CHAPTER FIVE
SUMMARY AND FINDINGS OF THE STUDY
5.1. INTRODUCTION

This chapter deals with the summary of findings, recommendations and suggestions for further research in the field concerned.

5.2. SUMMARY OF THE EXPERIMENTAL PROCEDURE

In the present study, an attempt has been made to expose some Discovery Channel programmes related to environment to the children of the age group 12-17 years and to evaluate their effect on the children's knowledge, attitudes and behaviour intentions. This chapter presents the consolidated findings of the study recapitulating the main features contained in the previous chapters. Apart from the major findings emerging from the study, suggestions for further research in the light of the present investigation are also given.

RESTATEMENT OF THE PROBLEM

Nowadays many TV Channels broadcast ETV programmes on different topics suitable for different age groups. The programmes related to Nature and Environment assumes significance due to the current environmental crisis faced by the humanity. It is appropriate to choose the Discovery Channel, as most of its programmes are related to Nature and Environment.

Nevertheless, studies to find out the impact of ETV programmes on the knowledge, Attitudes and Behaviour Intentions are of paramount importance. This is necessary for the successful implementation of any programme and for using these programmes as effective aids in the classroom. It is imperative to ascertain the effectiveness of the Discovery Channel programmes for different economic
groups, for males and females, for different age groups and for children with different TV viewing habits. A study with clearly specified theoretical objectives could take such ideas into consideration.

Being convinced about the significance of the Discovery Channel programmes and its potential to contribute to the solution of the current environmental problems, the present study has been undertaken by the investigator and entitled as "AN INVESTIGATION INTO THE IMPACT OF DISCOVERY CHANNEL ETV PROGRAMMES ON THE ENVIRONMENTAL KNOWLEDGE, ATTITUDES AND BEHAVIOUR INTENTIONS OF THE CHILDREN IN THE AGE GROUP 12-17".

OPERATIONAL DEFINITIONS OF THE TERMS

Impact

It is the net effect of a programme related to behaviour, skills, knowledge, attitudes, values, conditions or other attributes. It is the net effect of a programme or activity, in what participants know, think, or can do; or how they behave; or what their condition is, that is different following a programme (United Way of America).

It is the net effect on some individual, group, organization, or community with a sustained change in status or behaviour that can be attributed in part to the efforts and influences of the agency, programme, or project.
Educational Television

Educational television generally denotes any television used for the education of the community. Educational Television broadcasting is classified into two major categories: 1. Community Educational Television, and 2. Instructional Television. Community educational television programmes are for informing, educating and entertaining the large masses of a country. Instructional Television refers to the programmes for classroom instruction meant for both the formal and non-formal systems of education. The main objective of such programmes is to provide demonstrations involving equipments, demonstration involving complicated and dangerous situations, exposure regarding recent trends and movements, developing various skills like observing, measuring and experimenting, developing desirable attitudes, interests and social values in the learners, developing communication skills, etc.

Programme

A "programme" is a sequence of significant educational experiences with a focus on the main purpose of helping people to improve their lives. The educational programme is aimed at helping people achieve important outcomes or impacts.

A "programme" may be any activity, project, function, or policy that has an identifiable purpose or set of objectives.

Environmental Knowledge

Knowledge is the ability to recognise, recall, understand and evaluate concepts, facts, principles, laws and theories, method, process, structure and setting.
Environmental Knowledge is the knowledge related to pollution, wildlife, extinction of species, natural resources, environment, etc.

Environmental Attitudes

"An attitude is a disposition to react positively or negatively to some object (e.g., a person, place, event, etc.). Attitudes are traditionally composed of two components: a belief about an object and the evaluation of it. Attitudes are thought to be the predictors of behaviour. (Fishbein 1963, Ajzen 1988).

Attitudes about the environment reflect an individual's preferences and values. Pollution, wildlife, extinction of species, natural resources, etc may be considered under the aegis of environmental concern.

Environmental Behaviour Intentions

It is the extent to which the participants are motivated to act or behave in the desirable way. It is specific and has a direction. Behaviour Intentions are what the participants intend to do in relation to the present condition of the natural environment and in saving it.

OBJECTIVES OF THE STUDY

The objectives of the present study are:

1. To identify certain ETV programmes suitable for the children of the age group 12-17 years for experimental treatment.
2. To develop an Environmental Knowledge test for the children of the age group 12-17 years.
3. To develop a scale to measure Environmental Attitudes of the children of the age group 12-17 years.

4. To develop a scale to measure the Environmental Behaviour Intentions of the children of the age group 12-17 years.

5. To examine whether there are any significant differences between the pre-test mean scores of the Environmental Knowledge, Environmental Attitudes and Environmental Behaviour Intentions of the Experimental and Control Groups.

6. To find out whether there are any significant differences between the post-test mean scores of the Environmental Knowledge, Environmental Attitudes and Environmental Behaviour Intentions of the Experimental and Control groups, while treating the respective pre-test score as a co-variates.

7. To find out the significant differences, if any, between the mean scores in Environmental Knowledge, Environmental Attitudes and Environmental Behaviour Intentions of the sub-groups of the Experimental Group with reference to the following variables at the post-test level. 1. Age 2. Gender 3. Parental Profession 4. Parental Income 5. TV watching habits 6. Time spent in Nature.

