N = 517)

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.1006	8.951	69.7621	8.458	0.708	-9.07**
Moral Awareness	6.5667	2.192	7.2340	2.126	0.614	-7.99**
Moral Thinking	5.8820	1.544	6.0870	1.420	0.454	-3.00**
Moral Action	7.8956	1.826	8.2205	1.790	0.632	-4.76**
Moral Attitude	46.7563	5.915	48.3424	4.678	0.562	-7.10**

** – Indicates significance at 0.01 level.

The pre-test and post-test means were compared for significant difference and the critical ratios obtained for the select variables Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -9.07, -7.99, -3.00, -4.76 and -7.10 respectively. All the critical ratios showed significance at 0.01 level.

Discussion

From Tables 40 and 41, it is found that all the critical ratios of the select variables that is Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude showed significance at 0.01 level.

The higher values of post-test means and significant difference in mean scores for Boys and Girls have shown that the transaction procedure as explained in the lessons prepared was effective to develop Moral Values and all its components in both boys and girls.

39. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Government Schools.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of government school is given in Table 42.

TABLE 42

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Government Schools
(N = 664)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.5346	8.375	69.8901	7.636	0.730	-10.25**
Moral Awareness	6.7018	2.107	7.4142	2.071	0.565	-9.42**
Moral Thinking	5.7034	1.520	5.9232	1.446	0.383	-3.01**
Moral Action	7.7410	1.921	8.1928	1.820	0.591	-6.87**
Moral Attitude	47.3614	5.355	48.3599	4.606	0.575	-5.55**

** – Indicates significance at 0.01 level.

When the mean scores of pre-test and post-test of the select variables were compared, the critical ratios obtained were -10.25, -9.42, -3.01, -6.87 and -5.55 respectively for the above variables. All the critical ratios were significant at 0.01 level.

40. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Aided Schools

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Aided Schools are given in Table 43.

TABLE 43

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Aided Schools
(N = 430)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	68.1512	8.213	70.6953	7.761	0.668	-8.09**
Moral Awareness	6.7163	2.032	7.3116	2.083	0.567	-6.45**
Moral Thinking	5.9163	1.444	6.1767	1.403	0.402	-3.47**
Moral Action	7.8233	1.803	8.1628	1.734	0.643	-4.71**
Moral Attitude	47.6953	5.398	49.1907	3.991	0.518	-6.50**

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , moral action, and Moral Attitude were -8.09, -6.45, -3.47, -4.71 and -6.50 respectively. All the critical ratios showed significance at 0.01 level.

Discussion

From Tables 42 and 43, it is found that all the critical ratios of the variables Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude showed significance at 0.01 level. The higher values of post-test means and significant difference in mean scores for Government and Aided Schools have shown that the transaction procedure as explained in the

lessons prepared was effective to develop Moral Values and all its components in secondary school pupils.

41. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Urban Schools

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Urban School is given in Table 44.

TABLE 44

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Urban Schools
(N = 325)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.9046	7.366	71.9692	6.330	0.701	-6.92**
Moral Awareness	7.0615	1.960	7.8031	1.942	0.474	-6.68**
Moral Thinking	5.9262	1.329	6.0831	1.428	0.309	-1.74
Moral Action	8.0308	1.739	8.3969	1.685	0.633	-4.50**
Moral Attitude	48.8862	4.679	49.6862	3.670	0.494	-3.36**

** – Indicates significance at 0.01 level.

When the mean scores of pre-test and post-test were compared for significant difference, the critical ratios obtained were -6.92, -6.68, -1.74, -4.50 and -3.36 respectively for the above variables. The critical ratios for Moral Values, Moral Awareness, Moral Action and Moral Attitude showed

significance at 0.01 level, while Moral Thinking had no significance at any level.

42. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Rural Schools.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Rural school is given in Table 45.

TABLE 45

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Rural Schools
(N = 769)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	66.8778	8.529	69.4616	8.089	0.699	-11.09**
Moral Awareness	6.5579	2.108	7.1925	2.105	0.590	-9.22**
Moral Thinking	5.7516	1.555	5.9974	1.437	0.423	-4.23**
Moral Action	7.6645	1.921	8.0897	1.820	0.597	-7.02**
Moral Attitude	46.9038	5.538	48.2640	4.600	0.556	-7.78**

** – Indicates significance at 0.01 level.

The means of the pre-test and post-test for the select variables were compared and the obtained critical ratios were -11.09, -9.22, -4.23, -7.02 and -7.78 for Moral Values , Moral Awareness , Moral Thinking , Moral Action and Moral Attitude respectively.

and Moral Attitude respectively. All the t-values showed significance at 0.01 level.

Discussion

From Tables 44 and 45, it is found that the critical ratios of the variables Moral Values, Moral Awareness, moral action, Moral Attitude and Moral Thinking showed significance at 0.01 level except Moral Thinking for the students of Urban School. Both the Urban and Rural Schools followed the same procedure; still the critical ratio of Moral Thinking in Urban School students had no significance at any level. This may be due to the effect of life which is very fast in Urban areas and thus the students find no time and need to think about the moral issues and the like.

From the above findings it may be concluded that for Urban and Rural Schools the transaction procedure as given in the lessons prepared for teachers to transact Biology Curriculum was effective to develop Moral Values and the select components in secondary school pupils.

43. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Co-educational Schools.

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Co-educational Schools is given in Table 46.

TABLE 46

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Co-educational Schools
(N = 868)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.1348	8.376	69.7293	7.890	0.687	-11.85**
Moral Awareness	6.5611	2.081	7.2523	2.074	0.573	-10.61**
Moral Thinking	5.7984	1.526	6.0426	1.427	0.408	-4.47**
Moral Action	7.7281	1.893	8.1302	1.809	0.599	-7.14**
Moral Attitude	47.0472	5.458	48.3767	4.511	0.529	-7.98**

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -11.85, -10.61, -4.47, -7.14 and -7.98 respectively. All these showed significance at 0.01 level.

44. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Boys-only Schools

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Boys only schools is given in Table 47.

TABLE 47

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Boys only Schools
(N = 152)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.8553	7.844	71.5592	6.870	0.759	-4.05**
Moral Awareness	7.1316	1.925	7.7566	2.010	0.462	-3.77**
Moral Thinking	5.7500	1.333	5.8355	1.494	0.378	-0.67
Moral Action	7.7829	1.966	8.2368	1.851	0.684	-3.68**
Moral Attitude	49.1908	4.836	49.7303	3.782	0.567	-1.62

** – Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -4.05, -3.77, -0.67, -3.68 and -1.62 respectively. The critical ratios for Moral Values, Moral Awareness, and Moral Action showed significance at 0.01 level while Moral Thinking and Moral Attitude had no significance at any level.

45. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Girls-only Schools

The data and result of the test of significance of difference in means of the select variables between the pre-test and post-test for the students of Girls-only schools is given in Table 48.

TABLE 48

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Pre-test and Post-test for the Students of Girls only Schools
(N = 74)**

Variables	Pre-test		Post-test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	71.0405	7.051	73.0270	5.861	0.815	-4.18**
Moral Awareness	7.5541	2.028	8.0135	2.044	0.560	-2.07*
Moral Thinking	5.9730	1.414	6.1757	1.378	0.227	-1.00
Moral Action	8.2838	1.340	8.6622	1.242	0.462	-2.43*
Moral Attitude	49.2297	4.296	50.1757	3.442	0.776	-3.00**

** – Indicates significance at 0.01 level.

* – Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -4.18, -2.07, -1.00, -2.43 and -3.00 respectively. The t-values for Moral Values, Moral Action and Moral Attitude were significant at 0.01 level and that for Moral Awareness was significant at 0.05 level and that for Moral Thinking had no significance at any level.

Discussion

From Tables 46, 47 and 48, it is found that the critical ratios of the variables Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude showed significance at 0.01 level except in the single-sex

schools. In Boys only and Girls only schools, Moral Thinking had no significance at any level. This may be due to the chance of group discussion based on view points of both sexes is null in such type of schools.

From the above findings it could be concluded that the transaction procedure as explained in the lessons prepared for teachers to transact values in the Biology Curriculum was effective to develop Moral Values and the select components in secondary school pupils of Co-educational, Boys- and Girls- only Schools.

EXAMINATION OF THE RESULTS OF COMPARISON BETWEEN PRE-TEST AND POST-TEST

The above results have revealed that the variable 'Moral Values' showed significant difference between pre-test and post-test means for the Total sample, 22 out of 30 teacher samples, Boys and Girls, students of Male and Female teachers, Thrissur, Manjeri and Calicut University Campus Regions, Government and Aided Schools, Urban and Rural Schools, co-educational, Boys-only and Girls-only schools.

From these results it could be understood that there is a positive effect for training to develop Moral Values identified from the secondary school Biology Curriculum through the developed lessons.

From the findings of the study it is shown that the variable 'Moral Awareness' was significantly developed for the Total sample, 16 out of 30 teachers, Boys and Girls, Students of Male and Female teachers, Thrissur, Manjeri and Calicut University Campus Regions, Government and Aided Schools, Urban and Rural Schools, Co-educational, Boys-only and Girls-only Schools.

From these results, it could be understood that there is a positive effect for training to develop 'Moral Awareness ' from the values identified from the secondary school Biology Curriculum through the developed lessons.

The results have shown that the variable 'Moral Thinking ' is significantly developed for the Total sample, 6 out of 30 teachers, Boy and Girls, Students of Male and Female Teachers, Thrissur and Manjeri Regions, Government and Aided Schools, Rural School and Co-educational type of schools. From these findings it could be concluded that though with difficulty, if specifically tried, it is possible to develop Moral Thinking by transacting values identified from the secondary school Biology Curriculum through the developed lessons.

From the analysis of data, it is found that the variable 'Moral Action' showed significant development for the Total sample, 10 out of 30 teachers, Boys and Girls, Students of Male and Female Teachers, Thrissur, Manjeri and Calicut University Campus Regions, Government and Aided Schools, Urban

and Rural Schools, Co-educational, Boys-only and Girls-only schools. From these findings, it could be concluded that there is a positive effect for training to develop Moral Action by transacting values identified from the secondary school Biology Curriculum through the developed lessons.

The analysis of data had shown that the variable 'Moral Attitude' is significantly developed for the Total sample, 11 out of 30 teachers, Boys and Girls, Students of Male and Female Teachers, Thrissur, Manjeri and Calicut University Campus Regions, Government and Aided Schools, Urban and Rural Schools, Co-educational and Girls-only Schools. From these findings it could be concluded that there is a positive effect for training to develop 'Moral Attitude' by transacting values identified from the secondary school Biology Curriculum through the developed lessons.

From the analysis of the data it is found that Moral Values and all its selected components are fully developed and showed high significant results in the case of Total sample, Boys and Girls, Students of Male Teachers, Female Teachers, Thrissur and Manjeri Regions, Government and Aided Schools, Rural Schools and Co-educational Schools.

It is also observed from the analysis that only four categories of the samples, i.e., students of University Campus School Region, Urban School, Boys-only and Girls –only Schools, did not show significant result in only one variable 'Moral Thinking '. Likewise, students of Boys-only schools did

not show significant result in the variable 'Moral Attitude'. In the case of individual teacher samples, eight teachers did not show significant result in 'Moral Values ', 14 teachers in 'Moral Awareness ', 24 teachers in 'Moral Thinking ', 20 Teachers in 'Moral Action' and 19 teachers in 'Moral Attitude'.

From these analysis, it is understood that from all the categories of samples the individual teacher samples only, did not give significant results especially in the variable 'Moral Thinking '. This might be due to the reason that the involvement in the special strategy of those teachers who failed to develop the variables was less which affected the results.

On enquiry those teachers also had suggested some possible reasons for the failure, they felt that if the number of classes are increased from eight, including minor values also it will reinforce the development of major values. Some of the other difficulties the teaches faced in the classrooms which affected their involvement in the transaction procedure were the shift system in their schools that minimised time for each class, and the grading system introduced newly at that time causing overload of work and preparation for the same.

Hence, from the findings of the study it can be concluded that the special lessons prepared based on JIM to transact Biology Curriculum are capable of developing the select Moral Values with its four components in secondary school pupils.

Section II of the analysis is following below.

SECTION - II

The investigator conducted a retention test in the possible samples which was done after a gap of one month from the post-testing. This included 479 students belonging to nine samples namely, **Total sample, students of Male and Female Teachers, Boys and Girls, Government and Aided Schools, Urban and Rural Schools.** This test aimed at knowing the extent of retention of Moral Values developed through the special lessons.

The analysis of data and the results are given below.

46. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Total Sample

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for Total sample is given in Table 49.

Table 49

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Post-test and Retention test for the Students of Total Sample
(N = 479)**

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.1691	8.158	65.6430	17.322	0.279	4.55**
Moral Awareness	7.1461	2.024	6.8914	2.526	0.472	2.34*
Moral Thinking	5.9645	1.435	5.5783	1.956	0.270	4.04**
Moral Action	8.0438	1.805	7.5073	2.537	0.351	4.61**
Moral Attitude	48.1461	4.538	45.6660	11.891	0.255	4.68**

** - Indicates significance at 0.01 level.

* - Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were 4.55, 2.34, 4.04, 4.61 and 4.68 respectively.

Discussion

From Table 49, it is found that critical ratios of all the variables namely Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude are higher than the level of significance. That is, they exceed 1.96.

These results show that the retention test mean scores were lower than post-test means and hence it is drawn from the results that retention of the variables is not found for the total sample.

From the above findings, it could be understood that the effect of training given for developing Moral Values , through the developed lessons was not long lasting in the total sample.

47. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Male Teachers

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for the students of Male Teachers is given in Table 50.

TABLE 50

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Post-test and Retention test for the Students of Male Teachers
(N = 112)**

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	67.9911	10.748	64.3750	19.579	0.202	1.88
Moral Awareness	6.8839	2.229	6.6875	2.695	0.531	0.86
Moral Thinking	6.1161	1.450	5.6518	2.320	0.341	2.16*
Moral Action	8.0268	1.773	7.5446	2.793	0.354	1.87
Moral Attitude	47.5268	5.117	44.4911	13.194	0.160	2.40*

* - Indicates significance at 0.05 level.

The means of post-test and retention test were compared for significant difference and the critical ratios obtained were 1.88, 0.86, 2.16, 1.87 and 2.40

for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude respectively.

48. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Female Teachers

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for the students of Female Teachers is given in Table 51.

TABLE 51

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Post-test and Retention test for the Students of Female Teachers
(N = 367)**

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.5286	7.164	66.0300	16.582	0.320	4.24**
Moral Awareness	7.2262	1.953	6.9537	2.473	0.447	2.20*
Moral Thinking	5.9183	1.429	5.5559	1.834	0.243	3.41**
Moral Action	8.0490	1.818	7.4959	2.457	0.351	4.25**
Moral Attitude	48.3351	4.336	46.0245	11.459	0.290	4.02**

** - Indicates significance at 0.01 level.

* - Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were 4.24, 2.20, 3.41, 4.25 and 4.02 respectively.

Discussion

From Table 50 it is found that the critical ratios of Moral Values, Moral Awareness and Moral Action are less than the level of significance, i.e., 1.96. But the t-values of Moral Thinking and Moral Attitude exceed the level of significance.

Table 51 shows that all the critical ratios exceed the level of significance.

From these results, it could be drawn that the variables, Moral Values, Moral Awareness, and Moral Action are retained by the students of male teachers and thus the effect of the developed lessons is confirmed. But for the students of female teachers the result have shown that the effect of the developed lessons was not long lasting.

49. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for Boys

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for Boys is given in Table 52.

TABLE 52

**Data and Results of
Comparison of Mean Scores of the Select
Variables between the Post-test and Retention test for Boys
(N = 213)**

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.6620	6.853	64.2676	19.484	0.295	4.22**
Moral Awareness	7.3239	2.008	6.8685	2.695	0.429	2.58**
Moral Thinking	5.9577	1.458	5.2770	1.994	0.236	4.57**
Moral Action	3.0094	1.772	7.2207	2.756	0.334	4.21**
Moral Attitude	48.3709	4.039	44.9014	13.473	0.294	3.93**

** - Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, moral action, and Moral Attitude were, 4.22, 2.58, 4.57, 4.21 and 3.93 respectively.

50. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for Girls

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for Girls is given in Table 53.

TABLE 53

**Data and Results of
Comparison of Mean Scores of the Select
Variables between the Post-test and Retention test for Girls
(N = 266)**

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	68.7744	9.062	66.7444	15.323	0.292	2.16*
Moral Awareness	7.0038	2.029	6.9098	2.387	0.516	0.70
Moral Thinking	5.9699	1.419	5.8195	1.895	0.302	1.23
Moral Action	8.0714	1.834	7.7368	2.326	0.370	2.30*
Moral Attitude	47.9662	4.901	46.2782	10.439	0.240	2.64**

** - Indicates significance at 0.01 level.

* - Indicates significance at 0.05 level.

The post-test and retention test were compared for correlated mean differences and thus the critical ratios obtained were, 2.16, 0.70, 1.23, 2.30 and 2.64 for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude respectively.

Discussion

Table 52 shows that all the critical ratios exceed the level of significance. Hence the effect of training given for developing Moral Values through the developed lessons will not be long lasting in the case of Boys. But in the case of girls, Moral Awareness and Moral Thinking are retained by them while Moral Values, Moral Action and Moral Attitude are not retained (Table 53). Hence the effect of training given for developing Moral

Values through the earlier lessons will be long lasting in the case of girls for certain variables.

51. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Government Schools

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for the students of Government Schools is given in Table 54.

TABLE 54

Data and Results of Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Government Schools (N = 319)

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.3762	7.766	66.0658	16.304	0.324	3.78**
Moral Awareness	7.2790	1.976	6.9749	2.462	0.491	2.38*
Moral Thinking	5.9216	1.429	5.5674	1.890	0.273	3.11**
Moral Action	8.0533	1.875	7.5266	2.486	0.341	3.68**
Moral Attitude	48.1223	4.739	45.9969	11.131	0.272	3.50**

** - Indicates significance at 0.01 level.

* - Indicates significance at 0.05 level.

The means of post-test and retention test were compared for significant difference and the critical ratios obtained for the select variables Moral

Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were 3.78, 2.38, 3.11, 3.68, and 3.50 respectively.

52. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Aided Schools

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for the students of Aided Schools is given in Table 55.

TABLE 55

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Post-test and Retention test for the Students of Aided Schools
(N = 160)**

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	68.7563	8.898	64.8000	19.218	0.209	2.58**
Moral Awareness	6.8813	2.096	6.7250	2.649	0.432	0.77
Moral Thinking	6.0500	1.448	5.6000	2.087	0.265	2.58**
Moral Action	8.0250	1.663	7.4688	2.642	0.375	2.77**
Moral Attitude	48.1938	4.122	45.0063	13.290	0.232	3.11**

** - Indicates significance at 0.01 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were, 2.58, 0.77, 2.58, 2.77 and 3.11 respectively.

Discussion

Table 54 shows that all the critical ratios exceed the level of significance. Hence the effect of training given for developing Moral Values through the developed lessons will not be long lasting in the case of students of Government schools. But in the case of students of Aided schools there is no significant difference in the case of Moral Awareness. Hence the effect on Moral Awareness will be long lasting if the developed lessons are applied.

53. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Urban Schools

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for the students of Urban Schools is given in Table 56.

TABLE 56
Data and Results of Comparison
of Mean Scores of the Select Variables between
the Post-test and Retention test for the Students of Urban Schools
(N = 28)

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	70.8929	5.940	66.3214	19.069	0.353	1.35
Moral Awareness	7.9286	1.489	7.3929	2.470	0.290	1.14
Moral Thinking	6.2143	1.228	5.3929	1.873	0.123	2.06*
Moral Action	8.5357	1.644	7.7857	2.500	0.525	1.84
Moral Attitude	48.2143	4.022	45.7500	13.238	0.387	1.06

* - Indicates significance at 0.05 level.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking , Moral Action and Moral Attitude were, 1.35, 1.14, 2.06, 1.84 and 1.06 respectively.

54. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Rural Schools

The data and result of the test of significance of difference in means of the select variables between the post-test and retention test for the students of Rural Schools is given in Table 57.

TABLE 57

**Data and Results of Comparison
of Mean Scores of the Select Variables between
the Post-test and Retention test for the Students of Rural Schools
(N = 451)**

Variables	Post-test		Retention test		r	C.R
	M ₁	S.D ₁	M ₂	S.D ₂		
Moral Values	69.0621	8.269	65.6009	17.230	0.276	4.34**
Moral Awareness	7.0976	2.044	6.8603	2.529	0.478	2.12*
Moral Thinking	5.9490	1.447	5.5898	1.962	0.278	3.65**
Moral Action	8.0133	1.812	7.4900	2.541	0.340	4.32**
Moral Attitude	48.1419	4.572	45.6608	11.819	0.247	4.55**

** - Indicates significance at 0.01 level.

* - Indicates significance at 0.05 level.

The correlated means between post-test and retention test were compared for significance, the critical ratios obtained were 4.34 for Moral

Values, 2.12 for Moral Awareness, 3.65 for Moral Thinking, 4.32 for Moral Action and 4.55 for moral attitude.

Discussion

Table 56 shows that all the t-values except that for Moral Thinking had no significant difference. So it is drawn from the result that all variables except Moral Thinking developed through the training are retained by the students of Urban schools. Hence, the effect of training given for developing Moral Values through the lessons is long lasting in the case of students of Urban schools. But in the case of students of Rural schools, since all the critical ratios exceed the level of significance (Table 57) the effect of the developed lessons has gone by the period of retention testing.

EXAMINATION OF THE RESULTS OF COMPARISON BETWEEN POST-TEST AND RETENTION TEST

From the above results it is found that Moral Values are retained by the students of Male teachers, and Urban schools out of the selected nine samples.

Moral Awareness is retained by Girls, the students of Male teachers, Aided schools and Urban schools.

Moral Thinking is retained by Girls alone.

Moral Action is retained by students of Male teachers and Urban schools.

Moral Attitude is retained by the students of urban schools only.

From these findings it could be understood that the effect of training given for developing Moral Values through the developed lessons in the case of Moral Awareness is the maximum; and then Moral Action and Moral Values, and at last Moral Attitude and Moral Thinking.

From the results it is also seen that the selected variables could not be retained by Total sample, Boys, Students of Female teachers, Government schools and Rural schools.

This may be due to the fact that during the one month interval before the retention test, no further experiences of the same kind of transaction happened. The classes ended up with the eight lessons based on eight major values only. Immediately after that the routine classes of teaching and learning of Biology content without any pointing towards values had happened. This would have eroded the effect of the earlier classes based on the special lessons. Hence it may be assumed that continued effort through the special strategy for developing values should be taken to retain the values developed already.

The findings of the study lead to the conclusion that the effect of training given for developing Moral Values and the components through the special lessons was lasting to a partial extent.

TENABILITY OF HYPOTHESES

The tenability of hypotheses was examined in the light of the above findings.

1. The hypothesis one states that there will be a positive effect for the training given to develop Moral Values identified from the secondary school Biology Curriculum which is transformed into a module. (Module here refers to the procedure used for identifying values from the Biology content and the eight lesson plans to develop the select eight values. The final module is given in the following chapter).

The critical ratios of all the select variables showed significance at 0.01 level for the total sample, Boys and Girls, the students of Male and Female teachers, Thrissur and Manjeri regions, Government and Aided schools, Rural schools and Co-educational schools. The other major samples excluded from the list are only Urban schools, Boys- and Girls- only schools and Calicut University Campus Region because Moral Thinking did not show significant difference in its means. When the select variables are studied individual teacher-wise, there was positive effect ranging from 20% to 73% for the different variables.

These findings show that the hypothesis one, though not fully, is substantiated to a great extent.

2. The second hypothesis is that the effect of training given for developing Moral Values which is presented in the module will be long lasting as evidenced through the retention of the same.

The results showed that out of the nine samples studied,

Moral Values are retained by the students of Male Teachers and Urban schools.

Moral Awareness by Girls, students of Male teachers, Aided and Urban schools.

Moral Thinking by Girls alone.

Moral Action by students of Male Teachers and Urban schools and

Moral Attitude by the students of Urban schools.

The selected variables could not be retained by,

The total sample, students of female teachers, Boys, Government schools and Rural schools.

