CHAPTER VI

FINDING, CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH
The time has come, "the Walrus said, "To talk of many things", yes, look back into what has been done is necessary at this stage to understand the relevancy of this venture. However, valid, reliable and adequate the data may be it does not serve any worthwhile purpose unless it is carefully edited systematically, classified and intelligently interpreted and rationally concluded. This chapter deals with the major findings of the study, conclusions and implications for research in multimedia and recommendations for future research in this field.

6.1 FINDINGS OF THE STUDY

1. No significant difference was found in achievement scores of experimental group and control group at pre-test score that is, both the groups were found to be similar in respect to their achievement scores.

2. It was found that the subjects exposed to Multimedia Learning Method achieved higher on achievement test in comparison to those exposed to traditional method of teaching.

3. It was found that the subjects exposed to Multimedia Learning Method achieved significantly higher mean gain score of achievement test in comparison to those exposed to traditional method of teaching.

4. No significant difference was found in the attitude scores of experimental group and control group at pre-test score that is, both the groups were found to be similar in respect to their attitude scores.

5. It was found that the subjects exposed to Multimedia Learning Method achieved higher on attitude scale in comparison to those exposed to traditional method of teaching.
6. It was found that the subjects exposed to Multimedia Learning Method achieved significantly higher mean gain score of attitude test in comparison to those exposed to traditional method of teaching.

It can be concluded from the above findings that MMP learning significantly improved the score of Sixth grade students of the experimental group in their achievement and also in their attitude towards Environmental science.

6.2 CONCLUSION

Multimedia plays a major role in the field of education due to its multi-sensorial approach. It offers opportunities for learners in every aspect and also plays a vital role in improving students' academic achievement. The effectiveness of Multimedia Package over traditional method of teaching has been established through the present study.

Based on the analysis of data and interpretation of results, a set of findings and conclusions can be drawn and on the basis of their discussion, a wide range of implications and suggestions also need to be focused on for further research in the field related to this study. Some of the significant possibilities and provisions in terms of findings of this piece of research may be as follows:

(i) The results arrived at during this study show that the post test for achievement means scores of the experiment and control groups, differ significantly in favour of the experimental group. This implies that the elementary class students who were taught Environmental Science through Multimedia Package show significant improvement in their achievement in this subject than the elementary class students who received instruction through the traditional method. It suggests that Multimedia Package is effective and contributes towards raising the achievement of elementary students in Environmental Science.

(ii) The group of elementary students taught Environmental Science through, Multimedia Package show significantly higher mean gain in attitude scale than the group of elementary students taught Environmental Science through traditional method.
The method of Multimedia learning proves more meaningful and effective than the traditional classroom learning strategy. The conclusion of the study needs also to be expressed in terms of their global importance for educational purposed vis-a-vis the tested hypotheses of the study.

Prima-facie, the main focus of the study addresses the multi-sensorial approach of the innovative learning process (Multimedia Learning Package) and its impact on education for sustainable development of each and every individual learner in a school situation which is deemed to be a miniature technology based society in itself. The two fold fundamental variables of the study obviously include:

(a) The learning strategy, especially the Multimedia Package.

(b) The learning outcomes, in terms of Cognitive and Affective domain.

The result of the study can be interpreted in the context of global perspectives of education expected by world organizations like UNESCO. In the Multimedia Digital Learning Conference held in United States in August, 2006 in which countries like USA, India, Japan, England, Germany and global organizations like UNESCO participated, applauded multimedia as an innovative delivery model for Education, which has made landmark contributions to the cause of education. This global accolade of multimedia provides a robust platform to Multimedia Package based learning designed meticulously to meet the emerging challenges of a new world order through the process of education.

6.3 DISCUSSION OF RESULTS

The present study was conducted to find out the effect of Multimedia Learning method and traditional learning method on Sixth grade students in relation to their Academic achievements and attitude towards Environmental science.

Findings of the study clearly indicated that MMP learning method can be perceived as big chance for education and there is a lot of scope for research in this field. This can actually help in uplifting the quality of education, so educationists need to develop more sophisticated understanding of condition,
circumstances, means and mechanisms through MMP learning. Many researchers were concerned with studying the influence of the use of multimedia on the students’ academic achievement and their attitudes. The present findings of this study is also in consonance with the finding of the Ila Mariss (1980) who conducted a study entitled as “Comparison of the student’s success & change of attitude as a result of two different educational cases”. The study aims at comparing the efficiency of the teacher’s traditional explanation and the multimedia method in the students’ academic achievement and their attitudes. The results are: the academic achievement of the experimental group students rose as a result of using the multimedia group as there were statistically-significant differences of the average achievement in favor of the experimental group students who used the multimedia group. Similarly Callaway (1997) in his study, found that the impact of using the computerized program of a multimedia structure on students’ cognitive traits and the educational methods which were ignored in the traditional method. The study showed a statistically-significant difference in the average marks of the experimental group and the control group in favour of the experimental group which studied using the multimedia method. During this study it was observed that there is a need of strengthening Multimedia Learning method as this method is very useful to enhance the Academic achievements of the students’. The finding of present study is in consonance with the study of Allen (1998) who conducted a study to find out the efficiency of multimedia software in the academic achievement of a sample from Texas University in the microorganism curriculum, their knowledge retention, and their attitudes toward using multimedia computers in teaching the microorganism course. The 16-week study result uncovered statistically-significant differences, in the academic achievements, knowledge retention & attitude toward computer, in favour of the experimental group which studied using the multimedia method over the control group which studied using the traditional method.