HYPOTHESES OF THE STUDY

Hypotheses are tentative statements that add directions to the purpose of the study. In this study, the investigator adopted the experimental design and formulated definite hypotheses related to the study on the basis of the theoretical study and observational experience. The following hypotheses were formulated:

1. There exists no significant difference between the pre-test mean scores of the Experimental and Control groups on Environmental Knowledge.
2. There exists no significant difference between the pre-test mean scores of the Experimental and Control groups on Environmental Attitudes.

3. There exists no significant difference between the pre-test mean scores of the Experimental and Control groups on Environmental Behaviour Intentions.

4. There is significant difference between the post-test mean scores of the Experimental and Control groups on Environmental Knowledge, while treating the pre-test score as a co-variate.

5. There is significant difference between the post-test mean scores of the Experimental and Control groups on Environmental Attitudes, while treating the pre-test score as a co-variate.

6. There is significant difference between the post-test mean scores of the Experimental and Control groups on Environmental Behavioural Intentions, while treating the pre-test score as a co-variate.

7. There are significant differences between the mean scores of the Environmental Knowledge of the sub-groups of the Experimental Group with reference to the following variables at the post-test level.  

8. There are significant differences between the mean scores of the Environmental Attitudes of the sub-groups of the Experimental Group with reference to the following variables at the post-test level.  

9. There are significant differences between the mean scores of the Environmental Behaviour Intentions of the sub-groups of the Experimental Group with reference to the following variables at the post-test level.  
LIMITATIONS AND DELIMITATIONS OF THE STUDY

1. There are many channels like Gyan Darshan, National Geographic Hallmark, etc, which broadcast similar programmes on Environmental Education. In the present study, only the programmes on Nature and Environment of the Discovery Channel are taken. Even within the Discovery Channel, the other programmes like History, People and Places and Discovery Health are not taken for the study.

2. The present study deals with only select variables like knowledge, attitudes and behaviour intentions. As far as the categorical variables are concerned, age, gender, parental income, parental profession, time spent in nature and time spent in watching TV are considered. The space and time constraints forced the researcher to limit the variables into a few.

3. The test instruments developed for this study are suitable for the children of the age group 12-17 years. The same instruments may not be suitable for other age groups or other people. Due to the difficulty in preparing the test instruments, the researcher selects only this particular age group.

4. The experimental study is conducted selecting 120 students in the Experimental Group and 120 students in the Control Group. The constraints of the availability of TV, Video instruments, time and finance, administrative hurdles, etc forced the investigator to limit the study to a manageable sample. A large sample with more number of schools and with more variables would have added more dimensions to the study.

EXPERIMENTAL METHODOLOGY

After selecting the problem, framing the objectives and reviewing the related literature, the next important step in research is to explain the details of the
various steps followed in the research design. This chapter presents details regarding the following:

1. Selection and recording of the Discovery Channel programmes to be shown to the children.
2. Experimental design.
3. Construction of tools to measure the environmental knowledge, attitudes and behaviour intentions.
4. Methods of establishing the reliability, validity and item analysis of the tools constructed
5. Selection of the sample for the study.
6. Conducting the experiment and data collection.

The selection and recording of the Discovery Channel programmes to be shown to the children was done with the following steps.

After consulting with the media experts and teachers, the following programmes were selected by the investigator.

1. Sunrise Wild
2. Wild
3. Amazing Animals
4. Discovery Kids
5. Wild with Jeff Corwin
6. Family time Wild
7. Gulsitan.

The programmes are about nature, environment and wildlife. These programmes are specifically made for the young audience of the age group 12-17
years. At the same time they are useful for the older audience and teachers also. Many teachers, parents and experts opined that in the modern age, the children get few opportunities to interact with nature. The easiest way to educate the children in this regard is to expose such programmes to them.

The investigator took great care in choosing the programmes to be shown to the children. The instructional objectives of the programmes, the content and presentation of the programmes, the learners' academic background, local environment, daily life situations, language, occupational status, etc were all taken into account before selecting the programmes to be shown to the children. The investigator made a checklist containing the above said particulars. The investigator formed a team consisting of one media expert, one educationist, 5 teachers and 10 students. The team previewed the programmes and decided the suitability of the programmes on the basis of the criterion given in the checklist. Only those programmes, which satisfied most of the criterion, were finally selected and recorded on CDs.

After selecting and recording the programmes, the investigator attempted for the individual try-out on the representative students for whom the programmes were recorded. The investigator showed the programmes to a group of 30 children from both genders, different economic strata, age groups, parental profession, parental income, time spent in nature and TV watching habits. Some teachers and parents of the experimental site were also shown these programmes. This try-out gave the investigator an opportunity to study the reaction of the learners immediately after the completion of the exposure. On the basis of the feedback received from the
students, teachers and experts, some corrections were made in the programmes. In all the exposed programmes, portions, which contained scenes not suitable to the children of the age group 12-17 years, frames which contained difficult pronunciations, not properly understood by the target audience, were removed by using some video editing software (Adobe Premiere 6.5, Intel’s Video wave, Ulead’s Video Studio 6, etc.). The final list of programmes, which were exposed to the children, is given in the Appendix V.