The findings showed that the second hypothesis is not fully substantiated but substantiated to a partial extent.

CONCLUSION

The findings of the study can be concluded as the following.

1. The special lessons prepared based on JIM to transact Biology Curriculum are capable of developing the select Moral Values with the components in secondary school pupils.
2. The findings showed that the effect of training given for developing Moral Values and the components through the special lessons was lasting to a partial extent. But this can be made further lasting if continued effort through the special lessons is taken. Hence, it is concluded that the lessons are acceptable for the purpose.

On the basis of the conclusions of the study, it is confirmed that the training given to teachers to identify values from the Biology Curriculum and to transact these values through a special strategy, namely, JIM is effective for the development of Moral Values in secondary school pupils.

For this study the investigator selected limited number of Biology teachers as the sample and gave training to them first to analyse the content of the Biology Curriculum of secondary classes to find out the Moral Values and then to transact these values by using the particular strategy, JIM. But the scope of the study is beyond this limit. This study aims at all Biology teachers especially, and also to all teachers of all other subjects too. As the

aim of this study covers a very broad group, the investigator decided to convert the procedure used in the training programme into a self learning module for Biology teachers.

The developed module is presented as the next chapter.

2023/24
14

Chapter V

MODULE FOR TRANSACTING SECONDARY LEVEL BIOLOGY CURRICULUM TO DEVELOP VALUES

- * Section 1
 - * Sub sections 1-9
- * Section 2
 - * Sub sections 1-9

**MODULE OF TRANSACTING SECONDARY LEVEL
BIOLOGY CURRICULUM TO
DEVELOP VALUES**

CONTENTS

**SECTION 1 : IDENTIFICATION OF VALUES FROM STANDARD IX
BIOLOGY TEXTBOOK THROUGH CONTENT
ANALYSIS.**

**SECTION 2 : TRANSACTION OF THE SELECT VALUES THROUGH
JURISPRUDENTIAL INQUIRY MODEL**

LET US BEGIN HERE

This is a self-learning material for Biology teachers to transact Biology curriculum for developing Moral Values in secondary school students. You may know that, values are decaying day by day. Inculcation of values through value education is the need of the hour. Generally teachers are not trained to teach for developing values in students. That means, there exists a gap between the teacher training and the value-oriented education. This training material aims to bridge that gap and to provide you a training to develop values in your students. This training material is known as the training module because it is meant for training you by itself. Any of you can learn this material without any external assistance, if you proceed according to the instructions given in this.

This training module consists of **two sections**. Each section is further divided into introduction/chapters/lessons.

Section 1 of this module is concerned with the training procedure for content analysis of Biology text book of standard IX. This gives training to analyse the content to find out values inherent in the content. For this you should keep Biology text book of standard IX with you when you are going through section I of this module.

There are nine subsections in this section. The first subsection gives you an introduction to the content analysis. The other eight subsections deal

with each of the eight chapters of standard IX. This section gives training to analyse content of each chapter to identify values inherent in the chapters. The first subsection gives a general introduction which acts as a link between the existing knowledge and the procedure of this new content analysis. This is followed by the actual training procedure in detail. The training procedure demands your activity at selected points under the caption '**Learning Activity**'. Space is provided to mark your response for these activities. You have to write down the answers of the activities before proceeding to the detailed information following them.

Section 2 of this module is giving training to follow a particular instructional strategy which is coming under **Models of Teaching** known as Jurisprudential Inquiry Model (JIM). This section includes an orientation of JIM, its detailed steps and eight prepared lesson plans based on eight selected values. The description of the model demands your activity at selected points. You have to answer these activities so as to proceed with the further information following the activity.

Besides, self-check exercises under the caption **Check Your Progress** have been provided at selected places, and model answers to the questions set in these exercises are given at the end of the subsection. These exercises are not meant to be submitted for correction and evaluation. The exercises are to

function as study tools to help you keep on the right track as you read the subsection.

With the help of the training received from this module you can prepare such lesson plans by yourself and apply this model of teaching in your classrooms for developing values in students.

I hope that you will be benefitted by this module. Wish you all the best.

**SECTION 1 : IDENTIFICATION OF VALUES FROM STANDARD IX
BIOLOGY TEXT BOOK THROUGH CONTENT
ANALYSIS**

OBJECTIVE: At the end of this section you will be able to identify values from standard IX Biology text book through content analysis.

This section provides you an **introduction** first as subsection 1 which is followed by the procedure of content analysis of chapter 1 of standard IX as subsection 2. In subsection 2 content of the chapter 1 is analysed with its all details and it ends up with **Let Us Sum Up** which summarises the content analysed for finding out the major value of the chapter.

Following this, chapters of two, three and four are analysed by using the same procedure but not in as detail as chapter 1 and these are presented as subsections 3,4 and 5 respectively. Still it is hoped that you will attempt the analysis of the omitted details also by applying the same techniques used for the analysis of chapter 1. Like wise subsections 6,7,8 and 9 give you a very brief picture of analysis of the content of chapters 5,6,7 and 8. This is given in brief only, because I hope by the first four chapters you will be trained to analyse the content of any other chapter. So you may follow the procedure of analysis of the first chapter to all the succeeding seven chapters.

SUBSECTION 1. INTRODUCTION

You are doing the job of teaching. Please answer the following questions.

1. For how many years have you been teaching?

2. While you teach Biology in secondary level what were the objectives you generally keep in your mind?

3. Was there any objective to teach values?

Perhaps the answer might be that 'Values are caught rather than taught'; So there is no need of setting up such an objective at all. Perhaps you might have thought that, 'Is there any provision of values in Biology so that I can directly teach them? Or you would have said that there are some values in Biology also, but I do not know how they are to be transferred. Still all of us yearn for a value based life for our children. So, what will you do?

Here, I would like to collect your opinion by four questions. Space is provided for your answer. The answers should be in the form of Yes/No. Also you can support your answer with evidence in one or two sentences.

1. Is there any need of special concern for value development in children?

Yes/No.

2. Can the Biology content help in developing values in students?

Yes/No

3. Are you aware that the Biology content of standard IX contain values?

Yes/No.

4. Are you able to identify all the values inherent in the standard IX Biology text book?

Yes/No

If your answer is 'Yes' to the first three questions and 'No' to the fourth one, you can directly enter into this training procedure. If your answer is 'No' for all the questions you can also go through this procedure without any prejudice and after doing this, decide whether this training is useful to change your attitude. I am quite sure you also will be interested in knowing this method. If the answer is 'Yes' for all the questions, you deserve congratulations. Still you may go through this to experience this procedure I place before you. So let us start content analysis from here on. Please take your Biology text book of standard IX and start reading this.

SUBSECTION 2. CHAPTER 1. AGRICULTURE

(For those who are interested a copy of Chapter 1 in the text book is provided here. First you read the chapter and then experience the content analysis procedure of Chapter 1 to list out values)

2.1. Chapter 1 of Standard IX Biology Text Book**AGRICULTURE**

What we have learnt . . .,

- Food production does not increase proportional to population growth.
- Saplings of high quality plants can be produced through artificial vegetative propagation.
- High quality plants and animals with high yielding potential, high immunity to diseases, and long life, can be produced by means of hybridization.
- Genetic engineering, tissue culture, and cloning are related areas of research and field application that sparked off revolutionary changes in the field of agriculture.
- The hybrid variety of paddy, wheat, pepper, coconut, sugarcane, tapioca, rubber etc. are of higher quality compared with their corresponding common/rural varieties.

- The natural constitution and fertility of the soil are lost due to excessive use of chemical fertilizers. But the use of organic fertilizers helps in maintaining these qualities of the soil.
- The chemical pesticides which are not biodegradable are transferred from one organism to another in the food chain and cause bio-magnification.
- Agricultural yield can be improved by controlling the use of chemical pesticides and by using mechanical and organic ways of pest control.

"India is an agrarian country. In order to ensure a steady development of our country, it is inevitable that there is systematic progress in the field of agriculture. But has the field of agriculture achieved such an expected pace of development? In fact, is it not a reality to reckon with, that agriculture as a profession is becoming alien to the new generation?"

The above passage is an extract from a speech at the inaugural function of Young Farmers' club of a school.

It is essential to ensure that the development of a country is stable. What is meant by a stable, steady development? Don't you think that if the country is facing hurdles intermittently, thus resulting in a very unsteady development, the common man's life would be affected adversely? As India is an agrarian nation, let us examine the case of agriculture itself. Can we achieve the goal of development if we get good produce in some seasons, and

face production crisis in a few other seasons? Is it not necessary that we improve agricultural production by controlling the population growth? You have already learned how unfavourable factors like dearth of agricultural workers, high production cost etc affect production. It is necessary that scientific and technical devices are effectively implemented to resolve crisis due to such unfavourable conditions. Along with these technical aspects, is it not necessary that we, living in a land of agriculture, develop an aptitude and regard for agriculture as a profession? For this, what is required is an awareness regarding the possibilities and techniques of agriculture relevant to our locality.

You have already learned that, in Kerala, like in many other states of India, agricultural production does not increase in tune with population growth. Many reasons have been put forward for this situation.

Analyse the changes in the production of the main agricultural produce of your locality from information collected from Local Self Government Institutions and Krishibhavan. Arrive at conclusions regarding issues faced in the case of main crops from the above analysis.

There will be regional variations in the reasons and issues. Therefore, it is impractical to give common solutions for our state or country. It is only on the basis of an evaluation of regional agricultural development and the factors

influencing this development that we can achieve the goal of comprehensive agricultural production.

Mixed Cropping

You must have observed that tapioca, banana, etc are grown in coconut farms. Similarly, betel, vanilla, underground stems and root tubers etc as short term crops and pepper, pineapple, etc. as long term crops are also grown. Such a practice of growing varied crops in a mixed fashion is termed mixed cropping. The following are the advantages of mixed cropping:-

- Maximum utilization of agricultural land.
- Exploitation of the high and low availability of sunlight.
- The maximum utilization of fertilizers.

Collect information on crops suited for mixed cropping, and the techniques for their farming, and record in your science diary.

Group Farming

Do you know about the strategy adopted in a region to improve the production of paddy farms by bringing together a group of farmers working in unity, and using modern farming techniques? The unity and cooperation of farmers can be observed at all stages of cropping. Is it not desirable that this endeavour of group farming which has been started for paddy cultivation be spread to all other crops?

What are the advantages of group farming? Think together. Record your inferences in your science diary.

Rotation of Crops

Have you observed that in our fields, after paddy cultivation there is gingelly cultivation, followed by leguminous plants (pulses)? Likewise cultivation of different crops one after the other in the same field during different seasons of a year is called rotation of crops. Find out more examples for rotation of crops. Does this process help in maintaining the fertility of the soil? Plants utilize only those organic and mineral nutrients constituted in the soil for their growth. Can't these compounds, not much required by one crop, be utilized by another crop? Have you observed the swellings on the roots of pulses? Rhizobium which is the nitrogen fixing bacteria living in these swellings, convert atmospheric nitrogen into nitrates, and mix them in the soil, for easy absorption by plants. It is not necessary that pests affecting a particular crop should also affect another. Similarly, some pests living in a crop are prone to be food for those living in another. Therefore rotation of crops helps to some extent in controlling pests also.

So far, we have considered certain techniques adopted for improving agricultural production. The use of these techniques alone does not necessarily ensure improved production. Processes like irrigation, pest

control, use of fertilizers etc also need to be scientifically planned and implemented. You have already learned about all these.

Give solutions to issues faced by farmers in your region. As a part of this, organise a class seminar and let a frame work for a farming approach having local relevance, evolve from the seminar.

You have understood many aspects related to farming of different crops. Many of these crops are important as staple food crops. Along with these, vegetables are the main sources of vitamins and minerals necessary for our physical growth and metabolic functions. But are we able to produce the vegetables necessary for us in our own courtyard?

Daily diet of an adult should include about 250 gm of vegetables. The amount required is more in case of vegetarians. See the table 1 a given below.

TABLE: 1 a

The Amount of Vitamins Present in Different Kinds of Vegetables

Vegetable (100gm)	Carotene Mg	Vit B ₁ Thiamine (mg)	Vit B ₂ Riboflavin (mg)	Vit B ₆ Pyridoxine (mg)	Vit B ₃ Folic Acid (Mg)	Vit C Ascorbic Acid (mg)
Moringa leaves	6780	0.06	0.05	0.08	-----	220
Amaranthus	5520	0.03	0.30	1.2	0.149	99
Ladies finger	0.52	0.07	0.10	0.6	105.1	13
Pulses	564	0.07	0.09	0.9	---	14

Vegetable (100gm)	Carotene Mg	Vit B ₁ Thiamine (mg)	Vit B ₂ Riboflavin (mg)	Vit B ₆ Pyridoxine (mg)	Vit B ₃ Folic Acid (Mg)	Vit C Ascorbic Acid (mg)
Raw banana	30	0.05	0.02	0.3	16.4	24
Pumkin	50	0.06	0.04	0.5	13	136
Snake gourd	96	0.04	0.06	0.3	15.5	---
Pea	24	0.08	0.08	0.5	--	12
Tomato (green)	192	0.07	0.01	0.4	---	31
Bittergourd	126	0.07	0.09	0.5	---	88
Cauliflower	30	0.04	0.10	1	---	56
Carrot	1890	0.04	0.02	0.6	156	3
Cabbage	120	0.06	0.09	0.4	23	124
Beet root	---	0.04	0.09	0.4	---	10

Find answers to the following questions

- Which are the vegetables that can be grown at home?
- Which are the vegetables that we buy?
- Compare the vitamin content of moringa leaves and bittergourd, with that of beet root and cauliflower.

Do you think that those vegetables that are not grown in our land but are purchased from outside are of a higher quality? Don't you think that it will be more economic if we can grow vegetables for our daily consumption, in our own kitchen garden?

A Vegetable Garden at Home

Why do you think that it is important to have different vegetables in our daily diet? What if we make our own vegetable garden at home? Naturally, this garden should have varieties of vegetables. Let us see what are the different aspects to be considered while organising a vegetable garden at home.

Issue of Space Problem

You are aware of the different farming methods. Most households face the problem of availability of space and this has to be tackled while organising a vegetable garden at home. Following are the ways to counter the problems of space.

- Terrace farming
- Sack farming
- Optimum utilisation of available land

What are the points to be borne in mind while choosing the seed varieties? It is necessary to assure that the seeds selected are suited to the climate and the soil, and should be from high yielding varieties of plants.

Scientific Use of Fertilizers

It is not necessary that quality of the seeds alone will ensure quality of crops. Proper use of fertilizers is an important factor to ensure good quality crops. You have learned about the different ways of using fertilizers in your previous class.

Organise interviews with farmers and find out which are the appropriate fertilizers for specific vegetables and the ways and means of using these fertilizers. Record your activities and observations in your science diary.

What if there is a problem of pests after taking care of all the aspects discussed above?

Pest Control

You have learned about the adverse effects of chemical pesticides on the environment and the health of living beings. You also know about the quality of organic pesticides. Read the pest control strategies presented in table 1 - b below.

You have understood the aspects to be borne in mind while organising a vegetable garden at home. Cant' we see this excercise as a profitable business apart from aiding in becoming self sufficient with regard to our daily food requirements?

Table: 1 - b Pest Control Strategies

Pest Control Strategy	Preparation	Usage
Organic pesticide Neem seed essence	Powder 50gms of neem seeds and wrap up in a piece of cloth and tie it up. Soak this cloth pack in 1 litre of water for 12 hours. Keep on squeezing the cloth pack and make the liquid more and more thick. Dilute the liquid and spray.	Can control fruit borer caterpillars
Fly Trap Mechanical -Chemical Control	Take 3 or 4 pieces of ripe banana without removing the skin. Stick small particles of Furadan on the cut surfaces. Keep the pieces in coconut shells and have these suspended under the spreading canopy of plants like bitter gourd or snake gourd cultivation. Fruit flies will be attracted towards the banana pieces and will be killed.	Can Control flies on bitter gourd, snake gourd etc.
Lantana Emulsion Organic Pesticide	Crush and squeeze the essence of tender stem and leaves of this plant. Dissolve 60gm of cloth-wash soap, in ½ litre water, and mix with 1 litre of Lantana essence. This can be mixed with 10 times its quantity of water, and can be sprayed.	Can control mites, ticks and aphids affecting pea plants.

Careless and Unscientific

There are many pesticides that pose a challenge to physical and mental growth. DDT and Endosulphan are only a few among them. The consequences tend to be more severe when the use of these pesticides is unscientific and mindless. A few incidents of the recent past point towards this disaster.

Organise a vegetable garden in your school. The entire land space should be divided into plots according to the number of classes. Recording of activities and observations should be done at all stages right from preparing the soil upto harvesting. Make a comparative study of the yield obtained by different classes and arrive at conclusions.

What about growing flowers in the school and at home, like growing vegetables? Don't you think that this too can increase the possibility for a vocation?

Profit from Flowers

Think about the role played by flowers in maintaining the balance in nature and also in adding to nature's beauty. You might have been observing many varieties of flowers in your locality since your childhood. Do you still get to see all of them? If no, collect information on such flowers that have disappeared and make a list. Have you observed the different varieties of flowers available in the market? Which are these?

- Rose
- Jasmine
- Orchid
- Anthurium
- Marigold

There is a scientific branch termed floriculture to cover all aspects related to growing of flowering plants. You are aware that flowers are used in the preparation of perfumes. Think about the possibilities of export of flowers and the subsequent employment opportunities that can influence the economic aspects of floriculture.

The economic prospects will definitely be enriched by way of developing new varieties of flowers through floriculture. Along with this, the conservation of common local flowers is essential to maintain the delicate balance of nature. What all can we do for this?

Organise a flower garden in your school to protect the common flowering plants of your locality.

Plant Diseases

There are many plant diseases that fatally affect agricultural production. It is necessary to find effective solution for controlling such diseases and to develop resistance against diseases along with developing new crops and farming methods. See the below given table I-C (next page), for different plant diseases. Find out answers to the following questions.

- Which are the common micro organisms responsible for causing plant diseases?
- Which are the diseases spread through seeds?

- Which one of the diseases is spread by air?
- Which are the diseases spread by insects?

What are the methods adopted to protect plants from diseases?

- Use of disease resistant seeds.
- The effective use of pesticides
- Rotation of crops
- Destruction of plants attacked by viruses.

Prepare a project to list the important crops in your locality and examine whether their yield gets reduced due to plant diseases. Present this report in the class.

TABLE: 1 c. Common Diseases that Affect Crops

Sl. No.	Diseases	Crop	Cause	Mode of Spreading	Symptoms
1.	Blast	Paddy	Fungus	Through seeds	Brown spots on leaves and leaf sheaths. Seeds shrink and become chaff.
2.	Red rot	Sugarcane	Fungus	Through seeds	Stem shrinks, dries up and splits. Red secretion from the splits. Leaves dry up.
3.	Blight diseases	Paddy	Bacteria	Through seeds	Marks of different colours near the margins of leaves. Leaves dry up at the tips
4.	Stem rot	Rubber	Fungus	Through air	The bark of rubber breaks. Latex flows out. Stem dries up.
5.	Mahali	Arecanut	Fungus	Through air	Tender nuts dry up and fall off.

Sl. No.	Diseases	Crop	Cause	Mode of Spreading	Symptoms
6.	Bunchy top disease	Banana	Virus	By way of insects like aphids	Leaves grow close to each other in a congested way. The inflorescence becomes short and stunted. Stunted growth
7,	Wilt Disease	Pepper	Fungus	Through air	Parts of the plant close to soil and below the soil dry.
8.	Wilt Diseases	Brinjal	Bacteria	Through seeds, through soil	Leaves dry up and yield gets reduced.
9.	Mosaic	Pulses	Virus	Through pests	Leaves become yellow. Stunted growth
10.	Decay of Inflorescence	Coconut	Fungus	Through air	Decay of inflorescence. Poor yield.

Modern Techniques to Control Diseases

It is a practice to produce disease resistant seed varieties, using bio technological knowledge. Seeds resistant to virus have been developed from tobacco, tomato, potato etc.

Farming as a Vocation

Humans started farming and animal husbandry for food production. But today farming is growing to be a field offering great possibilities of employment. So it is necessary to aim at maximum yield from farming. Many new branches are coming up in the field of agriculture and animal husbandry. Therefore naturally there are many issues to be addressed in these areas. The following boxes present notes prepared by a student regarding issues the area of animal husbandry.

India has 25% of the cattle strength of the world, where as milk production is below 10%

Average egg production of Indian fowl is 60-70, where as that of foreign breeds is 200-300.

Daily requirement of cattle feed for cow is 15.20 kg of grass, 4.5 kg of cattle feed, 32 litres of water.

Diseases	Causative factor	Symptoms
Foot & Mouth diseases	Virus	Severe fever. Boils in the mouth and between claws, which burst open,. Loss of appetite
Swelling of udder	Bacteria	Swelling of udder, low yield of milk, infection in the udder, inflammation of nipples.
Anthrax	Bacteria	Oozing of blood from nose and mouth, foam and froth from mouth, sudden occurrence of fever.
Cattle Diseases	Bacteria	Loose and white coloured excreta. Drowsiness. Block in breathing (Stressful breathing)

Annual Milk Yield of Cows in different Countries	
Country	Milk yield in kg
Netherlands	4220
America	4250
Denmark	3710
England	2990
Pakistan	420
India	220

Opinion of a Milk Farmer
A Cow that yields 12 litres of milk requires feed worth Rs.50. Apart from this, expenditure is incurred for curing diseases and for other protective measures. What is the use of getting better yield when the expenditure goes on increasing in this manner? Considering the fat content of milk, the price of milk is very low.

On analyzing these notes, don't you think that ways and means of making the field of animal husbandry more profitable are becoming more clear? See the following points.

- Keep expenditure low
- Enhance the yielding potential
- Develop high quality cattle
- Use scientific methods to expand the field of animal husbandry.

Anthrax: From Cattle to Man

Anthrax is a cattle disease spread to humans. The causative microbe is a bacterium called *Bacillus anthracis*. These microbes spread in the soil from the animals that die of anthrax. The anthrax bacteria remain alive in the soil for long and reach humans. Another route of these bacteria is through the flesh of animals infected with Anthrax, cooked and eaten by humans.

If animal husbandry has to develop as a profession, the cattle selected for rearing should possess certain special qualities. You have learned that hybrid varieties of cattle are grown to improve the quality of cattle wealth. Let's see how hybrid varieties of cattle are produced.

Artificial Insemination

Hybridization is the process by which desirable qualities of different animals of the same genus are brought together in their offspring. You have understood about the different types of animals developed by means of hybridization. The widely adopted means of hybridization among cattle is artificial insemination. Sperms from high quality animals are collected, cooled and preserved in liquid nitrogen. These sperms are injected into females to yield high quality offsprings. Let's see the other developing areas that are equally significant as animal husbandry.

Pisciculture

Pisciculture is one of the branches of farming which involves rearing fish and prawn on a commercial basis by adopting scientific and technical means. Pisciculture developed in India as a part of the Blue Revolution. Pisciculture encompasses the following areas.

- Pisciculture-Edible fish
- Prawn rearing
- Pisciculture-Ornamental fish

Have you heard of group of co-operative pisciculture? Developmental agencies like Matsyafed are helping in popularising this system of farming.

Collect information on the above point and examine if there is possibility of pisciculture in your locality.

Only if You have Water . . .

Only if there is water, you can grow fish. By controlling water pollution, and by adopting scientific measures in the use of water and its protection, we can maintain the water wealth of the country.

Sericulture

Sericulture is an agricultural vocation which brings in a steady income with a limited capital investment. As it does not demand high technical expertise, all family members can participate in this business. Do you know how to go about sericulture?

Sericulture: A Profitable profession

It has been proved beyond doubt that if proper planning is adhered to and scientific farming techniques are adopted, sericulture can be a highly profitable vocation. Returns start flowing in within 6 months of starting sericulture. The mulberry garden started and developed to grow the larvae of silk worm, will remain as such for 12-20 years. An acre of land can yield upto Rs.20,000 as net profit.

The larvae of silk worms are fed on mulberry leaves. They grow very fast and pupate inside a cocoon made of silk threads. The cocoons of the larvae are collected. The pupae in the cocoons are killed by placing these in steam. Later they are dropped in boiled water and the silk thread is reeled out.