Likewise Abu Yunis (2005) concluded that Multimedia Learning method tend to promote student achievement more than they do under the traditional setting. In his study entitled “The effectiveness of multimedia software to teach Geometry in the second grade of preparatory schools” aimed at identifying to what extent multimedia software helps in the academic achievement of the preparatory school students in the subject of Geometry and its remembrance. The results showed significant statistical differences in the average of academic achievement of the experimental and control groups in the test conducted after the experiment in favour of experimental group.
The purpose of the present study was also to see the effect of multimedia learning method and traditional learning method on attitude of the students towards environmental science. It was found that students taught through multimedia package shows more positive attitude towards environmental science as compared to the students taught through traditional learning method. The previous studies show that most experimental studies stress the effective use of multimedia as a facilitating strategy, it helps in delivering the educational material to students easily and it plays a positive role in enhancing the general trend toward the use of multimedia in education. Multimedia has a positive impact on cognitive achievement, academic achievement, comprehension and application.

The current study is an attempt to support the previous studies in using the experimental method in studying variables. Perhaps this study will reach scientific results over research ethics in the field of using multimedia software, it helps in revealing the importance of computer in students’ academic achievement to the subject of “computer and its uses in education” and also it stimulates the activation of multimedia use in academic teaching.

6.4 EDUCATIONAL IMPLICATIONS

The present research clearly shows that in changing from a traditional “chalk and talk” method to a Multimedia Package enriched class, elementary class students’ achievement does not diminish; rather it significantly improves. It implies that MMP proves to be more tangible in its effectiveness on achievement than the traditional classroom approach. Multimedia Package proves to be more practical and widely acceptable to teacher.

- Multimedia package helps the teachers to make his/her learning process totally interactive.
- MMP suggests a new role for the teacher—the role of a Facilitator. A teacher accustomed to being the sole source of information for teaching the passive learners in the classroom, has to change to be a facilitator in the learning process to actively encourage the student to learn in a more effective manner, participate in discussion, participate in making of MMP and give textual, audio, video, graphical and animation input for Multimedia Package. So students feel being a part of the entire teaching learning process.
• The study has important implications for teacher education. Given the current widespread use of Multimedia Learning globally at all levels and for all the subjects, it is imperative that teachers should learn this new technology. The teachers should understand how to develop and run MMPS. The pre-service training may be given to teachers in the making and in-service training to the existing teachers.

• MMP learning sessions in class may act as a source of edutainment (education plus entertainment) as well. The sessions may include games, recreational activities like solving puzzles and riddles, holding group discussions on some general topics related to current affairs to create more interest among elementary class students. So teacher becomes more resourceful and classes get livelier.

• Important skills such as creative thinking, critical analysts and the synthesis of knowledge can easily be accomplished through MMP based learning in the classroom.

6.5 SUGGESTIONS FOR FURTHER RESEARCH

The present study brings light to a number of new areas to be covered by future researchers. The following problems, if studied would help to broaden the perspective of the present study.

• Research is needed to replicate this study using MMP with different contents areas.

• Further research is needed to replicate this study with a large number of students to see if MMP will yield similar results.

• Further research is needed to study the use of MMP for longer periods of time.

• This study was conducted with elementary class students, further research is needed to study the effect of MMP on other class levels.

• There is need to compare MMP learning with other methods of instructions at different grade levels.

• This study can be repeated on a large sample for validation and for a longer duration to examine the effects on non-cognitive variables like
social skills self-esteem or some other personality variables which take more time to bring about a change.

- The study was tested for teaching of Environmental Science for elementary class students. This may be done for other subjects and at all levels of education.
- Research is needed to compare the combination of various mediums/elements (text, audio, video, animation and graphics) of MMPs i.e up to what extent a medium is superior to others.
- There is need to study the integrated effects of MMP with other institutional treatments. Also research is needed to study the role of MMP as a compliment to traditional method of teaching.

Research may be conducted to study the impact of Multimedia project on student’s learning in various subjects/levels i.e. for subjects other than Environmental Science and for various levels as well. Research is needed to study the effect of MMP on Special groups of children such as gifted students, students with learning difficulties and other special needs.

6.6 OVERVIEW

Findings of the study clearly indicate that Multimedia can be an effective teaching tool for environmental science to elementary students and it can augment learning and understanding of students and there is lot of scope for research in this field. MMPs method can revamp the traditional teaching learning process and can replace it depending on material resources in the educational institutions. The findings suggest that multimedia can play a vital role in teaching of Environmental Science, so educationists need to develop more sophisticated understandings of the conditions, circumstances, means and mechanisms through which multimedia can be closely connected to the elementary students and their classrooms.