**EXPERIMENTAL DESIGN**

Pre-test Post-test Random sample design was found to be the most appropriate design for testing the hypotheses in the present study. Pre-test was conducted on both the Experimental and Control groups. Then, the Experimental group was given the experimental treatment and the Control group was not given any such treatment. After that, Post-test was conducted on both the groups. Designs with both pre and post tests must be analysed using Analysis of Covariance. It allows the researcher to co-vary the pre-test measurement with the outcome measurement. The effect of the pre-test measure is removed so that the researcher can just look at the difference between the post-test measurements between the experimental and control groups.

**SELECTION OF THE VARIABLES**

The investigator selected the following process variables (dependent variables), which are believed to be affected by the exposure of Discovery Channel programmes.
1. Environmental Knowledge
2. Environmental Attitudes
3. Environmental Behaviour Intentions

The following variables were selected as the categorical variables (independent variables).

1. Age
2. Gender
3. Parental Income
4. Parental Profession
5. TV watching habits
6. Time spent in nature

CONSTRUCTION OF THE TOOLS

The present study is dealing with nature, wildlife and its habitats. The individual attitude statement items were developed that fit within Kellert’s seven attitude categories: utilitarian, dominionistic, moralistic, humanistic, Ecologist/scientific, naturalistic and negativistic. Some of the items were the modifications of the New Environment Paradigm. In the original Kellert’s scale, each domain consisted of 5 to 6 items. As the present study is dealing with children, the number of items in each domain was limited to 3 to 4. The attitude scale was sent to two experts and their opinions were sought in this respect. In consultation with them, some items were included and some items were deleted. Some wordings were changed, so that the children in Rajasthan can easily understand. On the whole, there are 28 Likert scale items in the attitude instrument.
The positive items were credited with 1=Strongly Disagree, 2=Disagree, 3=Undecided/Neither Agree Nor Disagree, 4= Agree and 5= Strongly Agree. The scoring was reversed for those items which were worded negatively, i.e., 1=Strongly Agree, 2= Agree, 3= Undecided / Neither Agree nor disagree, 4 = Disagree and 5= Strongly Disagree. The scores obtained in all items in a domain for each case (participant) were summed. This number was divided by the maximum possible value for that particular attitude domain (e.g., 16 for a 4-item domain). This standardized score was used for further analysis.

The investigator consulted the school teachers, who were teaching the sections, to identify the concepts which are familiar to the students, on the basis of which the pre-test and post-test knowledge questionnaires were constructed. The investigator constructed a set of 20 questions related to environment and wildlife. The questions were mostly based on testing different skills of the students, i.e., knowledge, understanding, application, etc.

All the items in the Pre-test and the Post-test were of objective type. Each question consisted of four responses, three responses related to the questions concerned and the fourth one 'I am not sure/I don't know'. The correct response was given a score of 1 and all the wrong responses were be given a score of 0. There was no negative marking for selecting a wrong answer. The total score is the sum of the scores of all correct responses. The total normalized score was obtained by dividing the sum by the total possible score, i.e., 20.

The usefulness of any programme is validated by the extent to which it is motivating the participants to behave. For this purpose, the investigator showed
some programmes to the children who took part in the pilot study. After the
exposure, he asked the participants to write, what they intended to do in relation to
saving the natural environment. The items which were referred by most of the
participants were identified and included in the tool. On the basis of the points
written by the children and the experts’ opinion, he developed a scale consisting of
10 items to measure the behaviour intentions of the children in the age group 12-17
years. For scoring purposes, the respondents were asked to answer each statement
on a four point Likert-type response pattern namely: Strongly Agree, Agree,
Disagree and Strongly Disagree.

The responses were credited with 1= Never, 2= To a lesser level, 3= To a
moderate level and 4= To a greater level. In this scale, all items were worded
positively. The sum of scores of all items for each participant was calculated. This
number was divided by the maximum possible value, i.e., 40. This is the
normalized score for that particular participant. This standardized score was used
for further analysis.

For establishing the reliability, and validity of the tools constructed the
following procedure was followed.

A group of 30 children was formed from the sample. The children were
administered the test instruments. The Cronbach’s alpha coefficient was calculated.

The face validity of the present tools was established by the fact that they
were constructed by methods suggested and practiced by eminent men in the field.
To ensure the content validity, the tools developed for measuring the attitudes,
knowledge and behaviour intentions were sent to a panel of jury. Only those
questions that were considered by all reviewers to fit within the research were kept and all others were eliminated. The final test instruments were prepared according to their suggestions.

The completed tests were subjected to a pilot study on a sample of 30 students. Sufficient time for all the testees to attempt every item was allowed in the Pilot study. The immediate purpose of an item analysis is to determine the difficulty and discrimination indices of each item, to be included in the final study. The D-Index method suggested by Valette (1977) and Stanley et.al. (1978) was followed in doing this item analysis, because of its simplicity. Items having highest discrimination indices and difficulty levels between 0.40 and 0.60 were selected. The survived items were arranged according to their difficulty and discrimination indices. The usable items thus selected were assembled in a final form.