The Secret of Silk

It was the Chinese who discovered the technique of making silk from the cocoons of silk worms around 3000 years ago. Chinese exported clothes made of silk to Europe and Rome. The route used for this export is called 'Silk Route'. India was also a country well known for silk. The story of 'Decca Muslin Silk' is an immemorable symbol of our craftsmanship and creativity.

Apiculture

You know about the medicinal value and also the economic importance of honey. Growing of honey bees (apiculture) has become a very yielding vocation. The source of honey for the bees, is the flowers of plants.

Importance of Honey

200 gms of honey contains the nutrients equivalent to those in 1.5K.g of milk, or 1.5 K.g of butter, 340 gm meat, 10 eggs, or 8 oranges: Honey wax is used in the preparation of more than 300 products .

More and more plants are being planted today by way of co-operative afforestation programme. Discuss how this process becomes helpful to apiculture. The guidance required for apiculture is available from Khadi Board. Collect more information regarding apiculture and explore the possibilities of starting apiculture at home.

Two Birds in a Single Shot

There are many plants for co-operative afforestation and apiculture. Cassia, Neem, Moringa, Lebbek, Albizzia, Pomegranate and many other fruit trees are a few of these.

Mushroom Culture

Mushroom is an edible plant found in nature. It is a potent source of proteins and vitamins. Mushroom can be grown with very low investment in any weather condition. Collect more information on mushroom culture and try growing them.

Collect varieties of mushrooms, identify their specialities and categorize. Collect relevant information and try growing edible mushrooms.

The Pioneers in Mushroom Culture

90% of the total mushroom production of the world is from China, Italy, Korea and Taiwan. In India, mushroom culture is spreading rapidly in Andhra, Karnataka and Tamil Nadu.

The consistent development of an agrarian country like India is based on the progress in agriculture. The related vocations too have to expand parallel to agricultural production. Therefore such vocations have to be enriched in our state. It is only by utilizing the possibility of transforming the agricultural produce into commercial products, that we can improve our economic structure and thus our economic growth. Apart from all these it is necessary to ensure the scientific preservation of food items and their fair distribution. For this, the appropriate attitude and ways and means have to evolve. Only then can the vision of expansion be made a reality. Let agriculture remain a good model of our development culture.

The Paradox!

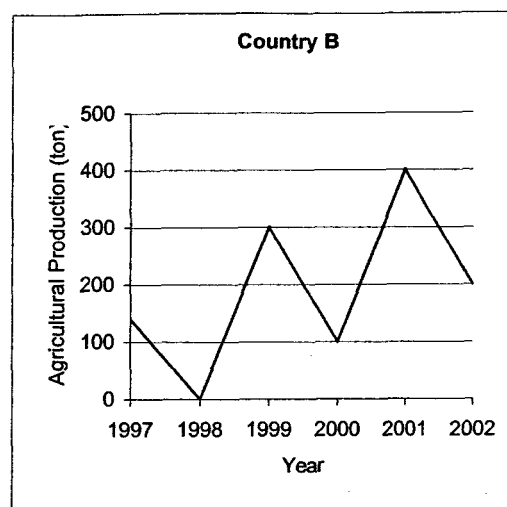
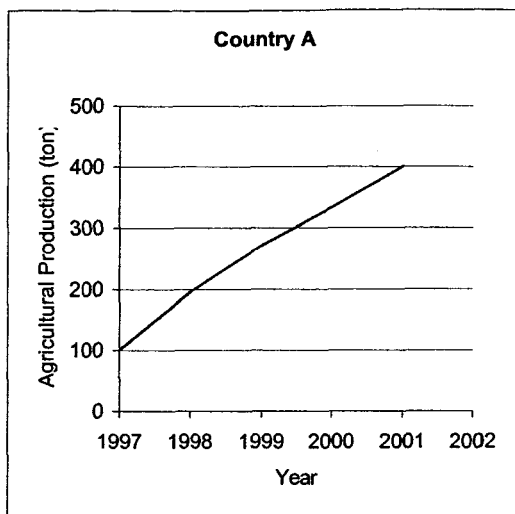
The food production of the world is sufficient to feed the whole human race on earth today, not once but twice! At the same time, more than 1.25 crores of people die of hunger in a year, according to WHO statistics. Are we not responsible for saving these unfortunate people?

SUMMARY

- Agriculture is the main aid to ensure a steady and consistent development of our country
- Horticulture, Apiculture, Mushroom culture, Poultry farming etc. are areas which clearly bring out the significance of farming as a profession.
- Mixed cropping, rotation of crops and group farming are techniques used to increase the agricultural yield.
- Different varieties of micro-organisms cause varied diseases in plants resulting in a low yield of crops.
- The amount of vitamins present in different vegetables is different
- A high breed of cattle can be produced by way of artificial insemination.
- Apart from selecting saplings or seeds suitable for the weather and landscape of a region, the aspects of availability of water and space, use of fertilizers and control of pests have to be considered while developing vegetable garden, pisciculture, sericulture and floriculture.
- To ensure a steady development of our country, it is essential that related vocations also expand along with agriculture.

Further Activities

1. The following graphs indicate the agricultural development in two countries respectively. Examine these and say which country shows steady progress?



2. How is mixed cropping different from crop rotation? How can we use paddy, coconut, tapioca, banana, yam, amorphophalus, colocasia, pea, bittergourd, snake gourd and gingely for mixed cropping and for rotation of crops?
3. What are the advantages of producing the necessary vegetables at home?
4. Below given is a list of pest control techniques adopted by a person in his vegetable garden. Analyse them and answer the following questions.
 - a. use of fruit bait consisting of Furadan _____
 - b. use of Furadan directly
 - c. use of paper cover for covering raw bananas.
 - i) Which is the pest control technique that causes the maximum side effects?

- ii) Which is the technique that has no side effect at all?
- iii) Will the side effects caused by (a) and (b) be the same? Analyse.
5. Evolve a design of a vegetable garden to be organised in 5 cents of land.
- Which types of vegetables will you select?
 - How will you collect the saplings and seeds?
 - How is the soil to be prepared for the cultivation?
 - What fertilizers will you use?
 - Which pest control techniques will you adopt.
6. Make a write-up on plant diseases.
7. It has been proved that if more than one produce is cultivated simultaneously in an interlinked fashion, the yield will increase. How can we utilise the following in this fashion.
Paddy, poultry, mushroom culture, sericulture and apiculture.
8. Anthrax is a greater threat to mankind compared to any other cattle disease. Why?
9. It has become imperative that the present generation sheds away false prestige and adopts agriculture as a means of self employment. Do you agree to this statement? Why?
10. Is growing plants for plant products, the expected goal of agriculture?
Evolve a practical definition for agriculture.

2.2. Content Analysis of Chapter 1

By reading chapter 1, I hope, you can see the chapter is having a heading. Then while reading the chapter you can note a number of subheadings. The chapter heading gives the major concept and the subheadings give the different minor concepts included in the chapter. While analyzing content for identifying values we can start from the very beginning of the chapter and take the content under each subheading separately. This will help us to identify all the values coming under all minor concepts. Let us proceed.

Minor Concept 1 - Introduction

The first minor concept is the introduction. You read, from the first of the chapter to 'Mixed Cropping' twice. At first you just go through these sentences and concentrate on each sentence at the second reading. Can you feel any values here? Let us explore.

Learning Activity 1

In the light of what you have just read, are you able to find out value of this sentence shown below? (The last but one sentence of the third paragraph) "Along with the technical aspects, is it not necessary that we living in a land of agriculture, develop an aptitude and regard

for agriculture as a profession?" You might have noticed the message of this sentence. Please write down the value you could identify.

- Notes :
- (i) *Write your answer in the space given below*
 - (ii) *Check your answer with the one given as its explanation below.*

Explanation

*We know that people are working in different fields. Some are in the Medical profession, some are Teachers, others are in Politics, another group is in Engineering, some are in Agriculture and others in productive Industrial field. All are engaged in their fields and meet their needs. Whatever may be the field, those who work hard and keep dignity of the job, are becoming competent models in these fields. They can also attract others to these fields. So paying regards to one's own job is a model to show that the job has a dignity even if it is of a low status. Hence the value here is **Dignity of Labour**.*

Minor Concept 2 - Mixed Cropping

This is the second minor concept.

Learning Activity 2

The first paragraph of this minor concept upholds a value. Find out the value.

- Notes:
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below*

Explanation

*Formerly, all people utilized their lands for maximum production and they were satisfied in their job. For this they used to collect seeds suitable for the field and produce different crops at the same time. By mixed cropping maximum utilization of all resources is possible. A preplanning is necessary for selecting and cultivating suitable crops for the land. This preplanning leads to success. The value contained in such an approach is known as **Scientific Attitude**.*

Minor Concept 3 - Group Farming**Learning Activity - 3**

In the minor concept, 'Group Farming' the paragraph upholds certain values. Which are they?

- Notes:
- i) Write your answer in the space given below.
 - ii) Check your answer with the one given as its explanation below :

Explanation

*Unity is strength. Here, members of a group are sharing an equal amount of duty. In this way if each member is committed to do his duty, the total effort will lead to success. Hence values present here are **Commitment, Cooperation, Brotherhood and Friendship.***

Minor concept 4 - Rotation of Crops

Read the minor concept 'Rotation of Crops' and try to find out the value it contains.

Learning Activity 4

'Rotation of Crops' provides you an important value.

- Notes :
- i) Write your answer in the space given below.
 - ii) Check your answer with the one given as its explanation below

Explanation

In the field of agriculture, cultivation of different crops is a regular process and also economic. Farmers can apply different crops in their field by rotation and thus the field is utilised the maximum. Rotation of certain crops will add to the fertility of the land for the next crop also. This requires thorough planning. This planning results in the maximum utilization of their field along with maximum production. This planning is a special approach which is necessary for a satisfied life. The value present in this approach is known as Scientific Attitude.

Minor Concept 5. Table 1. a Amount of Vitamins Present in Different kinds of Vegetables

Learning Activity 5

Go through Table 1-a and list out the value possible in this table.

- Notes :
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below :*

Explanation

Being reliable in communication is a highly essential value for a

successful life. Thus, even from this table we can feel the need of an important value, that is, Reliability.

Minor Concept 6 - A vegetable Garden at Home

This minor concept includes a number of aspects like Issue of space problem, Use of fertilizers, Table 1.b and Pest control. Read this minor concept and try to find out values inherent in this.

Learning Activity 6

The first aspect is 'Issue of space problem' Do you feel any values here?

Notes : i) Write your answer in the space given below

ii) Check your answer with the one given as its explanation below:

Explanation

This gives a message that, utilise all the resources available and produce the maximum. For this 'Scientific Attitude' is necessary.

Learning Activity 7

'Use of fertilizers', Here a particular value is hidden. Find out the same.

- Notes :
- i) Write your answer in the space given below.
 - ii) Check your answer with the one given as its explanation below.

Explanation

Fertilizers will increase the productivity. At the same time we will be concerned about the health of the users of the crop. So unwanted use of such fertilizers may affect the health of others and we must be careful in this, is the message here. Hence the value 'Concern for Others'.

Learning Activity 8

'Pest Control', This aspect upholds a value. Try to identify it.

- Notes :
- i) Write your answer in the space given below
 - ii) Check your answer with the one given as its explanation below

Explanation

The explanation is same as that is given to Learning Activity No. 7. Hence the value 'Concern for Others'.

Learning Activity 9

Table 1.b provides certain values. Do you know those values.

- Notes :
- i) *Write your answer in the space given below.*
 - ii) *Check your answer with the one given as its explanation below*

Explanation

If we are doing experiment it should be accurate. Hence the value present here is Accuracy. At the same time we must show 'Courageous Conviction' and accept the fault, if it happens.

Learning Activity 10.

Read the following 'box' carefully

"Careless and Unscientific"

There are many pesticides that pose a challenge to physical and mental growth. DDT and Endosulphan are only a few among them. The consequences tend to be more severe when the use of these pesticides is unscientific and mindless. A few incidents of the recent part point towards this disaster.

Identify the value hidden in the box given above?

- Notes:
- i) Write your answer in the space given below
 - ii) Check your answer with the one given as its explanation below.

Explanation

*Some of the pesticides are harmful to man and cause health problems. It is not to be used even if it provides maximum production. We should not be that much selfish. We are always concerned about ourselves. Please, extent this concern to others also. Hence the value is **Concern for Others**.*

Minor Concept 7 - Profit from Flowers

Learning Activity 11

Can you find values in this minor concept?

- Notes:
- i) Write your answer in the space given below
 - ii) Check your answer with the one given as its explanation below.

Explanation

*A number of chances are here for getting employment and thus for livelihood. One among them is the field of floriculture. The fragrance of flowers and because of this their demand is also more now-a-days. Many people are attracted to this field. Floriculture, also helpful for better livelihood. But before approaching any field we feel the value **Dignity of Labour**. Along with providing livelihood can you think about the beauty of nature by flowers! This minor concept also provides the value **Appreciation of Nature**.*

Minor Concept 8 - Plant diseases

Next minor concept is Plant diseases. It includes a table which provides you the diseases of plants and causative agents along with symptoms.

Learning Activity 12

Read the Table 1.c and find out values.

- Notes :
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below*

Explanation

The minor concept provide the value **Reliability**. The explanation is same as those given for Learning Activity No. 5.

Learning Activity 13

The last sentence of this minor concept is comparison between yield of crops and plant disease. There is a value hidden in this sentence. Find out the same.

- Notes :
- i) Write your answer in the space given below
 - ii) Check your answer with the one given as its explanation below

Explanation

In any field, many factors affect the performance/production. Don't be desperate in the result. Approach again the same with confidence and scientific attitude along with courage, surely you will succeed. So the values here are, **Scientific Attitude, Courage and Self-Control**.

Minor concept 9 - Farming as vocation

This minor concept includes a number of aspects like, Introduction, Sericulture, Apiculture, Mushroom culture and a Table. In this the table provides the value **Reliability**.

Learning Activity 14

When all the aspects are taken together, there is an important value hidden in this minor concept. Can you find out this message?

- Notes :
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below*

Explanation

*We are not aware of the limitless opportunities before us. A number of chances are here. If we fail in one, we can try another. So before starting to live we should prepare ourselves and accept the feeling that **Life is Worth living**.*

Learning Activity 15

In this minor concept, you might have noticed an important note in a box on page 14. Read carefully this note and find out the values it contains.

"Only if you have water....."

Only if there is water, you can grow fish. By controlling water pollution, and by adopting scientific measures in the use of water and its protection we can maintain the water wealth of the country".

- Notes :
- i) *Write your answer in the space given below.*
 - ii) *Check your answer with the one given as its explanation below.*

Explanation

*Scarcity of water is an acute problem today. Everyone knows that this is due to the activity of man. So it is the duty and responsibility of man to prevent pollution and thus preserve the natural resources for the existence of nature as such for the coming generations. Hence the value is **Responsibility**.*

Learning Activity 16

In apiculture, one paragraph shows the relationship between co-operative afforestation programme and apiculture. Can you describe this relationship in terms of values?

- Notes :
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below.*

Explanation

*We know the relationship between plants and animals. Life without plants is not possible for animals. That means there is an interrelationship between the two. This interrelationship is the basis of life on earth. The first component, i.e, plants are doing service to the animals. So it is the duty and responsibility of man especially, to protect nature and maintain the interrelationship between the two. Hence the values inherent here are **Interdependence of Man and Nature and Responsibility.***

Learning Activity 17

The last paragraph of this chapter given in a box provides you a message in the form of a value. Read this paragraph and find out the value it contains.

"The Paradox!"

The food production of the world is sufficient to feed the whole human race on earth today, not once but twice! At the same time more than 1.25 crores of people die of hunger in a year according to WHO statistics. Are we not responsible for saving these unfortunate people?"

- Notes :
- i) Write your answer in the space given below
 - ii) Check your answer with the one given as its explanation below

Explanation

On one side man flourishes and on the other side poverty too. This imbalance affects the nation's growth. The point stressed here is the helping hand towards the poor. Each and everyone has to share his things with others. The message of this paragraph is Servicemindedness.

Minor Concept 10 - Summary and Further Activities

Learning Activity 18

'Summary and Further activities' also provide some values. Read this carefully and list out values from them.

- Notes :
- i) Write your answer in the space given below
 - ii) Check your answer with the one given as its explanation below

Explanation

*We may feel that Life is miserable. Challenges may come to life, still we can find out alternate ways and succeed finally. There is no need for desperation. Be optimistic in every step. Courage and optimism resulting from this belief should make us feel, **Life is Worth living.***

LET US SUM UP

We have analysed the content of the first chapter in detail. A brief summary of its results are given below :

Chapter 1	:	Agriculture
<i>Major Concept</i>	:	<i>Agriculture</i>
<i>Minor Concepts</i>	:	<i>Values Identified</i>
1 Introduction	:	Dignity of Labour
2. Mixed cropping	:	Scientific Attitude
3. Group farming	:	Commitment Co-operation Brotherhood Friendship
4. Rotation of crops	:	Scientific Attitude
5. Table 1 a.	:	Reliability
6. A vegetable Garden	:	Scientific attitude

- | | | |
|-----|--------------------------------|-----------------------------------|
| | | Concern for others |
| | | Accuracy |
| | | Courageous conviction |
| | | Concern for Others |
| 7. | Profit from flowers | : Dignity of Labour |
| | | Appreciation of Nature |
| 8. | Plant diseases | : Reliability |
| | | Scientific Attitude |
| | | Courage |
| | | Self Control |
| 9. | Farming as a vocation | : Life is worth living |
| | | Responsibility |
| | | Interdependence of Man and Nature |
| | | Servicemindedness |
| 10. | Summary and Further Activities | : Life is Worth living. |

The Major Value Identified

By keeping all these values in mind once again concentrate on the heading of the chapter. Then you can understand that these values all lead to the message of the whole chapter in the form of a value. Surely this is the major value of the chapter. The minor concepts of the chapter lead to the development of the major value of the chapter. Now can you find out the major value of the chapter?

Learning Activity 19

Find out the major value of the chapter.

- Notes :
- i) Write your answer in the space given below
 - ii) Check your answer with the one given as its explanation below

Explanation

Self sufficiency, Responsibility, Concern for Others, Service-mindedness, Dignity of labour, and Scientific Attitude that helps us to plan with thinking of alternates, lead to the development of the major value. We know that all these values are very precious for leading a satisfied life. They keep us go on. They give us the feeling life is precious and a boon. Nobody has the right to endanger one's life. Hence the major value of the chapter is 'Life is worth living', means, Life is worthy and is to be lived successfully'.

From the first chapter we got the major value **Life is worth living**. Now-a-days we can see in our adolescent students, especially by the end of the secondary level there is a tendency to endanger their own life and also of others. The minute problems like shortage of marks in examinations; the delay in meeting their demands about money, dress and other materials from their parents; teasing by friends; poverty; failure in examinations and love affair, all lead to suicide or criminal tendency in them. That is why this particular value is of current importance.

Now-a-days Counselling centres/Guidance centres are becoming common. Each teacher can become a counsellor, if she is aware of such values to be taught and their way of transaction. So it is sure that, text books contain all essential values necessary for students of the specific age level. This is proved from the analysis of the first chapter. Hence it is the duty of the teachers to identify all the values hidden in the content of the text books and try to develop them in the students.

Now let us pass on the subsection 3 which deals with the second chapter of the text book. This subsection analyses only the content matter of the chapter and boxes and tables are not analysed and discussed. Hope with the earlier experience you will analyse them also and identify the values hidden there.

SUBSECTION 3. CHAPTER 2. NUTRITION IN PLANTS

Minor Concept 1. The first minor concept is the **introduction**. While you are reading this minor concept, you might have noticed a sentence in the third paragraph which provides you an important value. The sentence is, **Green Plants prepare food for all living organisms on earth.**

Learning Activity 1

Can you find out the particular value hidden in the sentence above?

- Notes :
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below.*

Explanation

Can you imagine life without plants? Plants are the first components in our ecosystem. They prepare food for all living organisms on earth. They are doing service to other components and thus doing their duty without any break. Human beings never think about this and their activities destroy the green earth. The duty and responsibility of man is to keep the balance of the

*ecosystem and keep the earth green for the future generations. This is what we have to do in turn to the service of the plant world. The values inherent here are **Servicemindedness and Duty**.*

The box in this minor concept (p.20) contains the value ***Interrelationship is the base of life***. This means there is a relationship between the components of an ecosystem. If one component is detached from the others the whole ecosystem will perish. So, try to keep the relationship. Such persons can develop other values like **Brotherhood, Servicemindedness and Sense of duty** also.

Minor Concept 2 - Factors needed for the preparation of food

Under the minor concept, a number of subheadings are given in the form of different factors needed for food preparation. These are, light, Chlorophyll, Carbondioxide and water. The necessity of all these components is proved with experiments.

Learning Activity 2

Taking all the above together, write down values inherent in them.

Notes : i) *Write your answer in the space given below*

ii) *Check your answer with the one given as its explanation below.*

Explanation

*If we are doing an experiment, it should be accurate. The results of an experiment provides data. This data should be reliable. Behind such an experiment, its findings and interpretation, hard work is necessary. Hence the values are **Hard work, Reliability and Accuracy.***

Minor concept 3 - Chemistry of Photosynthesis

This minor concept gives the details of the process of photosynthesis. If we go through its details, a particular feeling haunts you.

Learning Activity 3

Can you identify the value inherent in this minor concept.

- Notes :*
- i) Write your answer in the space given below*
 - ii) Check your answer with the one given as its explanation below.*

Explanation

*The process of photosynthesis detailed here makes one wonder about the nature's plan of action. Really this wonder is named in the form of a value, **Appreciation of Nature***

Minor Concept 4 - Photosynthesis : The basis of Life

The last paragraph of this minor concept provides you an important value.

Learning Activity 4

Read this minor concept, and identify the value contained in it.

- Notes :
- i) Write your answer in the space given below*
 - ii) Check your answer with the one given as its explanation below.*

Explanation

Plants are the basic component of life. Without plants no life is possible. But man is destroying this earth day by day. The consequences are very many. The shortage of rainfall, earthquake are some examples only.

*Now is the time for rethinking. Protection of nature and natural resources and thus keeping the earth balanced is the duty and responsibility of man. Hence the value here is **Responsibility**.*

Minor Concept 5 - Summary and Further Activities

Summary and further activities remind you of all the values described in the chapter.

Learning Activity 5

No. 4 of the further activities provides you an important message. Can you identify the same?.

- Notes:
- i) Write your answer in the space given below*
 - ii) Check your answer with the one given as its explanation below.*

Explanation

*The service of the plants are very many. This chapter, reminds the service of plants to the ecosysetem. And, therefore, we are indebted to plants for our whole life. The value we are to be imbibed from this activity is **Gratitude**. It is to be practiced in our life also.*

The Major Value Identified

Food is necessary to allay hunger and it becomes useful to provide nutrients for growth to provide energy for body activities, to repair body tissues, and to maintain resistance. The chapter starts with this sentence. All these processes are included in the process of nutrition. This process starts from plants because they prepare food for all organisms. This chapter describes the role of plants to maintain life on earth, by stressing the value servicemindedness of the givers and need to be indebted to them by the users. So the major values of the chapter are *Servicemindedness* and *Gratitude*.

Adolescence is the period of storm and stress. Adolescents are with full of energy. A teacher can channelize this energy to the productive fields. The second chapter highlights the value servicemindedness. Once again it is proved that text books contain all essential values necessary for students of the specific age level. Through Biology, a teacher can inculcate values among adolescents. We know that adolescents are more interested in group activities. A teacher can guide them to selfless activities thus inculcating the value *Servicemindedness*. At the same time, paying *Gratitude* to those who give service to us also is a very important value to be practiced in our life.

SUBSECTION 4. CHAPTER 3. NUTRITION IN ANIMALS

Minor Concept 1- Nutrition

This minor concept includes, nutrition in Amoeba, in Hydra, and in Earthworm.

Learning Activity 1

Taken all the above together find out values included in them

- Notes:
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below.*

Explanation

*The process of nutrition in these animals stress the structures adapted for the purpose. This makes us wonder about the nature's preplanning for the existence of each form of life. The ability to feel this wonder is known as **Appreciation of Nature.***

Minor Concept 2 - Nutrition in Man and the path of food

This minor concept describes the process of digestion in man.

Learning Activity 2

Read this minor concept and try to find out values included in it.