EXPERIMENTAL TREATMENT

A group of 240 students of the age group 12-17 were selected from a population of 1000 children. The sample was further divided into two groups of 120 children each. One group was allotted for the experimental treatment and the other for the control purpose. After the Pre-test was over, the experimental group was given 37 hours exposure to the Discovery Channel programmes for with in a span of 17 days. The control group was not given any treatment. After the exposure, both groups were administered a Post-Test. The data related to their socio-economic status were also collected.
5.3. FINDINGS AND CONCLUSIONS OF THE STUDY

The data collected by the investigator were analyzed by using the statistical techniques like Factor Analysis, Independent Sample 't' test, ANCOVA, Regression Analysis and ANOVA. The summary of the various findings of the study are given below.

1. The Attitude Scale consisted of 7 dimensions which should be considered as 7 variables. The Factor Analysis technique was applied to find out any possibility of reducing the number of variables. On the basis of the Eigen values, it was established that the 7 dimension attitude scale was reduced to a 3 Factor model. The three factors were named as Moralistic, Humanistic and Naturalistic Attitudes, Ecologistic Attitudes and Domionistic, Utilitarian and Negativistic Attitudes. The scores obtained in these three factors were considered for further analysis.

2. The 't' test was applied to test the null hypothesis that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Environmental Knowledge.

The 't' value was less than the critical value of 1.96 and 2.576 at .05 and .01 levels of significance respectively. Hence, the null hypothesis has not been rejected and as a result it is concluded that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Environmental Knowledge. This leads to conclusion that both the experimental and control groups are similar in their pre-test scores in Environmental Knowledge.
3. The 't' test was applied to test the null hypothesis that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Moralistic, Humanistic and Naturalistic Attitudes.

The 't' value was less than the critical value of 1.96 and 2.576 at .05 and .01 levels of significance respectively. Hence, the null hypothesis has not been rejected and as a result it is concluded that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Moralistic, Humanistic and Naturalistic Attitudes. This leads to conclusion that both the experimental and control groups are similar in their pre-test scores in Moralistic, Humanistic and Naturalistic Attitudes.

4. The 't' test was applied to test the null hypothesis that there exists no significant difference between the pre-test mean scores of the experimental and control group on Ecologistic Attitudes.

The 't' value was less than the critical value of 1.96 and 2.576 at .05 and .01 levels of significance respectively. Hence, the null hypothesis has not been rejected and as a result it is concluded that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Ecologistic Attitudes. This leads to conclusion that both the experimental and control groups are similar in their pre-test scores in Ecologistic Attitudes.

5. The 't' test was applied to test the null hypothesis that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Domionistic, Utilitarian and Negativistic Attitudes.
The 't' value was less than the critical value of 1.96 and 2.576 at .05 and .01 levels of significance respectively. Hence, the null hypothesis has not been rejected and as a result it is concluded that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Domionistic, Utilitarian and Negativistic Attitudes. This leads to conclusion that both the experimental and control groups are similar in their pre-test scores in Domionistic, Utilitarian and Negativistic Attitudes.

6. The 't' test was applied to test the null hypothesis that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Behaviour Intuitions.

The 't' value was less than the critical value of 1.96 and 2.576 at .05 and .01 levels of significance respectively. Hence, the null hypothesis has not been rejected and as a result it is concluded that there exists no significant difference between the pre-test mean scores of the experimental and control groups on Behaviour Intuitions. This leads to conclusion that both the experimental and control groups are similar in their pre-test scores in Behaviour Intuitions.

7. ANCOVA was applied to test the hypothesis "There is significant difference between the post-test mean scores of the experimental and control groups on Environmental Knowledge, while treating the pre-test score as a co-variate."

The results of the ANCOVA indicate that there are significant differences among the two adjusted means. $F(1,237) = 2481.48$, $p < .001$ and the partial eta square of .913 suggest a strong relationship between Post test scores of the experimental and control groups, controlling for pre-test scores. It has been
concluded that the experimental and control groups differ significantly in their Post-
Test Knowledge scores. So, the hypothesis has been accepted.

This result is in confirmation with the findings of the studies conducted by
the following researchers. Schram et al (1961), Nelson (1963), Thompson (1964),
Blonda (1966), McLuhan (1969), Shukla & Kumar (1977), Paigaonkar (1978),
Sinnathamba (1990), Gupta and Saroha (1990), Behera (1991), Sarangi (1992),
In all the studies, it was reported that the exposure of ETV programmes to the
participants of various age groups had resulted in the improvement in their
knowledge.

The present study is in contrast to the findings of the studies conducted by
Kumata Hideya (1956), Barrington (1963), Ghosh and Sampoornam (1982),
Wankel Mary Jane (1984), Chandra (1986), Martin and Rainey (1993),
Phalachandra (2001) in which it was reported that there was no describable
difference between the experimental and control groups.

The present study is in contrast to the findings of the following studies in
which it was reported insignificant and negative impact of the TV teaching on

8. ANCOVA was applied to test the hypothesis “There is significant difference
between the post-test mean scores of the experimental and control groups on
Moralistic, Humanistic and Naturalistic Attitudes, while treating the pre-test score as a co-variate."