- Notes:*
- i) Write your answer in the space given below.*
 - ii) Check your answer with the one given as its explanation below.*

Explanation

*The process of digestion, and the organs undertaking this function are described here. While going through these details we will be wondering. The feeling that "Are all these happening in our body!" is contributing to the value **Appreciation of Nature**. From the same information the other value projected out is **Cleanliness**. Because cleanliness is the key to keep all these organs/ processes in proper way.*

Minor Concept 3 - Liver and its diseases.

Read this minor concept and find out values included in it.

Learning Activity 3

- Notes :
- i) Write your answer in the space given below.
 - ii) Check your answer with the one given as its explanation below.

Explanation

The information on Liver and its diseases gives the importance of health in our life. For the proper health of the body self discipline and good manners are inevitable. Healthy mind exists only in a healthy body. For this unwanted habits like smoking, drinking and using other intoxicants are to be avoided. Not only oneself should practice this but one should try to transfer these ideas to others also. Hence the values included here are, Self Discipline, Good manners, and Social Service.

Minor Concept 4 - Nutrients in the Food**Learning Activity 4**

Can you find out any value in this minor concept.

- Notes :
- i) Write your answer in the space given below.
 - ii) Check your answer with the one given as its explanation below.

Explanation

The explanation is the same as that given for the minor concept 1.

Minor Concept 5 - Nutritional deficiencies lead to diseases

Learning Activity 5

This minor concept contains an important value. Can you identify the value?

- Notes :
- i) Write your answer in the space given below
 - ii) Check your answer with the one given as its explanation below.

Explanation

*In our society we can see two extremes; on one side there is acute poverty on the other side the posh life. If the haves are willing to share their surplus resources with the poor, the conditions of the latter could have been made better. So it is appreciable if we extend our concern to others also. Hence the value is **Concern for Others**.*

Minor Concept 6 - Over Nutrition

Read this minor concept and find out the value hidden.

Learning Activity 6

The last sentence of the concept includes a value. Identify the value.

- Notes:
- i) *Write your answer in the space given below.*
 - ii) *Check your answer with the one given as its explanation below.*

Explanation

*Healthy mind exists in a healthy body. Good habits are to be practiced in our life. It begins from very early in life. Such practice will prevent diseases. So the value is **Self-Discipline**.*

Minor Concept 7 - Summary and further activities

Learning Activity 7

Summary of the chapter, especially point No. 8 upholds a value.

Can you identify the value.

Notes

i) : Write your answer in the space given below

ii) Check your answer with the one given as its explanation below.

Explanation

*In this chapter nutrition and digestion of food is described in detail. From this description we got a picture of our body organs and their functions. Along with this there is a warning that the poisoning of such organs may lead to their destruction. This causes an imbalance in function which leads to acute diseases. For their proper functioning proper health is to be maintained. Hence the practice of **Good Manners** is the value here. We should avoid taking in of any poisonous substances.*

Major Value Identified

The noted values, cleanliness, good manners etc. lead to the major value of the chapter which is **Self-Discipline**.

Adolescence is the period of maximum vegetative growth of the body. That is why the intake of food also is to be increased. Food habits have a very prominent role in one's personality. Better dietary habits are to be practiced along with their routine of intake. A teacher through this chapter in Biology can develop the value of discipline in all aspects of life along with food habits. This chapter thus upholds **Self Discipline** as the central value in it, which has as a prominent role throughout our life.

SUBSECTION 5. CHAPTER 4. RESPIRATION IN ORGANISMS**Minor Concept 1 - Modes of Respiration in Organisms**

This minor concept includes the subheadings, viz., respiration in unicellular & multicellular organisms, insects, fishes, frogs and in man. All these aspects provide you an important value.

Learning Activity 1

Can you identify the value hidden in this minor concept.

Notes

- i) Write your answer in the space given below*
- ii) Check your answer with the one given as its explanation below.*

Explanation

*Here the process of Respiration in different organisms and the structures adapted for this in them are well explained. This convinces us that the whole thing is really a wonderful mechanism. Hence the value felt here is **Appreciation of Nature.***

Minor Concept 2 - Chemistry of respiration

This minor concept describes the release of energy for life activities from the food we take in.

Learning Activity 2

Do you feel any value here?

- Notes:*
- i) Write your answer in the space given below.*
 - ii) Check your answer with the one given as its explanation below.*

Explanation

*Energy is produced by the breakdown of food. It implies the necessity of food for life. All living beings require food. A helping hand extended towards the poor and the other life forms is a highly appreciable behaviour. Hence the value is **Concern for Others**.*

Minor Concept 3 - Tidal volume and vital capacity

Learning Activity 3

This minor concept includes an experiment about respiration.

Can you identify the value included in it?

- Notes:*
- i) Write your answer in the space given below.*
 - ii) Check your answer with the one given as its explanation below.*

Explanation

As explained in chapter 1, Learning Activity 9, doing an experiment

Hard work and Accuracy are the inevitable values.

Minor Concept 4 - Respiration without oxygen

Learning Activity 4

Read the minor concept and find out values included in it.

- Notes:*
- i) Write your answer in the space given below.*
 - ii) Check your answer with the one given as its explanation below.*

Explanation

*The process of respiration involves the role of different respiratory gases and different respiratory organs of our body. Now a days we can see that the earth is becoming polluted day by day by the deadly activities of man. If the air is becoming polluted, it will cause dangerous effects to the mankind and the other animals too. This also adversely affects our respiratory organs and spreading of dangerous diseases. It is the duty and responsibility of each and every individual to protect the earth from pollution. We should pay concern to the health of others along with ours. Likewise we have to keep good habits for good health. Along with all these, we have to participate in the activities of awareness programmes for good health. Hence the values here are **Responsibility, Servicemindedness, Concern for Others and Social Service.***

Minor Concept 5 - Respiration in plants

Respiration in plants provides the importance of respiratory gases. Many values are there in this concept.

Learning Activity 5

Can you identify values included in this minor concept.

- Notes:
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below*

Explanation

*Life and Life processes depend upon the availability and intake of respiratory gases. Life depends upon the purity of gases along with the perfectness of respiratory organs. Without air we cannot live even for one moment. But many substances like those toxic ones included in cigarettes affect our respiratory system. These substances may give timely pleasure but more of permanent acute diseases. These substances are causing diseases to others also along with smokers. That is, a smoker is causing danger to others also. Life is a boon to us. It is worthy and to be lived by all. Similarly letting them to live is the right of others too. So avoiding the substances which cause harm to our body is necessary. We have to keep robust health till death. Hence the values are, **Life is Worth living, Concern for Others, and Self-Discipline.***

Minor Concept 6

The closing paragraph of the chapter describes the role of plant community in the existence of other components of an ecosystem.

Learning Activity 6

Can you find out any values here?

- Notes:
- i) *Write your answer in the space given below*
 - ii) *Check your answer with the one given as its explanation below.*

Explanation

*The role of plant community in the existence of life on earth is very important. Life without plants is never to be thought of. They provide food for all and along with this they maintain the ratio of O_2 and CO_2 in the atmosphere. This reminds us of their service to the mankind and motivates for practicing servicemindedness in our life. Also it teaches us to keep interrelationship because this is the base of life. If such a feeling is with us we will be serviceminded. Hence the values here are **Interdependence and Servicemindedness**.*

Minor Concept 7 - Summary and further activities***Learning Activity 7***

Summary and further activities gives a message in the form of a value. Can you identify the value.

Notes:

- i) *Write your answer in the space given below*
- ii) *Check your answer with the one given as its explanation below.*

Explanation

*Summary and further activities provide almost all the values cited above in the chapter analysis. Points 6 and 7 of summary uphold the value **Goodmanners**. Points 10 and 11 of further activities provide values **Social Service, concern for Others, and Responsibility**.*

The Major Value Identified

The chapter describes about the process of gas exchange, and respiratory organs. Respiration is the inevitable process in life. Any toxicity of respiratory organs affect health which may lead to death. So we have to keep **Healthy Habits** in our Life, because health in wealth.

In the period of adolescence maximum development is possible. Thus the body weight and height are in maximum and body organs also are developing. The students do not know all the internal changes happening in their body. A Biology teacher can teach them about health and health problems of the body; and thus highlight the value of the avoidance of intoxicants and the practice of healthy habits. He/She can make aware of the diseases due to the intake of intoxicants. Sometimes it is due to the absence of guidance in this period that the children become addicts of intoxicants like cigarette, cocaine like substances, drinking and finally become delinquents.

Next we pass on to chapters of 6, 7, 8 and 9. Here you are provided a very brief analysis of these chapters like the sum up of chapter 1. Take this part as a guideline only. Still, I hope you will analyse these chapters with the same procedure of chapter 1.

**SUBSECTION 6. CHAPTER 5. SKELETAL SYSTEM AND
MUSCULAR SYSTEM**

Major Concept : *Skeletal and Muscular System*

Minor Concepts : *Values Identified*

- | | | | |
|----|--------------------|---|-----------------------------|
| 1 | Introduction | : | Duty and Responsibility |
| 2. | Skeletal System | : | Responsibility, Cooperation |
| 3. | Diseases of Joints | : | Sympathy |
| | | | Servicemindedness |
| | | | Love |
| | | | Tolerance |
| 4. | Muscular System | : | Responsibility |
| | | | Co-operation |

Major Value Identified : **Servicemindedness**

SUBSECTION 7. CHAPTER 6. GENETICS

<i>Major concept</i>	:	<i>Genetics</i>
<i>Minor concepts</i>	:	<i>Values Identified</i>
1. Introduction	:	Appreciation of Nature Brother hood Love
2. Genetics-origin and Laws :	:	Scientific Attitude Hard work Tolerance Honesty Simplicity Patience Sincerity Courageous Conviction
Chromosomes	:	Reliability
Cell division	:	Appreciation of nature
Chromosomal disorders	:	Justice Considerateness
Genetic diseases	:	Sympathy Kindness Servicemindedness Social Service

Genetic Engineering : Justice
Reliability
Courageous Conviction
Honesty
Scientific Attitude
Hard work

Major Value Identified : Hard work

SUBSECTION 8. CHAPTER 7. CONTINUITY OF LIFE

<i>Major Concept</i>	: <i>Continuity of Life</i>
<i>Minor Concept</i>	: <i>Values identified</i>
1. Introduction	: Interrelationship
2. Continuity of Life in plant and animal world	: Scientific Attitude Appreciation of Nature Reliability Servicemindedness Co-operation Hard work Tolerance
3. Reproduction in Man	: Self discipline Love Non-violence Justice Kindness
4. The Foetus	: Responsibility Relationship Kindness Non-violence Concern for Others Healthy habits Tolerance
5. Puberty	: Cleanliness Healthy habits Social Service

6. AIDS : Co-operation
Concern for Others
Responsibility
: Concern for Others
Sympathy
Cleanliness
Healthy habits
Justice
Considerateness

7 Welfare family : Responsibility
Self-discipline
Self control.

**Major Values Identified : Inter relationship
: Good Manners
: Concern for Others**

SUBSECTION 9. CHAPTER 8. BIODIVERSITY AND ITS CONSERVATION

Major Concept : *Biodiversity and its conservation*

Minor Concepts : *Values Identified*

1. Introduction : Appreciation of Nature

2. Taxonomy and classification : Scientific Attitude
Appreciation of Nature
Reliability

3. Biodiversity in India & in Kerala : Appreciation of Nature
Courageous Conviction
Non-violence
Kindness
Responsibility
Duty
Justice

4. Gene Pool : Considerateness

5. Summary : Scientific Attitude
Servicemindedness
Inter relationship.

Major Value Identified : **Sense of Responsibility**

I hope you have mastered the skills to analyse the content to identify the hidden values in it. I further hope you would have also developed the feeling of helping your colleagues also in attaining the same skills. (That is, you have developed the value of Generosity and Servicemindedness!).

If we are able to identify values from the content thus, we have to know how to transact these values to our students also. So let us pass on to Section 2.

**SECTION 2 : TRANSACTION OF THE SELECT VALUES
THROUGH JURISPRUDENTIAL INQUIRY MODEL**

OBJECTIVE : At the end of this section you will be able to transact values to students through JIM.

This section deals with an instructional strategy, which is one of the important Models of Teaching, known as the Jurisprudential Inquiry Model (JIM).

Like section 1, section 2 has nine subsections. The first subsection gives you an **Introduction** first and a detailed orientation to the model JIM. The other eight subsections deal with eight lesson plans prepared through JIM.

SUBSECTION 1. INTRODUCTION

In section 1 you understood the procedure of content analysis to locate values. The next step is knowing to transact these values in your classrooms. Before entering into the model, you please answer the following questions.

1. Do you know any method/model for transacting values?

Yes/No

2. If your answer is 'yes' what is the effect of the method/model? Is it longlasting, or just for the particular occasion?

3. If your answer is 'No', Is there any need for special strategies for value development upto a sustainable level?

Yes/No

If your answer is 'Yes' to the last question you can directly enter to the following part of this material. If your answer is 'No' you also can enter this part and experience it, thus understand the use of this strategy.

About the Model

The Jurisprudential Inquiry Model of Teaching (JIM) is developed by Donald Oliver and James P. Shaver (1966, 1971). This model belongs to the Social Interaction Family of Models of Teaching. This is developed for teaching young citizens to reflect on social issues. Its objective is to help students to learn to think systematically about contemporary issues. It is especially useful in helping people to rethink their position on important legal, ethical and social questions. This approach helps students participate forcefully in the redefinition of social values.

JIM is based on a conception of society in which people differ in their views and priorities and in which social values legitimately conflict with one another. Resolving complex and controversial issues requires citizens who can talk to one another and successfully negotiate their differences. The effective strategy for this should train people in reflecting others' opinions and respond to them by own thinking.

The dictionary meaning of Jurisprudence is science or philosophy of Law, or the knowledge or skill to deal with issues in legal fashion. Oliver and Shaver who created this method meant Jury process of resolving complex controversial issues within the context of productive social order. In other words, **it is a process of inquiry for solving controversial issues as is held by a Supreme Court Judge. The judge first of all listens the case which is**

followed by evidences, then analyses the legal position taken by both the sides weigh these positions and evidences, assesses the meaning and position of law, and finally makes the best possible decision.

When a similar role is played by the teacher along with the students in the classroom to analyse the social problem or public policy issues, then it becomes jurisprudential way of teaching. This model helps the students in understanding the complexity of the problems so that they can be able to make their position reflect that complexity. The main purpose of this method is to help students learn how to formulate defensible stances on public policy issues. In this way the main goal of the model for students is to develop public policy stances and dialogue skill by using three types of competence, that is

- i) an understanding of the values
- ii) mastery of the intellectual skills of legal reasoning and
- iii) knowledge of contemporary public issues.

During the process of dialogue, students take a position and the teacher challenges the position with questions. The teachers' questions are designed to push students' thinking about their stance and to help them learn. The teacher orients the class to the case and students usually become *emotionally involved* in the analysis, making the discussion *intense and personal*. With

more practice, it is hoped that their positions will become more complex and well formulated.

Check Your Progress 1

What is the main goal of the Model JIM, for students?

Notes: i) Write your answer in the space given below.

ii) Check your answer with the model answer given at the end of this subsection

The model has to be looked into from the point of view of its assumptions and characteristics.

- a) Assumptions** - The basic assumptions underlying the jurisprudential inquiry model are,
- i)** In society, people differ in their views and priorities in which social values legitimately conflict with one another.
 - ii)** Controversial issues are not simple and there is no one right solution for them.
 - iii)** The differences in values can be negotiated through *free and open debate* by making it the process of rational consent.

b) Characteristics - The specific features of Jurisprudential Inquiry Model are,

i) Public Policy Issue – A public policy issue is a question/case involving choice or a decision for action by students. These policy issues can be phrased either as general question or as choices for personal action. On the basis of these questions conflicting values have to be identified.

ii) Conflicting values – The situation is taken up in terms of conflicting social values. The stand on these values are taken through the process of dialogue. This dialogue implies *commitment to reason, reflection* and the right of all parties to express themselves before being bound by a decision.

iii) Socratic dialogue – The heart of this model is socratic style of dialogue. The teacher persuades the students to take a position on an issue. Then the teacher challenges the taken position with questions. These questions are designed to push *students' thinking* about the stand taken by him.

Check Your Progress 2

What are the characteristics of the Jurisprudential Inquiry Model?

Notes i) Write your answer in the space given below

ii) Check your answer with the model answer given at the end of this subsection.

Now let us see the key concepts of the model.

The Model of Teaching

There are four concepts to describe the operation of any Model of Teaching. These are,

1. Syntax
2. Social system
3. Support system and
4. Principles of reaction.

The *syntax* describes the step by step phases in the action of the model. *Social system* describes the role of students and teachers and their relationship while they are going through these phases. *Principles of reaction* explain the procedure by which teacher deals with the reactions of the students. *Support system* deals with the use of other teaching aids, human skills and technical facilities required for the instruction of the model. Along with these details, *application* and *effects* of the model also have to be thought about.

1. Syntax

The syntax of this model, namely, JIM includes six phases. Let us see these phases.

Phase One : Orientation to the Case

As explained above the first activity to start the JIM will be the 'Teacher introducing a case'.

Learning Activity 1

Suggest some materials that can be used as a case?

Note: Space is provided below for your answer .

Let us see an example for the case that can be used for a JIM class.

"Manhandling is the treatment for the Patient"

Thiruvananthapuram: A patient with jaundice was admitted to Thiruvananthapuram Medical College and his parents were cruelly beaten up by medical students and house surgeons. Dextrose drip is to be given continuously to jaundice patients. While all other jaundice patients were supplied with the medicine from the hospital medical

store, the doctor said to the said patient, Mr. Binoy to get it from the market. The patient got annoyed of this injustice and it is reported that he manhandled the doctor. Medical students became furious on this development, they came in group, cruelly beaten up the patient, his parents and also peon and the security staff. The matter was reported to the authorities and a professor and nine medical students were arrested. House surgeons and other medical students are striking on the incident.

You have seen the material that is used as the case. This was a paper article of an incident happened.

The case materials can be

- a) A story or historical narrative*
- b) Filmed incident involving values*
- c) An actual incident of a student or school or community*
- d) Imaginative items involving value controversy*

The second activity that comes in the Phase one of JIM is 'Teacher reviewing facts'. For this the teacher analyses the case in detail and identify the facts present in the case as who did, what and why.

Learning Activity 2

Now you may try to identify all possible facts present in the above case.

Note : Space is provided below for your answer

1. -----
2. -----
3. -----
4. -----
5. -----
6. -----

Let us see which are the facts present in the above case.

1. *All jaundice patients were supplied with the medicine from the hospital medical store.*
2. *Doctor asked Mr. Binoy to bring the medicine from the market.*
3. *The annoyed patient over this injustice, beaten the doctor.*
4. *Because of this, Medical students came in group beaten the patient and his parents, peon and security staff.*
5. *In this issue a professor and nine medical students were asserted.*
6. *House surgeons and other medical students call for a strike.*

Phase one ends with identifying facts in this way and noting them down.

Phase Two: Identifying the Issues

By examining the above facts you can see that the facts numbers 1,2,3 and 4 are to be more seriously thought of in view of the public interest.

Learning Activity 3

Identify the reasons why the facts 1,2,3 and 4 are becoming issues of public interest?

Note : Space is provided below for your answer.

The facts 1 and 2 are the clarifications for the doctor's decision. A doctor is aware of the consideration to be extended to patients. The doctor knows how to deal with a situation according to its seriousness.

The facts 3 and 4 clarifies the patient's side. A patient expects every help from the doctor without any partiality, if it is not given he becomes annoyed. The action taken by the patient leads to more complications.

So by making the students analyse the case thus, the teacher creates a dilemma in students. This makes the students to think which side is more correct.

These facts, therefore can be put in the form of a public issue for discussion as;

Right of Doctor Vs Right of Patient.

This is how in phase two issues for debate are identified.

Phase Three. Taking Positions

This phase is for finding out student's views on the above policy issue.

Learning Activity 4

Identify the positions that can be taken by your students in the above issue.

Note: Space is provided below for your answer.

As the issue here is on the Right of Doctor or Patient at least two positions are possible here,

- 1. Comparing to a patient, a doctor should stand one step ahead in all respects. Hence a doctor should realize and consider all patients equally irrespective of their state and status. Thus one group can opine that the patient's right and freedom are to be given importance. (This is the position for the Right of Patient).*

2. *One becomes a doctor after hardwork and effort. The doctor knows how to tackle a situation of illness. Hence patients should respect the doctors and allow them to exercise their freedom; another group opines (This is the position for the 'Right of Doctor').*

Phase three ends thus with the positions taken by two groups of students here.

Phase Four : Exploring the Stance(s)

Pattern of Argumentation

This phase allows the two groups of students to argue on their positions with each other directly.

An illustration follows

The arguments of two groups are arranged in two columns as Group A and Group B. Here the arguments of Group A is favouring Patients and Group B favouring Doctors. This illustration is only imaginary. The arguments of students in Phase four might have differences as per the students.

Group A	Group B
A man is said to be ill when he is either physically or mentally weak and tired. It is doubtful that whether	All patients are not equal. As each and everyone has got different diseases and its nature also varies, it

<p>the doctors care and consider all patients.</p>	<p>is not possible for doctors to consider all patients equally.</p>
<p>The state of being ill is equal to all Hence all patients are equal, doctors should treat them as equals and his time is not much precious than the life of a patient (Consistency).</p>	<p>Patients are of various types and a doctor only is able to diagnose his state. Can the care given to one patient admitted in 'ICU' be one and the same to that is given to another patient with general weakness admitted in general ward? Hence the consideration depends upon the nature of disease and condition of the patient. A doctor is also a social being and he is one among the common people before and after his duty hours (Consistency).</p>
<p>Health Science is not like any other field. Each and every life is invaluable and a doctor should work around the clock. Health of a person is vulnerable to mental imbalance than physical disorders. A doctor should be aware of this fact and he should adhere to the professional ethics of service to humanity.</p>	<p>There is a fixed time table of work for a labourer on daily wages. As there is such a particular timing for every working hand, so is for a doctor as a professional hand. Why do you bind them up exclusively with an unjustifiable logic? A patient who question this right of a doctor indeed is to be punished, therefore, he has no right to punish the doctor.</p>
<p>A doctor who comes in the respectable class of the society is to be a model himself for all, and especially to a patient. Doctor's attitude should not animate the patient and neither be biased. It is a patient's right to get the best medical care. A patient can very much punish the doctor who negates and denies all these.</p>	<p>Do you think that only the patient has got rights? Has he got any right to beat up the doctor? In the present situation, by beating up a doctor, the patient has challenged the doctor's rights, hasn't he? The steadfastness of the patient to get the best medical care from the efficient doctor is to be discarded as the doctor is unable to render service to humanity in all its meaning and spirit with all other limitations.</p>
<p>There are many doctors who wind up their work on time without bothering the long queue of patients waiting</p>	<p>A doctor has his own personal needs and comforts. Though he can adjust a little, he cannot devote his whole</p>

<p>outside. Do they practice their professional ethics then? He should serve humanity at least to a certain extent.</p>	<p>day for patients. A doctor who leaves hospital after a tiring duty may be attending patients at his home also.</p>
<p>Almost all doctors like to do private practice at home. They give better treatment by extracting handsome amount as fees. They value money than anything else.</p>	<p>Money is a must for living. Good service is to be paid also as you are ready to pay for a precious thing in the market. As the patient comes to the residence of the doctor to get his personal care, the same is to be paid reasonably.</p>

Phase four thus goes on with exploring the positions taken by the students. Both groups are rigidly standing on their views. Now it is the duty of the teacher to interfere and clarify their positions so that their positions can be changed if necessary.

Check Your Progress 3

Identify the need for Phase four in JIM.

Notes : i) Write your answer in the space given below

ii) Check your answer with the model answer given at the end of this subsection

Phase Five : Refining and Qualifying the Positions

In this phase the teacher interferes in the dialogue of both the groups. This phase is more important from the view of the role of the teacher, as she checks the position of the two groups by asking very *simple, personal situations to prove their moral sense*.

Let us examine what will occur in the above case.

Teacher asks to Group A

Teacher	Group A
Do you say that a doctor is to sacrifice for the patient	Certainly
Is he to consider all patients equally?	Yes, he should
If so, is it proper to give the same medical care to both a patient with general weakness and a patient of serious cardiac trouble?	Both are patients
Also is it right to give the same medicine for both?	No
Likewise, are not we to give due importance to a serious disease? Otherwise what will happen to patient who wants immediate care and attention is deserted by a doctor who gives his time to attend a patient with cold and cough?	Certainly the patient will die for want of treatment.
If you are <i>in the position of the doctor</i> , in such a situation what will you do?	We will attend first the serious case and more attention is given to him. (shifting)
What will you do in the case of a patient with general weakness?	We will convince him by saying the priority in attention is to the seriousness of the disease.

Do you have any suggestions?

A doctor knows very well that what is to be done first and his duty is to follow the true Professional ethics.
(consistency)

How do you respond to my statement that a doctor's attitude depends upon and being regulated by the behaviour of a patient?

Indeed. The relation of a doctor and a patient is like that of a teacher and a pupil. Good behaviour of a patient creates a good doctor.

Likewise, the teacher interferes in the opinion of Group B.

Teacher

Group B

What do you opine about the doctor's action in the incident in question?

Doctors action is truly justifiable. Since the patient manhandled the doctor, he was provoked and compelled to retort.

Then, is there any difference between doctor and patient? Who is to be excused here? Whether the healthy doctor or the weak patient?

Both should have patience.
(Shifting)

Suppose, you might have come across the report in news papers that a man who was on the road with serious injuries in a motor accident was left to die with no one to hospitalise him. Have you got anything to say in this regard?

Had anybody extended a helping hand to the injured man, his life could have been saved.

Here also a doctor's help is inevitable. Is it not?

Yes

Suppose, you could bring the injured man to a doctor. But the doctor is very particular about the duty timings. In that state, what will happen to the injured man? What will happen if the doctor is reluctant?

The doctor can save that precious life, if he put himself into service.

Can you explain the role of a doctor?

He must be always ready to serve the patients. Because this duty is bound to him. He will show patience in every situations, because the patients are always worried about their diseases (Consistency).

Check Your Progress 4

Identify the role of the teacher in Phase five of JIM?

Notes: i) Write your answer in the space given below.

ii) Check your answer with the model answer given at the end of this subsection.

Phase Six : Testing Factual Assumptions Behind Qualified Positions.

Determine the predicted consequences and examine the factual validity.

With the interference of teacher each group comes to a conclusion about their stance/position on the issue. Phase six actually tests the facts of the students' stances. These are the facts of the issue drawn out from the discussion.

Learning Activity 5

Identify the factual assumptions behind the two groups after phase five.

Notes : Space is provided below for your answer.

Explanation

Group A argues for patients and they justify only the needs of patients first. But with the interference of teacher there occurs a shifting from the former position and they understand the situation of the doctor also.

The arguments of Group B were truly justifiable for the doctor's stances formerly. During refinement the students shifted with the personalising question of the teacher.

The new positions of both the groups lead to the following factual assumptions.

- 1. In the field of health, doctors should serve considering the needs of patients.*
- 2. Doctors are liable to save human lives by giving due consideration to all patients who approach them.*
- 3. Like the patient the doctor is also a human being. He has his own personal needs and problems.*

4. *Patient has to understand the doctor when he gives particular instructions.*

The second activity under Phase six is Determine the predicted consequences and examine the factual validity.

The dilemma situation presented here first asks whether Right of the Doctor or Right of the patient is to be given more weightage? Though the issue is on the Right of both there is one particular value hidden in the issue.

Learning Activity 6

Can you identify the particular value hidden in this case?

Notes: Space is provided below for your answer.

Explanation

*Here in this issue both doctor and patient were not in concern of the others in the beginning. Hence such consequences occurred. If both were extending concern towards the other such consequences said in the issue would not have occurred. Hence the value hidden in this case is **Concern for Others**.*

The predicted consequences highlight that both the groups are likely to extend this value in future situations. The facts identified in the phase six of this issue has made it clear that the doctors should

*take into account of the patient's need and that the patients should understand the position of the doctor also. Thus the closing of this JIM class should correctly point out the need of practicing the value **Concern for Others** in our day-to-day life.*

*By dealing with this particular case to this extent we can predict that the consequences of the class will be helping all students to practice this value in future situations. This JIM class has providing them a training to look at both sides while dealing with a problem that necessitates '**Concern for Others**'.*

Check your Progress 5

Identify the most important challenges to be faced by the teachers in using JIM for value development.

Notes: i) Write your answer in the space given below.

ii) Check your answer with the model answer given at the end of this subsection

2. Social System

This describes the role of teacher and students in dealing with a case in jurisprudential approach. At first, the teacher initiates the phases and moving

from phase to phase the role changes from high to low depending upon the students' abilities to complete the task. After experience with the model the students should be able to carry out the process unassisted thereby gaining maximum control of the process.

3. Principles of Reaction

The teacher reacts to students' comments by questioning relevance, consistency, specificity or generality and definitional clarity. The teacher stretches the thought of one group or one stance to the maximum and concludes in a strongest possible stance and then enters to the second group for the same process. That means a teacher must be prepared to play the Socratic role that is, probing and challenging the value claims of students. This leads to the clarification and development of the most acceptable value. Through this process merits of the case is highlighted as the outcome.

4. Support System

The major material supports for this model are source documents that focus on a problem situation. The materials may be in the form of accounts of real situations or hypothetical ones. These materials should be clear and include all pertinent facts of the situation.

5. Application

It is highly useful to teachers since it requires a fair amount of teacher directed activity and direct instruction. Gradually, as students become competent the phases of the model should blend into student directed discussion.

The model is well or closely fitted to older students and must be *modified considerably* for use at the junior high school and middle school levels even with the most able students. The face to face dialogue that surrounds the argumentation of social issues are threatening to less verbal students.

Sometimes all students will not participate in an issue at first. But through practice, the students form groups with others having similar stances which leads to the whole participation of the class; thus ensures the total involvement of the class through this approach.

6. Effects of the Model

Direct effects – 1) Mastery of the framework for analysing issues which includes,

1. Skill in identifying policy questions
2. Use of analogies to explore issues.
3. Resolving of cases or problems.

- 2) Ability to carry on forceful dialogue with others.
- 3) Values of society embracing many cultural traditions and a respect for the point of view of others.
- 4) It proves the role of emotional responses of students along with reasoning in value problems.

Indirect effects

- 1) Capacity for social involvement and arouses the desire for social action.

Check your progress 6

What is the advantage of the Model JIM, to teachers?

Notes: i) Write your answer in the space given below.

ii) Check your answer with the model answer given at the end of this subsection.

Hope you have enjoyed learning this. Wish you all success to be a teacher to practice JIM in your classroom.

Check your progress – Model Answers

1. *JIM provides a situation to students in the classroom to deal with issues of society. An issue regarding a value is presented in the class, thus an understanding of such values happens in the class. Each student has his/her own views about an issue which may/may not have reasons. Through dialogue it may be expressed, thus dialogue skill is possible. By the process of thinking, a student can express his/her opinion based upon reasons and is possible to weigh the reasons of others on the issue. Thus thinking process is happening. As an application, through JIM a student can identify issues of society which hides values and organize a debate/discussion in future if it is in need.*
2. *The important characteristics of the model are,*
 - (1) *JIM provides a chance to conduct a debate on general question of social issues in a class. The students have different opinions about this issue; that is some are positive to the issue while some are negative to the issue. The issue is generally termed as public policy issue.*
 - (2) *If an issue is presented in a class, the stances/positions taken up by students are based upon their reasons. If two or more stances are there on a public issue it is known as conflicting values.*
 - (3) *Two or more groups are formed on an issue and they take part in dialogue based upon their differences. Within this process the teacher also participate and puts-forth questions with each group. This leads to the thinking of students about their positions and may occur refinement if it is needed. This is termed as Socratic dialogue.*
3. *Phase Four is necessary to identify the present level of value-based thinking of the students and the reasons for their stances. This helps*

the teacher to direct phase five in such a way that the present level of value can be made better.

4. *Phase Five reflects the role of the teacher in a dilemma case. As the students are immature and they are not in a position to say which is right and which is wrong, a teacher can help them to make a decision in a dilemma. As per the clarifications in the phase four teacher asks personal questions to know the extent of their value judgements in similar occasions.*

Teacher's questions direct the students to think emotionally well and to substitute himself in the place of others and thus the correct accepted actions are to be developed by thinking.

In this phase empathizing, organizing and convincing all happens in the light of clarifications that lead to their refinement. Teacher must be thorough in asking questions to check the positions of his students while dealing with a problem case in the class.

5. 1) *Choosing the most appropriate case material*

The appropriateness of the case means, the case reflects the current issue of the society. It should be also debatable. The cases should be simple and clear to the students and accepts if it is life oriented.

- 2) *Skills in questioning in Phase Five by using appropriate analogies, personal questions etc, so as to make students emotionally involved in the issue. Only this personal involvement will change their negative attitude to the issue and help to come to a desirable stance.*

6. *JIM is a value – clarification and value inculcation strategy by its own nature. Through its application a teacher can master a Value inculcation strategy. Teacher can understand the various opinions of students about an*

issue, and this instigates him to take up its correct remedial measures. JIM is a powerful strategy for this. Through this model teacher can inculcate a general awareness about social problems/issues among students. In short, whenever there is an issue for students and they are in a dilemma as to which side is right and which is wrong, the approach of JIM will help them to solve it. So it is the duty of teachers to train students in using the special way of thinking proposed in JIM.

ASSIGNMENT QUESTION

1. Find out another case material for the same value *Concern for Others* and prepare a lesson plan through JIM with necessary arguments in Phases Four and Five.

Note: No space is given for writing your answer. So you would prepare your answer in separate sheets.

Sources

1. **Joyce, B., & Weil, M. (1992)** *Models of teaching* (4th ed.). New Delhi: Prentice – Hall .
2. **Singh, V.P. (2004).** Value inculcation among younger generation: A suggested model. *University News*, 42(5), 11-15.

Now let us pass on to the following subsections. Subsection 2 onwards this module provides you eight model lesson plans prepared through JIM for training procedure. All these eight lesson plans were already prepared and practiced in the classrooms and their effects well established. You can also experience the same through its application in your classrooms. There is one thing to remember; the phase four of the lesson plans might have changes in accordance with the view of your students.

SUB SECTION 2

LESSON PLAN FOR THE VALUE 'LIFE IS WORTH LIVING'

Phase One: Orientation to the Case

'Three students committed suicide as they failed in exams'.

Facts 1. Three students committed suicide as they failed in exams.

Phase Two: Identifying the issues

Is life to be ended by self?

or

Is life to end by living?

Phase Three: Taking Positions

1. It is proper to end life when it seems to be futile to live
2. It is improper to put an end to one's own life

Phase Four: Exploring the Stance(s)**Patterns of Argumentation****Group A**

Our family may have much expectation about us. There is no meaning in further living, if we cannot rise up to their expectations

There is the society to confront after our family. One cannot face the society after failure in exams. Hence, they decided to end life.

Therefore, family and society are equally responsible for his suicide. It gives much importance to exams and hence defeat in exams is a great issue.

Group B

There is only one life for us on this earth. Life is laden with sufferings. We should attempt to overcome all hurdles in life.

Is success in SSLC/+2 exams the only aim of education process? The aim of education is to acquire knowledge and make use of it in life. It will be much easier to achieve success in exams and prosper in life by treading the track of life with such a view.

Parents have expectations on their children. Their expectations should match the capabilities of their children. Therefore, parents, other family members, or the society is responsible for their committing suicide. And all issues end with the death of that person.

Any one can reappear in exams and achieve success. But what about life?

Phase Five: Refining and Qualifying Positions

Teacher

What is your goal? For example, is it your goal to pass Xth Standard?

Suppose, you failed in the examination. Then what will you do?

Why is it so? You can re-appear in exams.

You cannot bear losing one year in your life. If so, how much you and others lose when you end your life by yourself.

Opportunities are ample in life. Is it right to be desperate with the loss of one of the opportunities. Try to grab other opportunities. A great number of people have conquered heights from initial falls and failures. Handicapped people, Sportsmen --- etc are a few who made use of such opportunities.

Group A

Our goal is to rise up to the expectations of our parents and have a better future. Hence, success in examinations matters much.

Will commit suicide.

It is a shame to face all after a failure in exams. Moreover, we lose a year if we reappear later. It is better to avoid both.

Yes. A fall or failure need not be repeated
(Shifting)

Can't you proceed further with confidence by finding out better ways and methods to achieve success in exams?

Who will help us in such an effort?

Man is a social being with many contacts in society. Contacts like family friends, teachers, colleagues etc. You will be able to solve your problems in life by sharing them with others.

That's right .
(*Shifting continues*)

For example Rajani could not pay the fees for higher education and she committed suicide. She had approached only one bank for education loan. She need not have committed suicide, if she had shared her problems with friends, teachers or sponsors. Do you agree with it?

If you have some disease, will you let anybody know about this?

Is it good to consult a doctor or make it known to the society?

So, sudden thoughts lead us to suicide. Suicide of farmers is an example for it. Such a mass suicide would not have occurred, if the farmers had shared the problems they faced in agriculture and sorted them out together.

Problems are to be solved and will be solved. But what about those people who committed suicide?

Teacher

Group B

What will you do when you have to confront difficulties and hurdles in life?

Try different ways to solve it.

Do you think that suicide solves all problems?	No, it is an escape from problems without facing them boldly.
Why is it so?	Problems are to be solved. We are not to run away without facing them.
How?	There are chances to re-appear in exams. Our attempts should be in that way.
Is it shameful to fail in exams?	Yes. But is only our fault. We are to take up the responsibility for such defeats and try again to succeed. It is not necessary to fail again if we failed once. Those who teased us will congratulate us when we achieve success. Hence efforts are to be made to come through the exams with flying colours.
Would you share your problems with others?	Indeed.
Likewise would you have patience to listen to others?	Yes.
How would you help others?	We will take them to the right people who are able to solve the issues (<i>For example, teachers</i>).
Do you feel death is the only solution to all problems?	No. We cannot regain life, if we lost it once. (<i>Consistency confirmed</i>).

Phase Six: Testing Factual Assumptions Behind Qualified Positions

(The new positions of both the groups lead to the following factual assumptions)

1. It is not proper to escape from life without living it fully.
2. Our attempts should be to achieve success in exams.

3. Problems should be shared with the right people who are capable of solving them.
4. Death is not the final solution to all problems.

Facts

We have certain responsibilities towards our home and the society. Life is full of difficulties and death will never overcome them. Sudden thoughts lead one to think of ending one's own life. Problems should be solved practically by confronting them, thinking reasonably and sharing them with others. It is not proper to consider death as the final solution for all problems and never think it will serve good to others. Instead, life is to live in its fullest sense by serving oneself and others as well. Life provides us with a chance to serve others; hence it is precious and is to be lived meaningfully.

SUB SECTION 3

LESSON PLAN FOR THE VALUE 'CONCERN FOR OTHERS'

Phase One: Orientation to the Case

"AIDS made the kids orphans and they are waiting for kindness of society"

Article dated
Feb. 25, 2004.

Facts

1. AIDS is a deadly disease to today's world.
2. Society extends a neglecting approach to AIDS patients.
3. AIDS patient and his family are alienated in the society.
4. Wards of AIDS patients are prevented from entering into schools on one pretext or the other.
5. AIDS which is infected through free life-style without any morals not only destructs him but his family also.
6. Humanitarians and social/ charitable institutions may come forward to take care of the children of AIDS patients by giving basic amenities and education.

Phase Two: Identifying the Issues

Wards of AIDS patients are being prevented from entering into school.

Wards of AIDS patients should be permitted to prosecute studies.

Vs

Wards of AIDS patients should not be permitted to do so.

Phase Three: Taking Positions

1. AIDS will not spread to others through the wards of AIDS patients if they attend schools. Hence these wards should be permitted.

2. AIDS is a communicable disease and it will spread through their wards, if they attend school.

Phase Four: Exploring the Stance(s)

Patterns of Argumentation

Group A

Wards of AIDS patients should be permitted to attend school.

Education is a fundamental Right. It should not be denied.

Children of parents infected with HIV need not have AIDS.

Innocent children of parents who died of AIDS should not be punished for no fault of them.

Group B

AIDS is a deadly disease.

AIDS destroys the immunity of the human body and death is imminent.

AIDS patients and their family will be alienated by the society.

No other parents will be ready to send their children to sit and study with wards of AIDS patients.

Students will keep away from wards of AIDS patients because of fear.

They should opt for special education.

Phase Five: Refining and Qualifying Positions

Teacher

Will you permit the wards of AIDS patients for schooling, if they got AIDS from their parents?

What is your opinion about imparting special education to those wards?

Group A

AIDS will not spread through air, water, food, touch etc. Hence there is nothing wrong in permitting them for schooling.

Special education will again keep them away from society. Since they would like to sit and play with other children, keeping them away from the society is isolation of these wards. Education is a right; and to deny it is unconstitutional. Hence, they should be given

opportunity to sit and study with other children in the school (*consistency*).

Group B interferes

AIDS is a dreadful disease. Parents will never send their children in which the wards of AIDS patients are studying because AIDS is an infectious disease.

Will it spread to children if they sit, play, eat, or study with the wards of AIDS patients?

No.

If so, is there any logic in the apprehension of the parents of other children?

Unable to explain.

Can you explain the term special education as proposed by you?

Special education means arrangements for their education not in the company of other children but separately.

Will it not alienate them more from the society? Don't they wish to sit and study with other children? How do you justify this separation for no fault of them?

No response
(*Shifting starts*)

Suppose if you are isolated like this for none of your fault, what will be your attitude?

We will hate them. Punishment is to be given only to the guilty.

Why do you alienate them, if AIDS will never spread by their schooling in the company of other children?

No need to alienate them. They should not be denied the chances to sit and study with other children, if they desire so. (*Shifting confirmed*).

Phase SIX: Testing Factual Assumptions Behind Qualified Positions

1. Wards of AIDS patients are to be permitted into schools.
2. Do not punish those who are not guilty.

Facts

Though AIDS is a deadly disease there is no need for panic. It will not spread through air, water, food or touch as other diseases do. Eradication of this disease demands a scientific view. Only a collective effort can prevent the AIDS patients and their families from being isolated from the society. What these people require is not disregard by the society but due consideration from it. Only by extending care and consideration they could be brought into the mainstream. Isolation of these patients and their families will lead them to utter poverty and a stage beyond recovery. Individuals and organizations should try their level best to provide these people with whatever they require to lead a normal life, including good education. It is not proper to punish those who are not guilty as long as we are not ready to get punished by others for none of our faults. This 'Concern for Others' should be extended to them so that their misfortune is shared by us.

SUBSECTION 4**LESSON PLAN FOR THE VALUE 'GOOD MANNERS'****Phase one: Orientation to the Case**

"Paramban Najeeb was born in a poor family and was brilliant in his studies. He gave up his studies while he was in the final year of M.B.B.S as he fell in to the trap of narcotics. Hence he has lost his life and his village has lost a doctor".

Facts

1. Najeeb has lost his studies and thereafter his life since he fell into the trap of drugs.
2. The support of a son to a family and valuable services of a doctor to a society have been lost due to drugs.
3. Drugs generate patients

Phase Two: Identifying the Issues

Are drugs/narcotics a hazard to the society?

Phase Three: Taking Positions

1. One group has the opinion that the drugs/narcotics should never be used.
2. The other group opined that anything can be used as long as it does not exceed a certain limit.

Phase Four: Exploring the Stances (s)
Patterns of Argumentation

Group A

Drugs generate many problems in our society

My neighbour, who is a drug addict, has been deserted by his wife.

Our sports women, Pratima Kumari, and Karnam Malleswari have been debarred from participating in Olympics since they were detected to have abused drugs.

Those who are addicted to drugs will resort to crimes when they do not get it.

There is every chance of drug abuse leading to fatal diseases like AIDS.

Group B

These drugs are being used as sedatives by doctors during surgeries.

Are all steroids narcotics?

May families make their livelihood by marketing drugs.

Drugs make men forget his sorrows and make him merry.

Drugs are a relief to cancer patients from unbearable pain.

Phase Five: Refining and Qualifying Positions

Teacher

Do you mean that drugs are permissible to a certain extent in life?

Doctors make use of them only after taking into consideration the nature and gravity of the disease.

Doctors make use of it only as a curable medicine to the patient for the time being and not in harmful quantities to the body.

If the daily use will not give the pleasures to you then what will you

Group B

These drugs are in use in some areas of medical science.

So, it is good to human body.

Is it not right?

Like wise, drugs are also to be used daily in a limited quantity.

Then we have to increase the dose.

do?

If so, you will become another Najeeb as in this incident, an addict.

Suppose, you are taken to the hospital for treatment as a drug addict? Your doctor suggests avoiding the drugs completely. Then what will be your response? Will you go on using them?

(shifting)

No, we will not use drugs turning down the advice of the doctor.

(shifting confirmed)

Teacher

Is it sure that you will never consume drugs in your life?

Many people are using drugs as a panacea for mental tensions. Is it proper?

Then are you capable of refusing drugs in any situation even in the face of temptation?

Group A

Indeed, We will never use drugs.

No, never. That may provide us temporary happiness/pleasure. But that will ultimately lead us to utter disaster.

Yes, certainly.

(Consistency)

Phase Six: Testing Factual Assumptions Behind Qualified Positions.

1. Drugs are not a remedy for our sorrows and worries.
2. Instead they will destroy our life.

Facts

Drugs are in use as medicines in its small qualities. Its abuse creates un-healthiness in the society. The powers of creative thinking of those who consume drugs get destroyed gradually. These drugs play a major role in the spread of deadly diseases like AIDS, Hepatitis B etc., among their preys. We

should avoid unhealthy habits like smoking, consumption of alcohol and drugs....etc. We should also bring back to normal life those people who are addicted to aforesaid unhealthy habits. Thus 'Good manners' are to be practised in our life.

SUB SECTION 5**LESSON PLAN FOR THE VALUE 'SERVICEMINDEDNESS'****Phase One: Orientation to the Case**

"The youth injured in the accident was abandoned on the Road for 800 rupees"

Thiruvananthapuram

The youth injured in a car accident was abandoned on the road for Rs. 800. Santhosh, aged 26, was seriously injured when a car knocked him down near Kizhekke Kotta here yesterday. Santhosh was knocked down by a car owned by Manjith. Santhosh who was seriously injured was surrounded by a large crowd. Soman who was among them claimed that the injured was his friend and he took him to the hospital in Manjith's car. But on the way, Soman told Manjith that it was better to leave the injured on the road side since there would be criminal case against him if he died on the way. Taking 800 rupees from Manjith, Soman abandoned the injured person on the side of the road and tried to escape by an auto. But he was caught hold of by the people.

Facts

1. False promise of help was offered by saying that the injured person was his friend.
2. Without considering the serious condition of the injured person, the other tried to exploit the situation.

3. Leaving the injured person on the way, the other tried to escape with Rs.800.
4. The friend who offered help was caught by the public.

Phase Two: Identifying the Issues

The seriously injured person was abandoned on the way for money by offering help.

(Personal Motive Vs Service)

Phase Three: Taking Positions

1. Our life is more important than those of others. Serving others by sacrificing our life is ignorance
2. Life of others is more important. Servicing others is more important than anything else.

Phase Four: Exploring the Stance(s)

Patterns of Argumentation

Group A

Many matters would have persuaded the accused to act like this.

Even if the seriously injured person is taken to the hospital, nothing can be done to save his life with this meagre amount.

Moreover, he will be held responsible for the accident and will be charged

Group B

We should not act like this out of greed, life is precious.

If so, why did he receive money from the owner of the car?

If he had not interfered in the matter, somebody else would

with criminal case. He might have escaped for this reason. He would have done this as self-defence.

In cases like this, it is foolish to save others without minding one's own defence.

have saved him. So it is clear that he has shown his selfishness in this matter.

Phase Five: Refining and Qualifying Positions

Teacher

Is it money or is it the life of a person that is more important?

What would you do if this has happened to a close relative of yours?

If this accident had happened to you, what would you expect others to do for you?

Then would you give more importance to money or would you give more importance to the action to save the life of others?

Teacher

Would you save others in situations like this at any cost?

What would you do if someone prevents you from helping others by giving you money?

Would you help the injured man if he was identified as a notorious person known as corrupt among the public?