The results of the ANCOVA indicate that there are significant differences among the two adjusted means. $F(1,237) = 176.651$, $p < .001$ and the partial eta square of .427 suggest a relationship between Post test scores of the experimental and control groups controlling for pre-test scores. It has been concluded that the experimental and control groups differ significantly in their Post-Test Moralistic, Humanistic and Naturalistic Attitude Scale scores. The Hypothesis is accepted at .01 level of significance.

9. ANCOVA was applied to test the hypothesis “There is significant difference between the post-test mean scores of the experimental and control groups on Ecologistic Attitudes, while treating the pre-test score as a co-variate.”

The results of the ANCOVA indicate that there are significant differences among the two adjusted means. $F(1,237) = 182.248$, $p < .001$ and the partial eta square of .435 suggest a relationship between Post test scores of the experimental and control groups, controlling for pre-test scores. It is clear that the experimental and control groups differ significantly in their Post-Test Ecologistic Attitude Scale scores. The Hypothesis is accepted at .01 level of significance.

10. ANCOVA was applied to test the hypothesis “There is significant difference between the post-test mean scores of the experimental and control groups on Domionistic, Utilitarian and Negativistic Attitudes, while treating the pre-test score as a co-variate.”
The results of the ANCOVA indicate that there are significant differences among the two adjusted means. $F(1, 237) = 22.479$, $p < .001$ and the partial eta square of .087 suggest a light relationship between Post test scores of the experimental and control groups, controlling for pre-test scores. It is clear that the experimental and control groups differ significantly in their Post-Test Domionistic, Utilitarian and Negativistic Attitudes Scale scores. The Hypothesis is accepted at .01 level of significance.

The investigator had not found any study related to the effectiveness of ETV channel programmes on Environmental attitudes. But, the present study is in confirmation with the following studies, in which it was found that the ETV programmes resulted in the change of general attitudes or attitudes towards ETV. Holtzman (1981), Doneriya (1988), Gupta and Saroha (1990), Sodhi and Sanga (1991) and Behera (1991).

The present study is in contrast to the findings of the following studies in which it was found that there was no significant change in the attitudes of the viewers. Roy Bobby (1979), Martin and Rainey (1993).

11. ANCOVA was applied to test the hypothesis "There is significant difference between the post-test mean scores of the experimental and control groups on Behaviour Intentions, while treating the pre-test score as a co-variate."

The results of the ANCOVA indicate that there are significant differences among the two adjusted means. $F(1, 237) = 159.588$, $p < .001$ and the partial eta square of .916 suggest a strong relationship between Post test scores of the experimental and control groups, controlling for pre-test scores. It is clear that the
experimental and control groups differ significantly in their Post-Test Behaviour Intentions scores. The Hypothesis is accepted at .01 level of significance.

The investigator had not found any study related to the impact of ETV exposure on the environmental behaviour of the participants. But there are many studies in which it is reported that the exposure to the ETV resulted in the change of aggressive behaviour or social behaviour. The present study is in confirmation to the findings of Selvam (1981), Kanade (1982), NIMH (1982), Tannis Williams et al (1986), Talla Mrunalini (1993), MacBeth (1996) and Chandra (1998), in which it was reported that the exposure to ETV programmes resulted in the change of behaviour of the participants.

12. Regression Analysis was conducted to test the hypothesis "There are significant differences between the mean scores of the Environmental Knowledge of the sub-groups of the experimental group with reference to the following variables at the post-test level. 1. Age. 2. Gender 3. Parental Income 4. Parental Profession 5. TV watching habits. 6. Time spent in Nature". The following results were observed.

From the Multiple Regression Analysis and ANOVA, it is found that the 't' values for the variables age and TV watching habits are at < .05 and Pre-Test score is at < .01 level of significance and all other variables are not significant at .05 level of significance. The same result is verified by the standardized Beta values in the table. Except for the above mentioned variables, the Beta values for the other variables are negligibly small. This indicates that the variance in the Post-Test scores is well explained by these three variables and not by the other
variables. This shows that, there are significant differences in the Post-Test knowledge scores of the children exposed to the TV programmes only in these predictor variables. The other variables are insignificant. The hypothesis has been accepted.

There are significant differences between the different age groups. The adjusted mean of the Post-test Knowledge scores of the age group 14-15 years is the highest (.708), followed by that of the age group 16-17 (.689) and the age group 12-13 (.679). This shows that the Discovery Channel programmes are more effective for the age group 14 - 15 years old and less effective for the other age groups. Similarly, there are significant differences among the children with varying TV watching habits. The adjusted mean of the moderate watchers is the lowest (.675) and that of the low and heavy TV watchers is high, (.697). This indicates that, the Discovery Channel programmes are more effective for the low and high watchers and less effective for the moderate watchers. This result is unexpected. As far as the other variables are concerned, there are no significant differences between the sub-groups of the experimental group.

13. Regression Analysis was conducted to test the hypothesis “There are significant differences between the mean scores of the Moralistic, Humanistic and Naturalistic Attitudes of the sub-groups of the experimental group with reference to the following variables at the post-test level. 1. Age. 2. Gender 3. Parental Income 4. Parental Profession 5. TV watching habits 6. Time spent in Nature”. The following results were observed.
From the Multiple Regression Analysis and ANOVA, it is clear that the 't' values for the variables age and Pre-Test score are significant at < .01 level and all other variables are not significant at .05 level of significance. The same result is verified by the standardized Beta values in the table. Except for the above mentioned variables, the Beta values for the other variables are negligibly small and insignificant. This indicates that the variance in the Post-Test scores is well explained by these two variables and not by the other variables. This shows that, there are significant differences in the Post-Test Moralistic, Humanistic and Naturalistic Attitudes scores of the children exposed to the TV programmes only in these predictor variables. The other variables are insignificant. The Hypothesis is accepted.

There are significant differences between the different age groups. The adjusted mean of the Post-test Moralistic, Humanistic and Naturalistic scores of the age group 16-17 years is the highest (.897), followed by that of the age group 14-15 (.881) and 12-13 (.846) respectively. This shows that there are significant changes in the Moralistic, Humanistic and Naturalistic Attitudes of all the children watching the Discovery Channel programmes. Out of all the age groups, the change in the age group (16-17) is the highest and that of other groups are less. This may be due to the fact that this age group is mentally mature to understand the programmes shown in Discovery Channel. The younger children are still slightly immature as far as the moralistic, humanistic and naturalistic attitudes are concerned. This shows that as far as the Moralistic, Humanistic and Naturalistic Attitudes are concerned, the Discovery Channel programmes are more effective for the age group 16-17 years old and less effective for the other age groups. As
far as other variables are concerned, it is equally effective for all the sub-groups of
the experimental group.

14. Regression Analysis was conducted to test the hypothesis "There are
significant differences between the mean scores of the Ecologic Attitudes of the
sub-groups of the experimental group with reference to the following variables at
the post-test level. 1. Age. 2. Gender 3. Parental Income 4. Parental Profession
5. TV watching habits 6. Time spent in Nature". The following results were
observed.

From the Multiple Regression Analysis and ANOVA, it is clear that the 't'
values for the variables age and Pre-Test score are significant at < .01 level and
all other variables are not significant at .05 level of significance. The same result
is verified by the standardized Beta values in the table. Except for the above
mentioned variables, the Beta values for the other variables are negligibly small
and insignificant. This indicates that the variance in the Post-Test scores is well
explained by these two variables and not by the other variables. This shows that,
there are significant differences in the Post-Test Ecologic Attitude scores of the
children exposed to the TV programmes only in these predictor variables. The
other variables are insignificant. The Hypothesis has been accepted.

There are significant differences between the different age groups. The
adjusted mean of the Ecologic scores of the age group 16-17 years is the highest
(.920), followed by that of the age group 14-15 (.884) and 12-13 (.825)
respectively. This shows that there are significant changes in the Ecologic
attitudes of all the children watching the Discovery Channel programmes. Out of
all the age groups, the change in the age group (16-17) is the highest and that of other groups are less. This result is similar in all respect to that of the Moralistic, Humanistic and Naturalistic Attitudes. This also may be due to the fact that this age group is mentally mature to understand the programmes shown in Discovery Channel. The younger children are still slightly immature as far as the Ecologistic attitudes are concerned. This shows that as far as the Ecologistic attitudes are concerned, the Discovery Channel programmes are more effective for the age group 16-17 years old and less effective for the other age groups. As far as other variables are concerned, it is equally effective for all the sub groups of the sample.

15. Regression Analysis was conducted to test the hypothesis "There are significant differences between the mean scores of the Domionistic, Utilitarian and Negativistic Attitudes of the sub-groups of the experimental group with reference to the following variables at the post-test level. 1. Age. 2. Gender 3. Parental Income 4. Parental Profession 5. TV watching habits 6. Time spent in Nature". The following results were observed.

From the Multiple Regression Analysis and ANOVA, it is clear that the ‘t’ values for the variables age, Pre-Test score and gender are significant at < .01 level and all other variables are not significant at .05 level of significance. The same result is verified by the standardized Beta values in the table. Except for the above mentioned variables, the Beta values for the other variables are negligibly small and insignificant. This indicates that the variance in the Post-Test scores is well explained by these three variables and not by the other variables. This shows that, there are significant differences in the Post-Test Domionistic, Utilitarian and
Negativistic Attitudes scores of the children exposed to the TV programmes only in these predictor variables. The other variables are insignificant. The Hypothesis has been accepted.

There are significant differences between the different age groups. The adjusted mean of the Post-test Dominionistic, Utilitarian and Negativistic scores of the age group 12-13 years is the lowest (0.433), followed by that of the age group 14-15 (0.437) and 16-17 (0.444) respectively. From the table, it is understood that the decrease in the mean Dominionistic, Utilitarian and Negativistic Attitudes score of the age group 12-13 is (0.0127), followed by that of the age group 14-15 (0.0089). The decrease in the mean Dominionistic, Utilitarian and Negativistic Attitudes scores of the age group 16-17 is negligibly small (0.002). This shows that there are significant changes in the Dominionistic, Utilitarian and Negativistic Attitudes of all the children watching the Discovery Channel programmes. Out of all the age groups, the change in the age group (12-13) is the highest and that of the age group (16-17) is the least. As this attitude is related to the day to day utilities of the environment, the age group (16-17) could have faced or yet to face the hard reality of life. As far as the negativistic attitudes are concerned, at this age, the children's negativistic attitudes could have decreased and set. This may be the reason for not observing any considerable change in this attitude domain. As this is not the case for the other age groups, there are some considerable changes. This shows that as far as the Dominionistic, Utilitarian and Negativistic Attitudes are concerned, the Discovery Channel programmes are more effective for the age group 12-13 years old and less effective for the other age groups.
In the case of gender, there are considerable changes in the mean Domionistic, Utilitarian and Negativistic Attitudes scores. The change is higher for boys (.0116) than that of girls (.0053). This means that due to the exposure of the Discovery Channel programmes, the mean Domionistic, Utilitarian and Negativistic Attitudes of both genders had decreased and this decrease is more for boys than the girls. This may be due to the fact that the girls have more negativistic attitudes than the boys and this is set from the early childhood. For boys, due to their outdoor activities, this is not the case. So, there are considerable changes in this attitude domain.