Group A

Nothing can be done without money. So money is more important than the life of a person or anything for that matter.

I would help him to save his life

I think others would have taken me to the hospital immediately.

Certainly, I would give more importance to save the life of others.

Group B

Certainly

I would give more importance to helping others than money.

I think that he deserves it as punishment for his wrongs. Still I would consider it as my duty to save him.

Phase Six: Testing Factual Assumptions Behind Qualified Positions

1. More importance should be given to moral values than money.
2. Saving the life of the person injured in an accident should be given more importance.

Facts

We should always be service-minded. This is what is taught to us by the stories and actions of great people. A doctor should not ever miss a chance for extending his helping hand to someone who is really in need. We should always try our level best to make our work fruitful. We can never behave differently if we observe how unselfishly the plants serve the earth!

SUB SECTION 6**LESSON PLAN FOR THE VALUE 'HARD WORK'****Phase One: Orientation to the Case**

Tamil families are engaged in the work of laying cable near the school gate. It is said that they have enough farmland in their native place. They come here and do laborious work when there is no farming work in their place. Why can't we do such laborious work when unemployment is a burning problem here?

Facts

1. People from Tamil Nadu are willing to work hard.
2. They come to Kerala and earn money through hard work when they are free from farming work in their place.
3. In Kerala unemployment is becoming a burning problem.
4. The people of Kerala are not willing to work hard in their native place.
5. The result is that job opportunities are lost to us in our own place.

Phase Two: Identifying the Issues

1. Unemployment is becoming a grave problem in Kerala.
2. Our people are reluctant to work here
3. Hence we lose our job opportunities here

(Unemployment Vs Attitude towards Hard work)

Phase Three: Taking Positions

1. The problem of unemployment is due to the negative attitude of people towards hard work.
2. The problem of unemployment is due to the policy of Government.

Phase Four: Exploring the Stance(s)

Patterns of Argumentation

Group A

There are many job opportunities in Kerala. But the problem is that we do not make use of them in the proper way. Our approach to employment should change. We should treat every job as dignified. Similarly we should try to work hard.

If we were willing to work hard we could have procured even those jobs in Kerala which are being done by people from other parts of our country.

We should do our duty. It is said that some of the Tamils who come to work here have enough savings in their homeland. Still it should be noted that they have the habit of working hard. Once a habit is formed it becomes impossible to alter it. It is such persons who become robbers and criminals in life afterwards.

Group B

Here it is the duty of the government to solve the burning problem of unemployment. They should give due importance to this problem. In a society, it is not necessary for all people to work hard. For example the rich need not do it.

There is nothing wrong in using the wealth inherited from our forefathers. If there is enough savings, life can be very happy and only when all savings get exhausted one should think about earning for living.

In that case, robbers and criminals are people who work hard

Phase Five: Refining and Qualifying Positions

Teacher

What is your view about life?

If you work hard, you can earn more. The more you work, the more you earn.

It is hard work that takes us to the peak of life.

For example, haven't you seen people going to the Gulf countries seeking jobs? Such people do hard work and make money there. Hard work will be recognised every where. So we should cultivate the habit of hard work.

Group B

My view is that life is to be celebrated. We are reluctant to work hard as we think of becoming rich all of a sudden. There is no need of hard work if there is enough ancestral property.

It is the high-salaried job that makes us reach the peak of life.

We should change ourselves according to the situations of life.

(Shifting)

Teacher

Do you have respect for people who work hard?

All great men have attained their greatness through hard work and miseries, haven't they?

Do you respect people who labour for earning a livelihood?

Can you give example for such persons?

Group A

Certainly.

Yes, *(Examples are given)*.

Yes.

Group A confirms this argument through public discussion and gives examples directly known to them.

Phase Six: Testing Factual Assumptions Behind Qualified Positions

1. One should attain greatness through hard work.
2. The only way to reach the peak of life is hard work.
3. Such people will be respected by all.

Facts

Hard work is a good habit. There is no success without hard work. The life of many great men has proved this. A person who works hard can live with respect anywhere in this world. If the earning is to be sustained, continuous hard work is necessary.

SUBSECTION 7

LESSON PLAN FOR THE VALUE 'SIMPLICITY'

Phase One: Orientation to the Case

Teacher shows two pictures;

1. No Gold, No Marriage - 1st Case

Then teacher asks, "What do you feel from this picture?"

2. Picture of Poverty - IInd case

Teacher asks, "What do you see in this picture?"

Facts

1. Extravagance is to keep up status
2. It is beautiful
3. It is show-off
4. People can live without any extravagance
5. Poverty can not be wiped off.

Phase Two : Identifying the Issues

- Extravagance is to keep up status
- Poverty can be wiped off

One policy issue for discussion

Extravagance/Simplicity, which is to be given more importance in life?

Phase Three: Taking Positions

1. One cannot blame the rich for their lavishness.
2. Simplicity makes us acceptable to all.

Phase Four : Exploring the Stance(s)

Patterns of Argumentation

Group A

Being extravagant is not to be appreciated.

While wealthy people expend so much money they do not consider the poverty stricken people.

The gap between haves and have-nots is increasing day-by-day. So wealthy people should help the have-nots at least to fill their stomach.

Group B

If you are wealthy there is nothing wrong in being extravagant.

Money makes you prominent in the society. Undoubtedly money gives you name and fame.

Each person saves money for himself.

Phase Five: Refining and Qualifying Position

Teacher

What do you mean by extravagant items?

Won't you use these items?

Even if your parents purchased them for you?

Teacher

Do you say that life is to be celebrated with all festivities by spending all that you save?

Money is also meant for helping others. Isn't it?

Suppose, you are in need of help from

Group A

Each item you purchase in order to get noticed among others is extravagant.

No

Group B

Yes, why should one save money? We have only one life and that is to be lived joyfully in every possible way.

There is no need of helping others. We have no time to spare for others.

Yes (*Shifting*)

others. In such a situation do you expect them to help you?

Is it not the same if others wanted a help from you?

Yes.

Don't you think that it is your duty to help others by giving a bit out of what you spend extravagantly?

Yes, Certainly.
(*shifting confirmed*)

Phase Six: Testing Factual Assumptions Behind Qualified Positions

1. Extravagance for popularity and for being prominent in the society is foolishness.
2. Helping those who are in need is better than being extravagant.

Facts

Our expenses should be only for our real needs and not for over and above it. Do not get enthralled by extravagant items. Lead a simple life. For example, the simplicity of Mahatma Gandhi has made him known all over the world. The habit of acquiring costly and unwanted items just to compete with others should be avoided.

SUBSECTION 8**LESSON PLAN FOR THE VALUE 'DIGNITY OF LABOUR'****Phase One: Orientation to the Case**

Even after acquiring educational qualifications required for becoming a teacher in High Schools and though well off, Raju is employed as a peon. All the other members of his family are holding high posts. Raju's low employment status/low profile creates headache to his family members. Here what is to be done by Raju?

Facts

1. Raju is satisfied with his present job.
2. Rajus' relatives are highly employed.
3. Raju's profile is low according to all others.
4. Others have thrown him into total confusion.

Phase Two: Identifying the Issues

Is Raju to continue with his present job with all dignity?

or

Is Raju to forsake his job to keep all others happy?

Phase Three: Taking Positions

1. Raju should continue in his job
2. Raju should resign his job, if it creates problems to others.

Phase Four: Exploring the Stance(s)

Patterns of Argumentation

Group A

Any job accepted by the society is respectable. Hence Raju should continue in his job.

Here, employment in accordance with educational qualifications is impossible. Hence continue with the job he has got and try to ascend in stature.

Is acquiring money the only motive in life? Every job has its own dignity.

Is not agriculture a dignified job?

Failure is nothing but stepping stones to success. Why do not they resort to farming of other seeds?

Group B

May be true. Still, Raju's qualifications will provide him a higher job. Hence Raju should not continue with his job.

He can try for other jobs even after giving up the present occupation. High status job provides us with high salary, and also high reputation.

But only those with highly paid jobs have high reputation in the present day society.

Many farmers committed suicide since they were in debts.

Aren't they risking their lives by doing so?

Phase Five: Refining and Qualifying Positions

Teacher

What do you want to become in life?

Suppose, you did not get those ones, then what will you do?

Suppose, you got a job having a very low salary? Then what will you do?

Will you keep the dignity of the job that you got?

Why?

Will you try to sacrifice its dignity for money?

If so, will you support a wealthy

Group B

(Says different high status jobs)

(They mention jobs with comparatively lower status.)

Will do the job for the time being.

Yes.

That may lead to success (*Shifting*).

No.

underworld don or a simpleton who struggles hard to live on with the income of his hard work?

So, is it good for Raju to continue with his job believing in its dignity?

Certainly will be with the second one.

Yes, Surely. (*Shifting confirmed*)

Teacher

Do you give importance to the respectability of a job?

Will you take up any job for living?

Don't you believe that you should stick on to this policy at any juncture?

Group A

Yes. Money comes and goes.

Yes. Any respectable job will be accepted.

Yes, Sure. (*Consistency*)

Phase Six: Testing Factual Assumptions Behind Qualified Positions

1. Small jobs also have dignity.
2. Find out respectability in one's job, should not live only to amass wealth.

Facts

Though sufficient job opportunities according to the educational standard of all are not available we can take up any job which is recognized by the society. For example, farming is also a dignified job. It is high ambitions which are beyond our reach that usually lead us to failure in life.

SUBSECTION 9

LESSON PLAN FOR THE VALUE 'SENSE OF RESPONSIBILITY'

Phase One: Orientation to the Case

Roadside garbage, blocked drainage pipes, uncleared waste bins and industrial wastes being deposited into rivers. Who is responsible?

Facts

1. Wastes are heaped in every place.
2. Environment is becoming polluted.

Phase Two: Identifying the Issues

- Environment is becoming polluted. Who is responsible?

One Policy Issue for discussion

Who is responsible for the cleanliness of our surroundings? *The Public / The Government?*

Phase Three: Taking Positions

1. The Government should take necessary action for the cleanliness of our surroundings.
2. Each and everyone should clean the surroundings.

Phase Four: Exploring the stance(s)

Patterns of Argumentation

Group A

We should keep our classroom neat and clean.

Group B

Peons and sweepers are employed exclusively for that job.

Remnants of food should be deposited only in the place meant for it

We should keep our surroundings neat and clean.

Boys should also use lavatories for passing urine.

Why shall we not clean the lavatories ourselves?

We should not pass urine in open area. It will spread diseases.

Can't we stop dumping waste in public places?

Man being a social being should give equal importance to personal hygiene and also hygiene of society.

Deadly diseases like Dengue fever etc., are due to lack of hygiene and sanitation of the surroundings.

Treatment is very expensive and complicated as well.

Teacher interferes.

Waste bin is far off and it is difficult to go that far.

We cannot clear the waste being thrown by others.

We cannot enter into lavatories because of foul smell. Lavatories are not in proportion to the children making use of it. In addition, water facilities are not available there.

It is not our responsibility.

What will we do in unavoidable situations?

Where will we throw waste when we get stifled for want of space for other necessities? Waste is to be cleared by the Panchayat Authorities.

Keeping the hygiene of the society is not as easy as that of keeping personal hygiene.

They can be effectively treated with modern medicines.

Phase Five: Refining and Qualifying Positions

Teacher

Are you indifferent to the hygiene of the society?

Won't you keep your house and its surroundings neat and clean?

Group B

We cannot clean the area occupied by others.

Indeed.

What will you do if you notice that the surroundings are dirty because of the carelessness of others and it is leading to spread of diseases?

We will tell them to clean it.

What will you do if they do not clean it still?

We will clean it for the time being. (*shifting*)

Will you make it a routine or be reluctant afterwards?

We will show how effective our work has been, what good it will serve and will make them understand about their responsibility to clean the surroundings and extend our help to them for the same.

Do you say that only the Government Servants should play a role in cleaning the surroundings?

Yes.

Suppose, if you are designated for the job, what will you do?

We ought to do that.

Teacher

Group A

Do you say that you will try your level best for maintaining social hygiene?

Yes.

Even if you have been employed to clean public lavatories?

Indeed, we will do the job sincerely. (*consistency*)

Phase Six: Testing Factual Assumptions Behind Qualified Positions

1. We shall always keep our surroundings and ourselves clean.
2. When we think about those who are indulged in the duty of cleaning surroundings, we understood the necessity of cleaning the surroundings by ourselves.

Facts

Since "Hygienic Keralam beautiful Keralam" is the motto, our responsibility is to ensure cleanliness and while ensuring personal hygiene, we should also ensure social cleanliness. Likewise, this Nature is very beautiful and it is our responsibility to preserve that beauty. We should never litter in public places. It is our collective responsibility to prevent pollution and thus protect Nature. Preservation of Nature leads us to health and ultimate happiness.

CONCLUSION

JIM is peculiar in all its aspects. One of the important characteristics is its 'Socratic Style' in which the teacher asks the students to take a position on an issue and then challenges their positions by exposing its implications. This is for mature clarifications from the students. She adds analogous questions also to students.

Case selection for discussion is more important in a classroom for using JIM. Likewise, from the part of the teacher asking personal questions to get them intensely involved emotionally and personally in the issue is a task. Because it is in this phase five that the acceptable value from the conflicting pair of values is to be selected finally. Hence all teachers are requested to pay more attention to phases one and five of JIM.

For the teacher who has a prominent role in JIM there are specific duties in each of the six phases.

- Phase One** - Skill for identifying appropriate case materials for discussion/debate.
- Phase Two** - Skill for identifying the most relevant fact from those stated by students that can be used for pinpointing the value conflict.
- Phase Three** - Skill for pointing out the different stances/positions usable for argumentation.
- Phase Four** - Skill for monitoring the students' arguments.
- Phase Five** - Skill for asking personalized questions for developing emotions and thinking in students.

Phase Six - Skill for pointing out the differences happened between the original stand point and present stand point regarding the value problem and guiding students for its future applications.

Hope that this module will be useful to you for mastering JIM and the skills to achieve the aim of inculcation of values through it.

Wish you all the best

3/12/11
SP

Chapter VI

SUMMARY OF FINDINGS, CONCLUSIONS AND SUGGESTIONS

- * The study in Retrospect
- * Major Findings of the Study
- * Interpretation and Conclusion of Results
- * Educational Implications of the Study
- * Suggestions for Further Research

SUMMARY OF FINDINGS, CONCLUSIONS AND SUGGESTIONS

This chapter summarises the entire study done. It provides an overall view of the major findings, conclusions, educational implications and suggestions resulting from this study.

THE STUDY IN RETROSPECT

The study aimed at development of a training module for teachers to transact Biology curriculum for developing moral values in secondary school students. 'Value-oriented education' is the need of the hour. But it is not an easy job. From the study it is proved that a teacher with special training on selected strategies of value education can develop these values in their students.

First of all training was given to 30 select teachers to analyse the content of Biology, which is rich in values and found out the values inherent in them. Then training was given to transact the select values through the model Jurisprudential Inquiry Model, JIM. The whole training procedure later was transformed to develop a *module* because of its positive effect in value inculcation. Thus, this study is providing a self-learning material in the form of a module for Biology teachers to analyse the values inherent in the

content of Biology and to transact them through the Jurisprudential Inquiry Model of Teaching.

Restatement of the problem

The problem of the present study is entitled as "DEVELOPMENT OF A TRAINING MODULE FOR TEACHERS TO TRANSACT BIOLOGY CURRICULUM FOR DEVELOPING CERTAIN MORAL VALUES IN SECONDARY SCHOOL PUPILS".

Objectives

The objectives of the present study are as follows

1. To train teachers to transact Biology curriculum for developing certain moral values in secondary school pupils.
2. To develop a training module based on the above procedure.

Hypotheses

The hypotheses formulated for the study are as follows

1. There will be a positive effect for the training given to develop moral values identified from the secondary school Biology curriculum which is transformed into a module.

2. The effect of training given for developing moral values, which is presented in the module, will be longlasting as evidenced by the retention of the same.

Methodology

The methodology of the study is provided below in brief.

a) Design of the Study

The study was first conducted as an experimental one as the investigator wanted to develop a training module for teachers to transact Biology curriculum for developing certain moral values in secondary school pupils. The study gave training to selected Biology teachers first to analyse the Biology content of the curriculum of standards VIII, IX and X to find out moral values hidden in them and secondly training was given to transact these values through a particular model of teaching, Jurisprudential Inquiry Model of Teaching. The complete training procedure was transformed to a module after finding out its positive effect through statistical analysis.

b) Variables of the Study

The two variables treated in the study are,

1. **Dependent Variable:** The development of moral values in secondary school pupils.

2. **Independent Variable:** The training given to teachers to transact Biology curriculum, which was later developed as a module.

c) **Sample for the study**

The sample for the training was 30 Biology teachers who were willing to participate in the study and practice the training in their classes. The sample selected were from three regions, viz., Thrissur, Manjeri and Calicut University Campus which ensured a coverage of two complete districts.

The treatment and tests were applied to 1094 students of standard IX who were the students of the 30 trained teachers in their schools.

d) **Tools used for the study**

The following tools were used for the study

1. Test of moral values for secondary school students.
2. Eight value based lesson plans on JIM to develop the identified moral values from the Biology curriculum which are later transformed to a module.

e) **Statistical techniques used for the study**

Test of significance of the difference between two correlated means.

MAJOR FINDINGS OF THE STUDY

The analysis was done on the major variable Moral Values and its components Moral Awareness, Moral Thinking, Moral Action and Moral Attitude. The major findings of the study are given below.

1. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the *Total Sample*.

The differences in mean scores of all the select variables between the pre-test and post-test for the total sample showed significance at 0.01 level.

2. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the students of Individual Teacher Samples (30).

Of the 30 teachers 22 teachers (73%) showed significantly higher mean scores for the major variable 'Moral Values' after the transaction of the select eight values using the special lesson plans based on JIM.

Of the 30 teachers 16 teachers (53%) could show a significantly higher mean score for the variable 'Moral Awareness' after the transaction of the same eight values.

Six teachers out of 30 (20%) could show a significantly higher mean score for the variable 'Moral Thinking' after the transaction of the same lessons.

Ten teachers out of the 30 (33%) could show a significantly higher mean score for the variable 'Moral Action' after the transaction of the same eight values.

Of the 30 teachers 11 teachers (37%) could show a significantly higher mean score for the variable 'Moral Attitude' after the transaction of the same eight lessons.

Of the four components of Moral Values namely Moral Awareness, Moral Thinking, Moral Action and Moral Attitude, it is found that the lessons are capable of developing Moral Awareness to a moderate extent. But Moral Attitude and Moral Action are developed to a less extent and Moral Thinking to the least extent. Still all the five variables have shown an increase from their entry condition it shows the lessons had a positive effect.

3. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Male and Female Teachers.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -6.57, -6.16, -3.26, -5.44 and -4.51 respectively for the students of Male teachers. All these values showed significance at 0.01 level.

The comparison of the mean scores of the select variables between the pre-test and post-test for the students of Female teachers found that all the variables showed significance at 0.01 level.

4. Comparison of Mean scores of the Select Variables between the Pre-test and Post-test for the students of Three Regions, viz., Thrissur, Manjeri and Calicut University Campus Regions.

Comparison shows that mean scores of all the select variables showed significance at 0.01 level in the case of Manjeri region. In the case of Thrissur region, all the critical ratios except Moral Thinking showed significance at 0.01 level and those of Moral Thinking' showed significance at 0.05 level. In Calicut University Campus region, it is found that all the critical ratios of the variables except 'Moral Thinking' showed significance at 0.01 level and 'Moral Thinking' had no significance at any level.

5. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for Boys and Girls.

In both Boys and Girls critical ratios of all the select variables showed significance at 0.01 level.

6. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Government and Aided schools.

All the t-values of the select variables showed significance at 0.01 level in both Government and Aided schools.

7. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Urban and Rural Schools.

The means of the pre-test and post-test for the select variables were compared and found that all the t-values showed significance at 0.01 level in the students of Rural schools.

In the case of urban schools, the critical ratios obtained for the select variables Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -6.92, -6.68, -1.74, -4.50 and -3.36 respectively. All the critical ratios except 'Moral Thinking' showed significance at 0.01 level.

8. Comparison of Mean Scores of the Select Variables between the Pre-test and Post-test for the Students of Co-educational, Boys-only and Girls-only Schools.

In co-educational schools, the critical ratios obtained for all the select variables showed significance at 0.01 level.

In Girls-only schools the critical ratios obtained were -4.18, -2.07, -1.00, -2.43 and -3.00 for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude respectively. Moral Values and Moral Attitude found significant at 0.01 level and t-values of Moral Awareness and

Moral Action showed significance at 0.05 level and Moral Thinking had no significance at any level.

In Boys-only schools, the critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were -4.05, -3.77, -0.67, -3.68 and -1.62 respectively. The t-values of Moral Values, Moral Awareness and Moral Action showed significance at 0.01 level, and Moral Thinking and Moral Attitude had no significance at any level.

9. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Total Sample.

The mean scores of the select variables were compared for significance and thus got the scores 4.55, 2.34, 4.04, 4.61 and 4.68 respectively for Moral values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude. All the t-values obtained were higher than the level of significance. The result shows that the retention test mean scores were lower than post-test means and hence it is found that the retention of the variables is not found for the total sample.

10. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Male and Female Teachers.

The means of post-test and Retention test were compared for

significant difference and the critical ratios obtained were 1.88, 0.86, 2.16, 1.87 and 2.40 for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude respectively for the students of Male teachers. From the results it is found that Moral Values, Moral Awareness and Moral Action were retained by the students of Male teachers.

In the case of Female teachers, these t-values were 4.24, 2.20, 3.41, 4.25 and 4.02. From this, it is found that all the critical ratios exceed the level of significance.

11. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for Boys and Girls.

The t-values obtained were 4.22, 2.58, 4.57, 4.21 and 3.93 respectively for the variables Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude for Boys.

For Girls these values were 2.16, 0.70, 1.23, 2.30 and 2.64 for the select variables Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude respectively.

12. Comparison of Mean Scores of the Select Variables between Post-test and Retention test for the Students of Government and Aided Schools.

The means for post-test and Retention test were compared for significant difference and the critical ratios obtained for the select variables

Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were 3.78, 2.38, 3.11, 3.68 and 3.50 respectively for the students of Government schools.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were 2.58, 0.77, 2.58, 2.77 and 3.11 respectively for the students of Aided school. Only the value of Moral Awareness showed significance.

13. Comparison of Mean Scores of the Select Variables between the Post-test and Retention test for the Students of Urban and Rural Schools.

The critical ratios obtained for Moral Values, Moral Awareness, Moral Thinking, Moral Action and Moral Attitude were 1.35, 1.14, 2.06, 1.84 and 1.06 respectively. These findings show that all the select variables except Moral Thinking retained by the students of Urban schools.

The correlated means between post-test and retention test were compared for significance for the students for Rural Schools, the critical ratios obtained were 4.34 for Moral Values, 2.12 for Moral Awareness, 3.65 for Moral Thinking, 4.32 for Moral Action and 4.55 for Moral Attitude. All the values exceeded the level of significance.

INTERPRETATION AND CONCLUSION OF RESULTS

A summary of examination of the results as interpretation and conclusion is shown below.

From the findings of the study it revealed that Moral Values and its selected variables are fully developed and showed high significant results in the case of **Total Sample Boys and Girls, students of Male and Female teachers, Thrissur and Manjeri regions, Government and Aided schools, Rural schools and Co-educational schools.**

It is observed from the findings that only four categories of the samples that is students of University Campus school region, Urban schools, Boys-only and Girls-only schools did not show significant result in only one variable 'Moral Thinking'. Likewise students of Boys-only schools did not show significant result in the variable 'Moral Attitude'. In the case of Individual teacher samples, eight teachers did not show significant result in Moral Values, 14 teachers in Moral Awareness, 24 teachers in Moral Thinking, 20 teachers in Moral Action and 19 teachers in Moral Attitude.

From the findings it is understood that from all the categories of samples the individual teacher samples only did not give significant results especially in the variable 'Moral Thinking'.

The findings of the comparison of Mean Scores of the select variables for finding out its retention effect reveals that;

Moral Values are retained by the students of Male teachers and urban schools out of the selected nine samples.

Moral Awareness is retained by Girls, the students of Male teachers, Aided schools and Urban schools.