16. Regression Analysis was conducted to test the hypothesis “There are significant differences between the mean scores of the Behaviour Intentions of the sub-groups of the experimental group with reference to the following variables at the post-test level. 1. Age. 2. Gender 3. Parental Income 4. Parental Profession 5. TV watching habits 6. Time spent in Nature”. The following results were observed.

From the results of the multiple regression and ANOVA, it is clear, that the ‘t’ values for the variables age and Pre-Test score are significant at < .01 level and Parental Income at .05 level. All other variables are not significant at .05 level of significance. The same result is verified by the standardized Beta values in the table. Except for the above mentioned variables, the Beta values for the other variables are negligibly small. This indicates that the variance in the Post-Test scores is well explained by these three variables and not by the other variables. This shows that, there are significant differences in the Post-Test Behaviour scores.
of the children exposed to the TV programmes only in these predictor variables. The other variables are insignificant. The Hypothesis has been accepted.

There are significant differences between the different age groups. The adjusted mean of the Post-test Behaviour Intentions scores of the age group 16-17 years is the highest (.885), followed by that of the age group 14-15 years (.842) and 12-13 years (.818) respectively. This shows that all the children watching the Discovery Channel programmes are being motivated to act as shown in the programmes. But, the motivation is the highest for the age group 16-17 years old children. This may be due to the fact that this age group is mentally mature to enact what they see or wish. The motivation is the least for the age group 12-13 years old. This shows that as far as the behaviour Intention is concerned, the Discovery Channel programmes are more effective for the age group 16-17 years old and less effective for the other age groups. Similarly, there are significant differences among the children with varying parental income. The adjusted means of both the middle and high income groups are the highest (.844) and that of the low income group is the lowest (.788). This indicates that, the Discovery Channel programmes are more effective for the middle and high income group children and less effective for the low income group children. This may be due to the fact that, the lower income group children may not be motivated to behave according to what they see in the programmes due to their poor financial position. The Discovery Channel nature related programmes emphasize the protection of nature. But, in India, the lower income group is struggling to survive. So, they may not be motivated to protect the nature so seriously. On the other hand, the middle and high income groups may enact according to what they see in these programmes.
due to their higher financial security. As far as the other variables are concerned, there are no significant differences between the various variable categories.

The present study is in confirmation with the findings of *D.K.Kar (1990)*, in which it was reported that the attitudes and achievement are positively correlated.

The summary of the results obtained by the study is given in TABLE 5.1.

**TABLE 5.1**

**SUMMARY OF THE PROCESS VARIABLES AND SIGNIFICANT CATEGORY VARIABLES**

<table>
<thead>
<tr>
<th>PROCESS VARIABLE</th>
<th>SIGNIFICANT CATEGORY VARIABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Pre-test Score</td>
</tr>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>TV watching habits</td>
</tr>
<tr>
<td>Moralistic, Humanistic and Naturalistic</td>
<td>Pre-test Score</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Age</td>
</tr>
<tr>
<td>Ecologistic Attitudes</td>
<td>Pre-test score</td>
</tr>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td>Domionistic, Utilitarian and Negativistic</td>
<td>Pre-test score</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
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<tr>
<td>Behaviour Intentions</td>
<td>Pre-test Score</td>
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<tr>
<td></td>
<td>Age</td>
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<td></td>
<td>Parental Income</td>
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</tbody>
</table>
5.4. EDUCATIONAL IMPLICATIONS OF THE STUDY

1. This study reveals the environmental attitudes, knowledge and the behaviour intentions of the Children. This study also reveals the changes in the attitudes, knowledge and behaviour intentions due to the exposure of media. This study significantly reveals the relationship between the above said variables. The findings of this study will be of importance to the academic and the research community. In India very few studies have been conducted so far in this field. So, this study may help the future researchers to conduct new studies with different settings and variables.

2. This study is very much useful for the teachers, media experts, conservation agencies, educational administrators, curriculum planners and Government. By knowing the attitudes of the children and the media effectiveness, the media experts may modify their programmes, or the teachers may choose the programmes accordingly.

3. Before implementing any environmental programme, it is necessary to identify the attitudes of the people towards it. In the past, many programmes, which were implemented without knowing the attitudes of the people, went unsuccessful. In this respect, this study helps the environmental agencies to identify the attitudes and behaviour of the younger generations.

4. The environmentalism is relatively a new area, in which very few studies have been conducted so far. This study helps the media, which plays a lead role in this matter. By knowing the attitudes of their target audience and the effectiveness
of their programmes, the media experts may alter their programmes accordingly or make new effective programmes.