Moral thinking is retained by Girls alone.

Moral Action is retained by students of Male teachers and Urban schools.

Moral Attitude is retained by the students of Urban schools only.

From these findings it could be understood that the effect of training given for developing Moral Values through the developed lessons in the case of Moral Awareness is the maximum and then the Moral Action and Moral Values and at last Moral Attitude and Moral Thinking. From the results it is also seen that the selected variables could not be retained by Total sample, Boys, students of Female teachers, Government schools and Rural schools.

Conclusion

The findings of the study lead to the following conclusions.

1. Special lessons prepared based on JIM to transact Biology curriculum are capable of developing the select Moral Values with their components in secondary school pupils.
2. The effect of training given for developing Moral Values and the components through the special lessons which is presented in the module was lasting to a partial extent.

EDUCATIONAL IMPLICATIONS OF THE STUDY

The results of this experimental study provides a number of implications in the educational field. The outcome of this study, the module, is useful to teachers, students, curriculum makers and also policy makers in value education.

Indian destiny is shaped in our classrooms. In this context the whole activities of the child in the school are important. Considering textbooks the preface highlights the instructional objectives of cognitive, affective and conative domains. It ensures that the book is helpful for the existence and welfare of the human beings. Is this aspect of the book fulfilled by its transaction? Regarding the role of the teachers, Is their duty limited only to impart the factual knowledge of child? No. The teachers are playing a prominent role to the actual transaction of the text book to fulfill the objectives. Timely training is to be given to teachers for this. Value education

is also to be considered important and it is time to practice strategies and methods to make it reach up to the expected level.

The implications of the study are as follows:

1. In view of this study every teacher should take value education of children as regular responsibility since it is the need and necessity of the hour.
2. Every teacher has to find out values inherent in their subjects because the content of all subjects are rich in values.
3. Teachers should find out time and periods to transact the identified values of their subjects in their classrooms.
4. Teachers should be ready to get trained in value education/value inculcation through in-service training/pre service training/self learning materials.
5. Provide ample opportunities to students for practice of values in schools.
6. The present curriculum provides many experiences/learning activities to students for being a discoverer. So, it is necessary to add many value-oriented questions for their exercise in textbooks.

7. The curriculum committee should also provide handbooks to teachers to practice value inculcation methods and strategies.

The agencies can follow the following recommendations.

1. NCERT, IASE, SCERT, DIET's and CTE's should organize training courses to teachers on value education.
2. Since modules are proved as effective for in-service training of teachers it can have due impact on the nature of in-service education in future.
3. Government should take necessary steps to develop modules of this kind in all subjects for the benefit of teachers.
4. This type of modules are helpful for adult education, extension – education centres, training authorities etc.
5. This methodology is helpful to organise live programmes in mass media for value inculcation.

Since value education is the need of the hour and as there is a lack of this type of modules in teacher training of pre-service and in-service programmes, the module developed in this study is hoped to be highly significant in the educational field. This is also extendable to students, Research scholars, Distance learners, Curriculum committee and also to State

and National Resource groups. Thus a nation wide application is expected by the investigator for the developed module.

SUGGESTIONS FOR FURTHER RESEARCH

Since the present study throws light on an area which is neglected even now, that is value education, this study leads to some suggestions for further research.

1. As science is considered for facts only by most people, the provision of values in the subject is to be explored. Hence critical studies and experimental studies are to be conducted in science subjects like Physics, Chemistry and Mathematics.
2. As teachers are the value transmitters they are to be trained in the transmission process. Researches for providing training to teachers based on new effective strategies for value education are to be conducted.
3. Most of the teachers have the opinion that the schools have a busy schedule and hence they cannot attend training programmes for better classroom practices. In such a situation Modules/Packages are to be developed through research for self-training and learning of all teachers.

4. Value education is helpful for better life in the society. So it is an extensive area and includes all types of people, like students, teachers, parents and adults. Studies are to be conducted to give attention to all strata of people for their improvement in life by developing values.

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APPENDICES

APPENDIX I

TEST OF MORAL VALUES

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Section 1

താഴെ കൊടുത്തിരിക്കുന്ന ഓരോ ചോദ്യത്തിനും A,B,C,D എന്നിങ്ങനെ നാല് ഉത്തരങ്ങൾ വീതം തന്നിരിക്കുന്നു. ഉത്തരക്കടലാസിൽ ഓരോ ചോദ്യനമ്പരിനും നേരെ A,B,C,D എന്നിങ്ങനെ കൊടുത്തിരിക്കുന്നു. ഓരോ ചോദ്യത്തിനും ശരിയായ ഉത്തരം കണ്ടുപിടിക്കുക. അതിനുശേഷം ഉത്തരക്കടലാസിൽ ചോദ്യനമ്പരിനുമേൽ ശരിയുത്തരത്തെക്കുറിക്കുന്ന അക്ഷരത്തിൽ ഗുണനചിഹ്നം (X) ഇടുക.

ഒരു ചോദ്യത്തിന് ഒരു ഉത്തരം മാത്രം അടയാളപ്പെടുത്തുക

- പാഴ് വസ്തുക്കൾ അലക്ഷ്യമായി വലിച്ചെറിയുന്നത് ഒരാളുടെ ഏതു സ്വഭാവത്തെ കാണിക്കുന്നു.

A) സത്യസന്ധത	B) അച്ചടക്കമില്ലായ്മ
C) ശുചിത്വമില്ലായ്മ	D) ഉത്തരവാദിത്വമില്ലായ്മ
- സ്കൂളിന്റെ നിയമാവലി സ്വീകരിക്കുവാൻ സ്വയം തയ്യാറാവുന്ന വിദ്യാർത്ഥി ----- ആണ്.

A) ക്ഷമയുള്ളവൻ	B) അച്ചടക്കശീലമുള്ളവൻ
C) സത്യസന്ധൻ	D) ധൈര്യമുള്ളവൻ
- അസുഖം ബാധിച്ച് ചത്തുപോയ പശുവിനെ പൊതുവഴിയിൽ തള്ളിക്കളയുന്ന ഒരാളുടെ സ്വഭാവത്തെ എങ്ങനെ വിലയിരുത്താം

A) സ്വാർത്ഥമനോഭാവം	B) കർത്തവ്യബോധമില്ലായ്മ
C) ആത്മാർത്ഥമില്ലായ്മ	D) ശുചിത്വമില്ലായ്മ
- കുട്ടുകാരുമൊത്ത് പൊതുപ്രവർത്തനത്തിനിറങ്ങുക വഴി രാജ്യ കാണിക്കുന്നത് ഏതു ഗുണമാണ്.

A) ആത്മാർത്ഥത	B) സൗഹൃദം
C) സാമൂഹ്യസേവനം	D) രാജ്യസ്നേഹം
- വീടും പരിസരവും വൃത്തിയായി വയ്ക്കുകവഴി ആ വീട്ടുകാർ കാണിക്കുന്ന ഗുണം ഏത്.

A) മര്യാദ	B) ശുചിത്വബോധം
C) പ്രകൃതിസ്നേഹം	D) ആത്മാർത്ഥത

6. ആർഭാടം നിറഞ്ഞ ഒരാളുടെ ജീവിതശൈലി കാണിക്കുന്നത് അയാളുടെ ഏതു സ്വഭാവമാണ്.

A) വിശ്വാസ്യത	B) ലാളിത്യം
C) അച്ചടക്കമില്ലായ്മ	D) ധൂർത്ത്
7. തന്റെ കുടുംബത്തെ നന്നായി നോക്കുവാൻ വേണ്ടി ചെറിയ ജോലിയെ കിലും ചെയ്യാൻ തയ്യാറാവുന്ന ഗൃഹനാഥന് ----- എന്ന ഗുണത്തെക്കുറിച്ച് അറിയുമെന്ന് കരുതുന്നു.

A) ലാളിത്യം	B) ധൈര്യം
C) തൊഴിലിന്റെ മഹത്വം	D) ആത്മാർത്ഥത
8. ഒരു വിദ്യാർത്ഥി അസാധാരണമായി ഒരു ദിവസം ക്ലാസിൽ വൈകി വരുന്നു. ആ വിദ്യാർത്ഥി കാണിക്കുന്നത് ----- ആണ്.

A) നിയമത്തെക്കുറിച്ച് അറിവില്ലായ്മ	B) അച്ചടക്കമില്ലായ്മ
C) കൃത്യനിഷ്ഠയില്ലായ്മ	D) കർത്തവ്യബോധമില്ലായ്മ
9. 'അച്ചടക്കം' എന്ന വാക്കിന്റെ ശരിയായ അർത്ഥം എന്താണ്.

A) നിയമത്തോടും അധികാരികളോടും അനുസരണ കാട്ടുക
B) പുറമേ നിന്നുള്ള സമ്മർദ്ദം കൂടാതെ തന്നെ സ്വയം നിയന്ത്രിക്കുക
C) രക്ഷിതാക്കളോടും അധ്യാപകരോടും അനുസരണ കാണിക്കുക
D) നേതാവിനെ അന്ധമായി പിന്തുടരുക
10. 'അഹിംസ' എന്ന പദം കൊണ്ട് അർത്ഥമാക്കുന്നത് എന്ത്?

A) ഒരു സാഹചര്യത്തിലും ഒന്നിനെയും കൊല്ലാതിരിക്കുക
B) ഒരു ജീവികളോടും ക്രൂരത കാണിക്കാതിരിക്കുക
C) മനസ്സുകൊണ്ടോ വാക്കുകൊണ്ടോ പ്രവൃത്തികൊണ്ടോ ആരേയും ദ്രോഹിക്കാതിരിക്കുക
D) ഒരു സാഹചര്യത്തിലും ആരോടും അക്രമസക്തമാകാതിരിക്കുക
11. 'ശുചിത്വം' എന്ന വാക്കിന്റെ ശരിയായ അർത്ഥം എന്താണ്?

A) വൃത്തിയും ശുചിത്വവുമുള്ള പരിസ്ഥിതി
B) സ്വന്തം സാധനസാമഗ്രികൾ ചിട്ടയായി സൂക്ഷിക്കുക
C) സ്കൂളിന്റെയും വീടിന്റെയും പരിസരങ്ങൾ അഴുക്കിൽ നിന്ന് സംരക്ഷിക്കുക
D) മനസ്സിന്റെയും ശരീരത്തിന്റെയും പരിസരത്തിന്റെയും പരിശുദ്ധി.
12. 'സ്വാതന്ത്ര്യം' എന്ന വാക്കിന്റെ ശരിയായ ആശയം എന്താണ്?

A) മറ്റുള്ളവരെ നിയന്ത്രിക്കാനുള്ള സ്വാതന്ത്ര്യം
B) നമുക്ക് തോന്നുന്നതെന്തും ചെയ്യാനുള്ള സ്വാതന്ത്ര്യം
C) സമൂഹത്തിന്റെ നിയന്ത്രണത്തിൽ നിന്നുള്ള മോചനം
D) മറ്റുള്ളവർക്ക് കൂടി പരിഗണന നൽകിക്കൊണ്ട് ജീവിക്കാനുള്ള സ്വാതന്ത്ര്യം

Section II

1. രാഷ്ട്രീയ താല്പര്യങ്ങൾക്കുവേണ്ടി സുഹൃത്തിനെ കൊല്ലാൻ ശ്രമിക്കുന്ന വ്യക്തിയെ എങ്ങിനെ പറഞ്ഞു മനസ്സിലാക്കുന്നതാണ് ഉചിതം?
 - A) പാർട്ടിയുടെ ആദർശങ്ങൾ മനുഷ്യന്റെ ഹിംസക്കുവേണ്ടിയുള്ളതല്ല
 - B) രാഷ്ട്രീയ താല്പര്യങ്ങൾക്കു വേണ്ടി മാത്രം ജീവിക്കരുത്.
 - C) മറ്റുള്ളവരുടെ ജീവൻ എടുക്കുവാൻ ആർക്കും അധികാരമില്ല.
 - D) ഹിംസ എല്ലാത്തിന്റെയും അവസാനവാക്കല്ല.
2. നിങ്ങളുടെ വീടിനടുത്ത് പരിസരമലീകരണം ഉണ്ടാകുന്ന തരത്തിൽ ഒരു അറവുശാല പ്രവർത്തിക്കുന്നു. ഈ പ്രശ്നം പരിഹരിക്കുവാൻ ഏതുമാർഗ്ഗം സ്വീകരിക്കുന്നതാണ് കൂടുതൽ നല്ലത്?
 - A) ഉടമസ്ഥരെ നേരിട്ടുകണ്ട് ഈ പ്രശ്നത്തെപ്പൊല്ലി വഴക്കുണ്ടാക്കുന്നു.
 - B) അവിടെ നിന്നും മാംസം വാങ്ങുന്നതിൽ നിന്ന് മറ്റുള്ളവരെ തടയുന്നു.
 - C) ഈ പ്രശ്നമൊന്നും അത്ര വലിയ ഗൗരവമായി കാണേണ്ട ആവശ്യമില്ലെന്ന് ചിന്തിക്കുന്നു.
 - D) സ്ഥലത്തെ മറ്റു വീട്ടുകാരെയും ഈ പ്രശ്നം ബോധ്യപ്പെടുത്തുന്നു.
3. ഒരു ബസ്സിലെ അടുത്തിരിക്കുന്ന യാത്രക്കാരാണ് സണ്ണിയും തോമസ്സും. സണ്ണി ഒരു സിഗരറ്റ് തോമസ്സിന് നൽകുന്നുവെങ്കിലും തോമസ്സ് പുകവലിക്കാത്തതിനാൽ അത് നിരസിക്കുന്നു. സണ്ണി താഴെ പറയുന്നവയിൽ ഏതു രീതിയിൽ പ്രതികരിക്കുന്നതാണ് ഉചിതം?
 - A) സണ്ണി ഒരു സിഗരറ്റ് കത്തിച്ച് പുകവലിക്കുന്നു.
 - B) സണ്ണി സീറ്റിൽ നിന്നൊഴുന്നു വാതിലിനരികിൽ ചെന്ന് പുകവലിക്കുന്നു.
 - C) സണ്ണി സിഗരറ്റ് കീശയിൽ തന്നെ വെച്ച് വീട്ടിലെത്തുന്നതുവരെ പുകവലിക്കാതിരിക്കുന്നു.
 - D) സണ്ണി ബസ്സ് ഒരു സ്റ്റോപ്പിൽ നിറുത്തുമ്പോൾ പുറത്തിറങ്ങി സിഗരറ്റ് വലിക്കുന്നു.
4. താഴെക്കാടുത്തിരിക്കുന്ന സൽപ്രവർത്തികളിൽ ഏറ്റവും ശ്രേഷ്ഠമായി നിങ്ങൾ കരുതുന്നത് ഏത് പ്രവർത്തിയാണ്.
 - A) സുനിൽ ഒരു മുറിവേറ്റ പക്ഷിയെ വീട്ടിൽ കൊണ്ടുവന്ന് ശുശ്രൂഷിച്ച് സുഖപ്പെടുത്തുന്നു.
 - B) രാജു ഒരു അന്ധനെ റോഡ് മുറിച്ചുകടക്കാൻ സഹായിക്കുന്നു.
 - C) അജിത് വഴിയോരത്ത് കണ്ട ഒരു യാചകന് പത്തുരൂപനോട്ട് കൊടുക്കുന്നു.
 - D) രവി തന്റെ വീടിന്റെയും സ്കൂളിന്റെയും പരിസരം സ്വയം വൃത്തിയാക്കുന്നു.
5. രണ്ട് സഹോദരൻമാർക്കിടയിൽ ഒരു സ്വത്ത് വിഭജനത്തെ തുടർന്ന് തർക്കമുണ്ടാകുന്നു. ഒരേ സ്ഥലം തങ്ങൾക്ക് കിട്ടണമെന്ന് രണ്ടുപേരും വാശിപിടിക്കുന്നു. നിങ്ങളുടെ അഭിപ്രായത്തിൽ താഴെ കൊടുത്തിരിക്കുന്ന പരിഹാരമാർഗ്ഗങ്ങളിൽ ഏറ്റവും അനുയോജ്യമായത് ഏതാണ്?
 - A) സുനിൽ ഒരു മുറിവേറ്റ പക്ഷിയെ വീട്ടിൽ കൊണ്ടുവന്ന് ശുശ്രൂഷിച്ച് സുഖപ്പെടുത്തുന്നു.
 - B) രാജു ഒരു അന്ധനെ റോഡ് മുറിച്ചുകടക്കാൻ സഹായിക്കുന്നു.
 - C) അജിത് വഴിയോരത്ത് കണ്ട ഒരു യാചകന് പത്തുരൂപനോട്ട് കൊടുക്കുന്നു.
 - D) രവി തന്റെ വീടിന്റെയും സ്കൂളിന്റെയും പരിസരം സ്വയം വൃത്തിയാക്കുന്നു.

- A) ഇളയ സഹോദരനെന്ന നിലയ്ക്ക് സ്ഥലം അയാൾക്ക് നൽകുക.
 - B) മൂത്ത സഹോദരനോട് ഒരു തീരുമാനമെടുക്കുവാൻ ആവശ്യപ്പെടുക
 - C) ഒരു നറുക്കെടുപ്പിലൂടെ സ്ഥലം ആർക്ക് കിട്ടണമെന്ന് തീരുമാനിക്കുക.
 - D) രണ്ട് സഹോദരന്മാർക്കും തുല്യമായി വീതിച്ചുകൊടുക്കുക
6. ഒരു രാജ്യത്ത് കുറ്റകൃത്യങ്ങൾ വർദ്ധിക്കുന്നതിനുള്ള കാരണം താഴെപ്പറയുന്നവയിൽ ഏതാണ്?
- A) ദുർബലമായ പോലീസ് സേന
 - B) കഴിവുകെട്ട ഗവൺമെന്റ്
 - C) ജനങ്ങളുടെ സന്മാർഗ്ഗബോധമില്ലായ്മ
 - D) ദരിദ്രരുടെ എണ്ണത്തിലുണ്ടാകുന്ന വർദ്ധനവ്
7. താഴെക്കൊടുത്തിരിക്കുന്നവയിൽ ഏതു പ്രവർത്തിയിലാണ് അന്യരോടുള്ള പരിഗണന ഏറ്റവും കൂടുതൽ പ്രകടമാകുന്നത്?
- A) ഒരു അമ്മ മറ്റൊരുടേയോ വിശന്നു കരയുന്ന കുഞ്ഞിന് മൂലപ്പാൽ കൊടുക്കുന്നു.
 - B) അപകടത്തിൽ പരിക്കേറ്റ ഒരാളെ ഒരു കാർ യാത്രക്കാരൻ സൗജന്യമായി ആശുപത്രിയിലേക്ക് കൊണ്ടുപോകുന്നു.
 - C) ആദിവാസികളോട് ദയ തോന്നിയ ഒരു രാഷ്ട്രീയക്കാരൻ അവർക്ക് ഭക്ഷണം പണവും നൽകുന്നു.
 - D) ഒരു രാഷ്ട്രീയക്കാരൻ തന്റെ എല്ലാ സമ്പത്തും സ്വന്തം പാർട്ടിക്കു വേണ്ടി ത്യജിക്കുന്നു.
8. ഒരു ഗവൺമെന്റ് ഹോസ്പിറ്റലിലെ ഡോക്ടർ നിയമവിരുദ്ധമായി രോഗികളിൽ നിന്നും ഫീസ് വാങ്ങുന്നു. ഈ പ്രശ്നത്തിൽ ഏതു പരിഹാരമാർഗ്ഗമാണ് കൂടുതൽ ഉചിതം?
- A) നാട്ടുകാരുമായി ചേർന്ന് ഡോക്ടറെ കൈകാര്യം ചെയ്യുക
 - B) മേലുദ്യോഗസ്ഥന് പരാതി നൽകി തുടർനടപടികൾ ഉറപ്പുവരുത്തുക
 - C) ഡോക്ടർക്കെതിരെ ആശുപത്രിയിൽ സമരം സംഘടിപ്പിക്കുക
 - D) ഡോക്ടർ കൈക്കൂലിക്കാരനാണെന്ന് മാധ്യമങ്ങളിലൂടെ പ്രചരിപ്പിക്കുക.
9. ഒരു സ്ഥലത്തെ മരങ്ങൾ അനധികൃതമായി മുറിക്കുന്നതായി നിങ്ങൾ അറിയുന്നു. തഥവസരത്തിൽ ഏതുരീതിയിലുള്ള പ്രതികരണമാണ് കൂടുതൽ ശരിയായി തോന്നുന്നത്?
- A) പരിസ്ഥിതി സംരക്ഷണ പ്രവർത്തകരെ അറിയിക്കുന്നു.
 - B) വെട്ടിമാറ്റിയ മരങ്ങൾ കൊണ്ടുപോകുന്നത് തടയുന്നു.
 - C) മരങ്ങൾ മുറിച്ച നടപടിക്കെതിരെ സമരമുറകൾ സ്വീകരിക്കുന്നു.
 - D) ഉള്ള മരങ്ങൾ സംരക്ഷിക്കുകയും നഷ്ടപ്പെട്ടവയ്ക്കുപകരം പുതിയവ വച്ചുപിടിപ്പിക്കുകയും ചെയ്യുന്നു.
10. ജനസേവനത്തിൽ യാതൊരു താല്പര്യവുമില്ലാത്ത ഒരാൾ തെരഞ്ഞെടുപ്പിനിറങ്ങുന്നു. ഇങ്ങനെ ഒരാളെ വിജയിപ്പിച്ചാലുണ്ടാകുന്ന ഭവിഷ്യത്തിനെക്കുറിച്ചു

റിച്ച് നിങ്ങൾക്കറിയാം. ഈ സാഹചര്യത്തിൽ എങ്ങിനെ പ്രവർത്തിക്കുന്നതാണ് നല്ലത്?

- A) അയാളെ മന്ത്രിയാക്കാനനുവദിക്കാതിരിക്കുക
- B) അയാൾക്കെതിരെ പ്രവർത്തിക്കുകയും വിജയിപ്പിക്കാതിരിക്കുകയും ചെയ്യുക
- C) അയാളുടെ സ്വകാര്യജീവിതത്തെ പരസ്യമായി ചിത്രീകരിക്കുക
- D) അയാളെ കൈയേറ്റം ചെയ്ത് നശിപ്പിക്കുവാൻ ശ്രമിക്കുക.