5. This study will be very helpful to the teachers and educational administrators also. The teachers, who are in direct contact with the children, may know the effectiveness of the programmes and accordingly utilize and recommend them. The teachers may utilize these programmes in their day-to-day classroom activities on the basis of their effectiveness. For the children and their parents also, this study will be of immense help. The children may be recommended to watch the programmes, which are effective and useful to them.

6. Environmental Education has not been introduced in the curriculum as a subject. It is being taught in the school as a part of the general science. But, the Delors Commission recommends giving more importance to the Environmental Education, as the world has witnessed severe environmental degradation in recent times. The curriculum planners may find this study useful, for they may introduce new curriculum on environmental education on the basis of the findings of this study.

7. Finally this study may serve the whole of humanity in developing a positive and right type of attitude, knowledge and behaviour towards Environment and animals. The Delors Commission says, "It is the primary duty of everyone to pass the world in a better condition to the future generations". In this respect, the present study may shed new light on the present environmental conditions and help the people to improve it.
5.5. RECOMMENDATIONS

In the light of the above findings, the investigator wishes to make the following recommendations.

1. There is significant improvement in the Environmental knowledge of the children exposed to the Discovery Channel programmes on Nature and Environment. This shows that the programmes are really effective. Providing the knowledge about the present deteriorating situation of the environment to the younger generation is one of the most important duties of every individual or institution. In the present situation, media, particularly Discovery Channel can play an important role. It is recommended that every educational institution should show, or at-least recommend the programmes of the Discovery Channel to their students. This will definitely enable the younger generation to know about the present conditions of the environment and thus help the Government and Agencies which fight solving the environmental problems.

2. As for as the attitudes are concerned, there are considerable changes in all the Attitude domains. Continual exposure of the Discovery Channel programmes may result in the positive and desirable attitudes of the people. This finding will be of very much use for the planners, policy makers and producers. In future, before implementing any environmental programme, care should be given to find out the attitudes of the people.

3. There is considerable increase in the Behaviour Intentions scores also. The Discovery Channel programmes should be shown through the community
television sets to all kinds of people. This will help in developing the correct attitudes and behaviour among the people towards the environmental issues.

4. As far as the Environmental Science is concerned, the children learn about them as part of the Science curriculum. The syllabus can not cover all the details. School authorities and teachers should be encouraged to use the programmes of the Discovery Channel and National Geographic Channel as aids in educating the children.

5. The Discovery Channel has a wide variety of programmes on various topics at different levels. It gives teachers' notes, activities guides, etc. It is conducting quiz programmes also for school children. The teachers may use these programmes as educational aids, or assignments. They may use them for group discussion, seminar, etc. After viewing these programmes, quiz may be conducted at class or school levels.

6. The teachers should encourage the students to view the useful programmes shown in the Discovery Channel.

7. Such research should be undertaken by the researchers and teachers at various settings. This may yield useful results.

5.6. SUGGESTIONS FOR FURTHER RESEARCH

1. The present investigation was attempted with a sample of 240 children. If a larger sample with a wider area could be chosen in a further study, it will substantiate the validity of the findings.
2. The present study was conducted in a single place. If the same study could be conducted at different places, the results of the study may be generalised for the whole country.

3. There are many ETV channel programmes available in India now. The investigator has selected only the Discovery Channel programmes for his study. In Discovery Channel programmes also, he has selected the programmes related to nature and environment. But in Discovery Channel, there are other programmes related to Health, History, etc. In future, the researchers are recommended to take these programmes also and find their effectiveness.

4. In the present study, the investigator has taken the cognitive variables like Knowledge, Attitudes and Behaviour Intentions. The author feels that these are the most important ones in deciding the worthiness of any programme. But the other variables like reactions, reasoning, creativity, problem solving, etc also can be taken in future studies.

5. In the present study, the programmes in the English language only are taken for study. But research had found that the language is one of the major factors in deciding the effectiveness of any programme. If the programmes are in the mother tongue of the participants, their effectiveness may increase. So, in future, studies may be taken to find the effectiveness of the programmes in the mother tongue of the participants, or comparative studies may be taken to compare the relative effectiveness of the programmes in English and other regional languages.
6. The investigator has taken the children in the age group 12-17 years. The reason for this selection is that the children in this age group are more or less homogeneous. Single measuring instruments are enough to conduct this study. The future researchers are recommended to take different age groups and study the effectiveness of the programmes.

7. The investigator has not taken into consideration about the format, presentation and other audio-video qualities of the programmes into concern. In future, researchers are recommended to take them also into consideration.

5.7. CONCLUSION

The present study is a step towards finding out the impact of the Discovery Channel programmes on the Environmental Knowledge, Environmental Attitudes and the Behaviour Intentions of the children in the age group 12-17. Watching the Discovery Channel programmes makes considerable changes in the knowledge, attitudes and the behaviour intentions of the children. The results of this study are very useful to the students, educators, media experts, policy makers and the people concerned with the conservation of the environment. Utilizing the programmes of Discovery, National Geographic, etc and encouraging the people to watch them will definitely help in conserving the environment and make the world a better place to live.