Section III

1. നിങ്ങൾ ഇരുചക്രവാഹനത്തിൽ യാത്രചെയ്യുന്നുവെന്നിരിക്കട്ടെ. ഒരു കാൽ നട യാത്രക്കാരന്റെ തെറ്റ് മൂലം നിങ്ങളുടെ വാഹനം അയാളെ ഇടിക്കുന്നുവെങ്കിൽ നിങ്ങൾ അയാളോട് എങ്ങിനെ പെരുമാറും?
 - A) വീണുകിടക്കുന്ന യാത്രക്കാരന് വേണ്ടുന്ന എല്ലാ സഹായങ്ങളും ചെയ്തു കൊടുക്കും
 - B) അപകടം അയാളുടെ തെറ്റുമൂലം സംഭവിച്ചതാണ് എന്ന് എല്ലാവരെയും ബോധ്യപ്പെടുത്തും
 - C) സംഭവസ്ഥലത്തുനിന്നും പെട്ടെന്ന് രക്ഷപ്പെടുവാൻ ശ്രമിക്കും
 - D) യാത്രക്കാരനെ ശകാരിക്കുകയും നിങ്ങളുടെ വാഹനത്തിന്റെ അറ്റകുറ്റപ്പണിക്കായി നഷ്ടപരിഹാരം ആവശ്യപ്പെടുകയും ചെയ്യും.
2. ബസ്സിൽ യാത്ര ചെയ്യുമ്പോൾ നിങ്ങളുടെ അടുത്തിരിക്കുന്ന ആൾ പുകവലിക്കുന്നുവെങ്കിൽ അയാളോട് നിങ്ങൾ എങ്ങനെ പെരുമാറും?
 - A) ഏതെങ്കിലും വേറെ സീറ്റിലേക്ക് മാറിയിരിക്കും.
 - B) അയാളിൽ നിന്നും സിഗരറ്റ് എടുത്ത് പുറത്തേക്കെറിയും
 - C) ബസ്സിൽ പുകവലിക്കരുതെന്നും തൽക്കാലം പുകവലി ഉപേക്ഷിക്കണമെന്നും പറയും
 - D) ബസ്സിലെ കണ്ടക്ടറോട് പരാതി പറയും.
3. അദ്ധ്യാപകൻ ക്ലാസ്സെടുത്തുകൊണ്ടിരിക്കുമ്പോൾ കുറച്ച് കുട്ടികൾ പുറത്ത് ഉറക്കെ സംസാരിച്ചുകൊണ്ടിരിക്കുന്നുണ്ടെന്ന് വിചാരിക്കുക. ഇത് ഈ അദ്ധ്യാപകന് തടസ്സമാകുന്നു. നിങ്ങളാണ് ഈ അദ്ധ്യാപകന്റെ സ്ഥാനത്തെങ്കിൽ എങ്ങിനെ പ്രവർത്തിക്കും?
 - A) ക്ലാസ്സിൽ നിന്നും ഇറങ്ങിചെന്ന് അവരെ വഴക്കുപറയും
 - B) തൊട്ടടുത്ത് ക്ലാസ്സ് നടക്കുന്നുണ്ടെന്നും തടസ്സമുണ്ടാക്കാത്ത വിധത്തിൽ സംസാരിക്കണമെന്നും ആവശ്യപ്പെടും.
 - C) പുറത്തുനിന്നുള്ള ബഹളമൊന്നും ശ്രദ്ധിക്കാതെ ക്ലാസ്സ് തുടരും
 - D) തുടർന്ന് ക്ലാസ്സ് എടുക്കാതെ ക്ലാസ്സിൽനിന്നും ഇറങ്ങിപ്പോകും
4. നിങ്ങളുടെ ക്ലാസ്സിൽ പകർച്ചവ്യാധിയുള്ള കുട്ടി അസുഖമായിട്ടും ക്ലാസ്സിൽ വരുന്നുവെങ്കിൽ അയാളോട് ഏതു രീതിയിൽ പെരുമാറും?
 - A) തൽക്കാലം വിട്ടിരിക്കുകയും അസുഖം മാറുംവരെ വീട്ടിൽ വിശ്രമിക്കുവാൻ ഉപദേശിക്കുകയും ചെയ്യും.

- B) ആ വിദ്യാർത്ഥിക്ക് അസുഖം മാറും വരെ ക്ലാസ്സ് നടത്തുവാൻ അനുവദിക്കില്ല.
 - C) അസുഖം ബാധിച്ച കുട്ടിയെ ക്ലാസ്സിൽ നിന്നും പുറത്താക്കുവാൻ അധ്യാപകനോട് ആവശ്യപ്പെടും
 - D) ആ വിദ്യാർത്ഥിയെ കാണാതെ ഒഴിഞ്ഞുമാറും
5. പരീക്ഷക്ക് നിങ്ങളുടെ സുഹൃത്ത് ഒരു ചോദ്യത്തിനു ഉത്തരം പറഞ്ഞുതരുവാൻ ആവശ്യപ്പെടുന്നു. തഥവസരത്തിൽ നിങ്ങൾ എന്തുചെയ്യും?
- A) ഉത്തരം തെറ്റി പറഞ്ഞു കൊടുക്കുന്നു.
 - B) അപ്പുറത്തിരിക്കുന്ന കുട്ടിയോട് ചോദിക്കുവാൻ പറയുന്നു.
 - C) എഴുന്നേറ്റുനിന്ന് ടീച്ചറോട് സുഹൃത്തിന്റെ ചോദ്യത്തെക്കുറിച്ച് പരാതി പറയുന്നു.
 - D) പരീക്ഷക്ക് ഉത്തരം പറഞ്ഞുകൊടുക്കുന്നത് ശരിയല്ലെന്ന് മനസ്സിലാക്കി ഒഴിഞ്ഞുമാറുന്നു.
6. റിസൾട്ട് വന്ന ദിവസം നിങ്ങളുടെ സഹോദരി പരാജയപ്പെട്ടതിൽ അതീവ ദുഃഖിതയായി വീട്ടിൽ വരുന്നു. ഈ അവസരത്തിൽ അവളോട് നിങ്ങൾ എങ്ങിനെ പെരുമാറും?
- A) അവനവന്റെ തെറ്റ് മനസ്സിലാക്കണമെന്ന് പറഞ്ഞു കുറ്റപ്പെടുത്തുന്നു.
 - B) മത്സരബുദ്ധിയോടെ പഠിക്കാത്തതിലുള്ള കുഴപ്പമാണെന്ന് പറഞ്ഞ് കളിയാക്കുന്നു.
 - C) ഈ റിസൾട്ടിൽ വിഷമിക്കരുതെന്നു പറഞ്ഞ് അടുത്ത പ്രാവശ്യം റിസൾട്ട് മെച്ചപ്പെടുത്താൻ താൻ കൂടി സഹായിക്കാമെന്ന് വാഗ്ദാനം ചെയ്യുന്നു.
 - D) പരീക്ഷയിൽ തോറ്റതിനുള്ള വീട്ടുകാരുടെ ശാസനയെ നേരിടാൻ താൻ കൂടി സഹായിക്കാമെന്ന് വാഗ്ദാനം ചെയ്യുന്നു.
7. നിങ്ങളുടെ ക്ലാസ്സിലെ ഒരു കുട്ടി സ്കൂൾ കോമ്പൗണ്ടിൽവെച്ച് സിഗരറ്റ് വലിക്കുന്നുവെങ്കിൽ നിങ്ങൾ എങ്ങിനെ പ്രതികരിക്കും?
- A) ആ കുട്ടിയുടെ കാര്യങ്ങളിൽ ഇടപെടാതെ മാറിനിൽക്കും
 - B) ഉടനെ ഹെഡ്മാസ്റ്ററെ കണ്ട് ഈ സംഭവം അറിയിക്കും
 - C) ക്ലാസ്സിലെ മറ്റു കുട്ടികളെ വിളിച്ച് ഈ രംഗം കാണിച്ചുകൊടുക്കും
 - D) സിഗരറ്റ് വലിക്കുവാൻ പാടില്ലെന്നും ഇനിയും ചെയ്താൽ ടീച്ചറോട് പരാതി പറയുമെന്നും പറയും.
8. സുഹൃത്തിന്റെ കൂടെ നിങ്ങൾ ഒരു ഇരുചക്രവാഹനത്തിൽ തിരക്കുള്ള റോഡിലൂടെ സഞ്ചരിക്കുകയാണ്. തൊട്ടു മുന്നിലുള്ള വാഹനങ്ങളെ മറികടക്കണമെന്ന വിചാരത്തിൽ സുഹൃത്ത് അതിവേഗത്തിൽ വണ്ടിയോടിക്കുന്ന സാഹചര്യം വന്നാൽ നിങ്ങൾ എന്തു ചെയ്യും?
- A) സുഹൃത്തിന്റെ മത്സരബുദ്ധിയെ പ്രശംസിക്കും
 - B) അമിതവേഗത ആപത്താണെന്നു പറഞ്ഞ് സുഹൃത്തിനെ പിന്തിരിപ്പിക്കാൻ നോക്കും
 - C) സുഹൃത്തിനെ പ്രോത്സാഹിപ്പിക്കും
 - D) അതിവേഗതയിലുള്ള ഹരം ആസ്വദിക്കും

9. നിങ്ങളുടെ സുഹൃത്തിനെ കുറച്ചു സാമൂഹ്യദ്രോഹികളുടെ കൂടെ നിങ്ങൾ കാണാനിടയാകുന്നു. ആ അവസരത്തിൽ നിങ്ങൾ എന്തുചെയ്യും?
 - A) കണ്ടതായി ഭാവിക്കാതെ സ്വന്തം കാര്യം ചെയ്യുവാൻ നോക്കും
 - B) സുഹൃത്തിനെ അടുത്തേക്കുവിളിച്ച് വഴക്കു പറയും
 - C) സുഹൃത്തിനെ പിന്നീട് കാണുമ്പോൾ മുമ്പത്തെ സാഹചര്യത്തെക്കുറിച്ച് ചോദിയ്ക്കും
 - D) സുഹൃത്തിന്റെ കൂടെ ചേരുകയും ഒരുപോലെ പ്രവർത്തിക്കുകയും ചെയ്യും

10. അശോകൻ ക്ലാസ്സിൽ മോശമായി പെരുമാറിയതിനാൽ ആ വിദ്യാർത്ഥി ക്ലാസ്സിലുണ്ടായിരുന്ന മൂന്നു ദിവസം ഹാജരാകാത്തതായി അധ്യാപകൻ രേഖപ്പെടുത്തുന്നു. നിങ്ങളായിരുന്നു അധ്യാപകനെങ്കിൽ നിങ്ങൾ എന്തു ചെയ്യുമായിരുന്നു.?
 - A) അശോകനെ ശിക്ഷിക്കുകയേയില്ലായിരുന്നു.
 - B) ചെയ്ത തെറ്റ് അശോകനെ ബോധ്യപ്പെടുത്തുകയും ഒരു ചെറിയ ശിക്ഷ കൊടുക്കുകയും ചെയ്യുമായിരുന്നു.
 - C) ക്ലാസ്സിൽ മോശമായി പെരുമാറരുതെന്ന് അശോകനെ ഉപദേശിക്കുമായിരുന്നു.
 - D) അന്നത്തെ ദിവസത്തേയ്ക്ക് മാത്രം ഹാജരല്ലെന്ന് രേഖപ്പെടുത്തുമായിരുന്നു.

Section IV

ഈ സ്കെയിലിൽ 18 പ്രസ്താവനകൾ ഉണ്ട്. ഓരോ പ്രസ്താവനയ്ക്കും പ്രതികരണമായി മൂന്നു വൃത്തങ്ങൾ ഉത്തരക്കടലാസിൽ കൊടുത്തിരിക്കുന്നു. യോജിക്കുന്ന പ്രസ്താവനകൾക്ക് 'യോജിക്കുന്നു' എന്നതിന് താഴെ കൊടുത്തിരിക്കുന്ന വൃത്തത്തിലും, പ്രത്യേക അഭിപ്രായമില്ലെങ്കിൽ (നിഷ്പക്ഷത പാലിക്കുന്നു എങ്കിൽ) അതിനുതാഴെ കൊടുത്തിരിക്കുന്ന വൃത്തത്തിലും, വിധേയമാകുന്നുവെങ്കിൽ അതിനുതാഴെ കൊടുത്തിരിക്കുന്ന വൃത്തത്തിലും ഗുണനചിഹ്നം (X) അടയാളപ്പെടുത്തുക.

ഓരോ പ്രസ്താവനയ്ക്കും ഓരോ അഭിപ്രായം മാത്രം രേഖപ്പെടുത്തിയാൽ മതി എന്ന കാര്യം പ്രത്യേകം ശ്രദ്ധിക്കുക.

1. പ്രകൃതിയിലെ വസ്തുക്കൾ സംരക്ഷിക്കുക എന്നത് എന്റെ ഉത്തരവാദിത്വമായി ഞാൻ കരുതുന്നു.
2. പരീക്ഷയിൽ തോറ്റാൽ ജീവിക്കുന്നതിൽ അർത്ഥമില്ലെന്ന് ഞാൻ കരുതുന്നു.
3. ശുദ്ധജലം അമൂല്യമാണെന്ന് ഞാൻ വിശ്വസിക്കുന്നു.
4. വീടും പരിസരവും വൃത്തിയാക്കി വയ്ക്കണമെന്ന് ഞാൻ വിശ്വസിക്കുന്നു.
5. ഏതൊരു പ്രശ്നത്തിലും മറ്റുള്ളവരുടെ അഭിപ്രായം കേൾക്കുവാൻ തയ്യാറാവുന്നത് നല്ല സ്വഭാവമായി ഞാൻ കരുതുന്നു.
6. പശ്ചാത്താപം തെറ്റുകൾക്കുള്ള ആദ്യത്തെ പ്രായശ്ചിത്തമാണെന്ന് ഞാൻ കരുതുന്നു.

7. ജീവിക്കുവാൻ ഏതു ചെറിയ തൊഴിലും സ്വീകരിക്കുവാൻ ഞാൻ തയ്യാറാണ്.
8. പരീക്ഷയിൽ വിജയിക്കുവാൻ ഏതു കൃത്രിമം കാണിക്കുവാനും ഞാൻ ഒരുക്കമാണ്.
9. ആഡംബരവസ്തുക്കൾ ഒരു ശീലമാക്കുന്നത് എനിക്ക് വളരെ ഇഷ്ടമാണ്.
10. ആരോഗ്യം ജീവിതത്തിൽ വളരെ പ്രധാനമർഹിക്കുന്നതായി ഞാൻ കരുതുന്നു.
11. ഗാന്ധിജിയുടെ ജീവിത ശൈലിയിൽ എനിക്ക് ബഹുമാനം തോന്നാറുണ്ട്.
12. ഏതു തൊഴിലിനും മാന്യതയുണ്ടെന്ന് ഞാൻ വിശ്വസിക്കുന്നു.
13. ആളുകൾ മൃഗങ്ങളെ ദ്രോഹിക്കുന്നത് കാണുമ്പോൾ എനിക്ക് ദുഃഖം തോന്നാറുണ്ട്.
14. പ്രകൃതിയിലെ മനോഹര ദൃശ്യങ്ങൾ എന്നിൽ സന്തോഷമുളവാക്കാറുണ്ട്.
15. ജീവിതം വിലപ്പെട്ടതാണെന്ന് ഞാൻ വിശ്വസിക്കുന്നു.
16. മരങ്ങൾ മുറിച്ചുമാറ്റുന്നതിനോട് എനിക്ക് എതിർപ്പാണ്.
17. രക്തദാനം ഒരു മഹത്തായ കാര്യമാണെന്ന് ഞാൻ വിശ്വസിക്കുന്നു.
18. എന്റെ മതമാണ് ഏറ്റവും നല്ലതെന്ന് ഞാൻ വിശ്വസിക്കുന്നു.

APPENDIX II
TEST OF MORAL VALUES

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Section 1

To all the following questions four answers are given as A, B, C, and D. In the Response Sheet for each question there are four boxes as A, B, C, and D. The right answers from the choice given may be selected and marked as 'X' in the corresponding box in the Response Sheet.

Only one answer may be given to each question

- 1 What type of character of a person is shown from his throwing away of wastes here and there?
(A) Truthfulness (B) Indiscipline (C) Lack of Cleanliness
(D) Irresponsibility
- 2 The student who voluntarily agrees to abide by the rules and regulations of the school is.....
(A) Having patience (B) Disciplined (C) Truthful (D) Daring
- 3 How do you assess the character of a person who has disposed of his cow, which died of disease, in a public place?
(A) Selfish (B) Irresponsible (C) Conscientious
(D) Unhygienic
- 4 What character does Raju show by involving in social activities with his friends?
(A) Consciousness (B) Friendship (C) Social Service
(D) Devotion

- 5 Which quality of a family is reflected while they always keep their house and surroundings very neat and tidy?
 (A) Decency (B) Cleanliness (C) Love of nature
 (D) Sincerity
- 6 One who leads a posh life shows his
 (A) Reliability (B) Simplicity (C) Indiscipline
 (D) Extravagance
- 7 A person who is ready to do even a mean job to meet the demands of his own family shows that he is aware of
 (A) Simplicity (B) Daring (C) Dignity of Labour
 (D) Sincerity
- 8 If a student comes late to the school one day without any specific reason, he is not.....
 (A) Aware of the rules (B) Disciplined (C) Punctual
 (D) Doing his duty
- 9 What is really meant by 'Discipline'?
 (A) Abide by law and authorities
 (B) Self-control without any pressure from outside
 (C) Obedience to parents and teachers
 (D) Blindly follow the leader.
- 10 What is meant by 'Non-violence'?
 (A) Do not kill any creature under any circumstances
 (B) Do not be cruel to any living being.
 (C) Do not hurt anybody by thought, word or deed.
 (D) Do not be offensive to anyone under any circumstances.
- 11 What is the correct meaning of 'Cleanliness'?
 (A) Tidy and hygienic surroundings

- (B) Keeping own things neat and tidy
 - (C) Sanitizing surroundings of house and school
 - (D) Keeping clean mind, body and surroundings.
- 12 What is meant by the term 'Freedom'?
- (A) A right to regulate others
 - (B) License to do anything as one wishes
 - (C) Independence from the control of the society
 - (D) Be independent with a consideration for others

Section II

- 1 How can you transform a person who tries to kill his friend for political gains?
- (A) Political ideologies never propose violence
 - (B) Do not stand only for political interest
 - (C) No one has a right to take lives
 - (D) Violence is not the last resort
- 2 An abattoir (slaughter-house) running near your house is creating pollution. Which of the following presents a proper solution?
- (A) Quarrel with the owner of the slaughter house on the issue
 - (B) Prevent people from buying meat from there
 - (C) Presume that this issue is not to be taken seriously
 - (D) Others living nearby are also asked to get involved in the issue
- 3 Sunny and Thomas are two passengers seated side by side in a bus. Though Sunny offered a cigarette to Thomas, he refused as he is not a smoker. Among the under mentioned actions which one should Sunny adopt?
- (A) Sunny lights a cigarette and starts smoking
 - (B) Sunny stands near the door and smokes
 - (C) Sunny keeps cigarette in his pocket and decides not to smoke till he reaches home

- (D) Sunny smokes cigarette by getting down when the bus stops at the next stoppage.
- 4 From the under mentioned moral deeds, which one do you think is relatively more appreciable?
- (A) Sunil brings an injured bird to his home and nurses it till it recovers
- (B) Raju helps a blind person to cross the road
- (C) Ajith gives a ten rupee note to a beggar whom he meets on his way
- (D) Ravi himself cleans the surroundings of his house and school
5. Two brothers quarrel over the division of ancestral property. Both are stubborn to own a particular piece of land. From the under mentioned, which one will you propose as a solution?
- (A) Ask the elder brother to take a decision
- (B) Favour the young brother and give the property to him
- (C) Decide the matter through lot system
- (D) Divide the land equally between the two
- 6 An increase in the incidence of crime in a country is mostly because of.....
- (A) Weak policing
- (B) Inefficient Government
- (C) Lack of morality among people
- (D) Increasing number of poverty-stricken people
- 7 Which deed among the below-mentioned reflects consideration for others more?
- (A) A mother breast – feeds some one else's baby who cries of hunger
- (B) A politician gives up all his wealth to his political party
- (C) A politician gives money and food to tribals out of kindness
- (D) A man voluntarily takes an injured person to the hospital in his own car

- 8 A doctor in a government hospital illegally collects consultation fee from his patients. How will you react?
- (A) Manhandle the doctor with the help of others
 - (B) Lodge complaint to the authorities and ensure further action
 - (C) Organize strike in the hospital to oust the doctor
 - (D) Propagate through the media that the doctor is corrupt
- 9 You come to know about unlawful felling of trees nearby. Which one do you think is the right course of action?
- (A) Bring the matter to the notice of environmental activists
 - (B) Prevent the people from transporting felled trees
 - (C) Organize agitations against unlawful felling of trees
 - (D) Protect the remaining trees and replant those lost by felling
- 10 A person who is not at all interested in social service contests an election. You are aware of the aftermath if he is elected. What course of action do you suggest?
- (A) Do not allow him to be the minister
 - (B) Campaign against him and ensure his defeat
 - (C) Tarnish him by exposing his personal life
 - (D) Assault him physically so that he will not contest

Section III

- 1 Suppose you are riding a two-wheeler. How will you respond if you meet with an accident due to the carelessness of a peddler?
- (A) Assist the peddler in every possible way
 - (B) Convince the people gathered that the accident occurred due to the carelessness of the peddler
 - (C) Escape from the accident spot immediately
 - (D) Abuse the peddler and demand compensation for the damage to the vehicle

- 2 How will you react if the passenger sitting beside you in a bus smokes cigarette?
- (A) Seize the cigarette from him and throw it away
 - (B) Change your seat so that you will not be troubled
 - (C) Request him not to smoke inside the bus, so that others would not be disturbed
 - (D) Complain to the bus conductor and ask to take immediate action
3. Suppose, a few students make noise outside the classroom while the tutor teaches. Their commotion disturbs the tutor. If you were the tutor, what would you do?
- (A) Go out of the classroom and scold them for making noise
 - (B) Ask them to speak quietly so as not to disturb the class
 - (C) Stop teaching immediately and quit the classroom
 - (D) Carry on teaching neglecting the noise outside
4. How will you behave to your classmate who has got communicable disease attends class regularly?
- (A) Advise the student to take rest at home till getting cured
 - (B) Keep yourself away from that classmate
 - (C) Will not permit to conduct classes till that student gets cured
 - (D) Demand the teacher to oust that student from the classroom
- 5 Suppose in an examination your friend asks you the answer to a question. What will you do?
- (A) Tell him a wrong answer
 - (B) Tell him to ask another student
 - (C) Complain to the teacher about your friend
 - (D) Neglect him as it is improper to tell the answer
- 6 Suppose, your sister fails in the examination, how will you react?
- (A) Blame her for her mistakes and incapacity

- (B) Tease her by telling that she failed because she had not been competitive
 - (C) Ask her not to worry much and extend your wholehearted help for a better result next time
 - (D) Promise that you would stand by her to face the other members of the family
- 7 How will you respond if you see that a student of your class smokes cigarette in the school compound?
- (A) Will not interfere with his affairs
 - (B) Bring the matter to the notice of the headmaster
 - (C) Make the other students of the class also know about this
 - (D) Ask him to give up smoking and warn him of reporting to the headmaster if he repeats
- 8 Suppose you are a pillion rider of a two-wheeler which is driven by your friend. If your friend speeds up the vehicle to overtake all other vehicles, what will you do?
- (A) Appreciate the attitude of the friend
 - (B) Discourage the friend telling that over speed is dangerous
 - (C) Share with him the joy of the ride
 - (D) Encourage the friend to ride faster
- 9 Suppose you see your friend in the company of anti-socials. What will you do?
- (A) Mind own business without taking notice of him
 - (B) Scold the friend then and there
 - (C) Advise him later on when he is alone
 - (D) Join his company and be his accomplice
10. Since Ashok misbehaved in the classroom, the class teacher marked him as 'absent' for three days though he was present. What will you do, if you were the class teacher?
- (A) Will not punish Ashok at all

- (B) Make him aware of his mistake and give him a mild punishment
- (C) Mark him 'absent' only for that particular day
- (D) Advise him not to misbehave in the classroom

Section IV

There are 18 statements in this scale. To each statement three responses namely agree, neutral and disagree are given in the score-sheet. Mark your response by putting 'X' in the circle given under your choice.

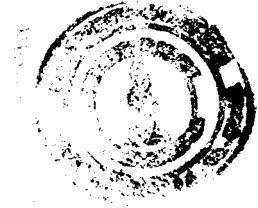
Give only one response to a statement

1. I think that it is my responsibility to protect Natural resources
2. I think that it is futile to live if I fail in examination
3. I believe that water is precious
4. I believe that my house and its surroundings are to be kept neat and clean
5. I think that it is always good to seek the opinion of others
6. I believe that repentance is the first step of remorse
7. I am ready to accept even minor jobs for a living
8. I am ready to adopt any means to pass the examinations
9. I do not mind being extravagant
10. I am of the opinion that health is of extreme significance in life
11. I respect the life style of Mahatma Gandhi
12. I believe that any job has dignity
13. I feel sad to see people being cruel to animals
14. I enjoy the beauty of Nature
15. I believe that life is precious
16. I do not agree with indiscriminate felling of trees
17. I believe that blood donation is a great service
18. I believe that my religion is the best among all the others

APPENDIX IV
SCORING KEY TO THE TEST OF MORAL VALUES

Section I

1.	D	2.	B	3.	B	4.	C
5.	B	6.	D	7.	C	8.	C
9.	B	10.	C	11.	D	12.	D

**Section II**

1.	C	2.	D	3.	C	4.	A
5.	D	6.	C	7.	A	8.	B
9.	D	10.	B				

Section III

1.	A	2.	C	3.	B	4.	A
5.	D	6.	C	7.	D	8.	B
9.	C	10.	B				

Section IV

1.	A	2.	D	3.	A	4.	A
5.	A	6.	A	7.	A	8.	D
9.	D	10.	A	11.	A	12.	A
13.	A	14.	A	15.	A	16.	A
17.	A	18.	D				

A = Agree**D = Disagree**