CHAPTER-VI
CONCLUSIONS, EDUCATIONAL IMPLICATIONS
AND SUGGESTIONS FOR FURTHER RESEARCH

6.0.0 INTRODUCTION

The ultimate purpose of the study was to draw out valid conclusions which can be generalised within the limits to other situations and other sample of the population. Thus after analysis and interpretation of data in the previous chapter some conclusions were drawn. This chapter is devoted to the findings, conclusions, educational implications and suggestions for further research.

6.1.0 FINDINGS RELATED TO OPINION OF EXPERTS ABOUT MULTIMEDIA PACKAGE

- 90% of the experts were of opinion that the content of the multimedia package was strictly accordingly to prescribed syllabus by CBSE, New Delhi. They further agreed that the objectives were concise specific and stated in behavioural terms

- 90% of the experts appreciated the level of language and found it grammatically correct and according to the level of the learners.

- 90% of the experts appreciated the content, which is divided in topics and sub-topics and is pedagogically structured and presented in well organized sequences.

- 80% of the experts were of the opinion that there is proper balance between verbal and pictorial components of multimedia package and it is durable also.

- 80% of the experts were of the opinion that screen design promotes interaction between content and learner and also helps to navigate from one topic to another.
70% of the experts were of the opinion that selection of the colours was adequate and consistent throughout the package. They also appreciated the synchronization of sound, visual and animation.

According to 80% of the experts the overall quality of multimedia package is good whereas 10% disagreed and remaining 10% could not decide. They agreed that this package will be effective for teaching Economics to students of 10+1 class.

6.2.0 FINDINGS RELATED TO EFFECTIVENESS OF MULTIMEDIA PACKAGE

1. It has been found that there was no significant difference in achievement of control and experimental group at pre test stage. This leads to conclude that before experiment both groups were similar in performance.

2. The post test achievement scores of control and experimental group were compared by using ‘t’ test. A significant difference was found in both the groups. The achievement of the students of experimental group was found to be higher as compared to achievement of control group. So it can be inferred that students who were taught Economics by using multimedia package showed significant improvement in achievement than the students taught by conventional method.

3. There was a significant difference in pre-test, post-test mean achievement test scores of students of experimental group who were exposed to multimedia package. The students of experimental group scored much higher in post test as compared to their pre-test scores. It can be concluded that multimedia has enhanced the achievement of experimental group.

4. Significant difference was also found in pre test and post test mean achievements scores of students of control group who were exposed to conventional method of teaching. It was found that this method also helps to increase the achievement of students in Economics to some extent.

5. The mean gain achievement scores in Economics of experimental and control group differed significantly in favour of experimental group. This means that
students who were taught Economics by multimedia package showed significant improvement in their achievement than the students taught by conventional method.

6.3.0 CONCLUSIONS

Information and communication technology has been playing very important role in present scenario. Impact of ICT on education and specially in class room teaching has increased during the last ten years. The use of computers, projectors, internet, web designed programs, CD-ROMs etc. has been increasing day by day among teachers and students. These technologies not only enhance students performance but they help the students to be more interactive and engaged and get immediate feedback. The effectiveness of multimedia packages over the traditional method has been established through various researches. The purpose of the present study was to ascertain the effectiveness of multimedia package for teaching Economics to students of 10+1 class. The findings of the study revealed that the use of multimedia package is more effective as compared to conventional method of teaching to enhance the achievement of the students. The findings of the present study are also supported by the studies conducted by Morningstar (1968), Kock (1973), Magidson (1978), Robyer (1988), Najjar (1996), Villamll & Molina (1998), Wang and Slemar (1999), Munir, McCrea and other (2000), Urdan and Weggen (2000), Lachs (2000), Mishra (2003), Low et al (2003), who also found that teaching learning process by multi media is more effective. Harper & Hedberg (1997), Sims (1998), Shinde (2003) have shown that an interactive learning environment can generate effective instruction and learning. The studies conducted by Ahmed (2013) Khusnir, Munzhula & Volka (2013), Adeyemi (2012) Abdallah (2012), Semra (2012), Bindal & Sharam (2013) have also found that computer assisted instruction and web based multimedia programmes have been effective as compared to the conventional method of teaching.

6.4.0 EDUCATIONAL IMPLICATIONS

Research studies are conducted with a view to augment knowledge in the concerned field, thereby building new principles and theories. The present study was conducted to develop and validate multimedia package in Economics and to study its
effect on students’ achievement. A perusal of the present study makes it evident that students learn better when exposed to multimedia package as compared to conventional method of teaching Economics.

The findings of present study have a bearing for researchers, educational planners, policy makers, government, principals, teachers, ICT experts and other personals related to teaching profession. The educational implications of present study are mentioned as under:

1. The findings of present study will serve as a basic data for research scholars of education for undertaking research work related to multimedia packages development and other related areas like CAI, CBL CML, Web based teaching, and development of different contentware of different subjects for different levels.

2. The use of computers in education in the present scenario is not a take it or leave it option. The computers will impinge on education the only question is how? There is increasing recognition that now learning is more than just transfer of knowledge and students are active participants in their own learning process and not passive recipients of information only. The traditional methods are not sufficient now a days. So Govt. of India and especially Govt. of Haryana has initiated the process to include computers in teaching learning process. The Haryana Govt. has set up computer labs in all high and senior secondary schools and is providing computer teachers. But there is not enough information about coursewares or products. The coursewares related to different subjects for different classes are not adequately prepared or provided to schools. So the state government should take initiative to get the coursewares developed in collaboration with different agencies like NCERT, SCERT, IGNOU, CIET etc. The government agencies and other producers and intermediaries should provide the catalogues to show products.

3. By only introducing computer education as a subject in schools will not be useful until and unless it is not integrated with the teaching learning system at different levels. The instruction should be supplemented by using multimedia packages and others computer mediated teaching where teacher acts as a
facilitator or guide for an interaction between students and computer. But at present most of teachers are not well acquainted with the procedure and use of computers during teaching. A study conducted by Mehra (2007) revealed that teachers possess fairly positive attitude towards computers but majority of teachers needs to be provided training for using computers in educational setting. So the state government and other agencies should make arrangements for providing training to teachers for developing and using multimedia package in their concerned subjects.

4. By making policy we can encourage the use of information communication technology in schools but ICT should be used in teaching learning context. Initiation and motivation has to be provided by school heads and management with the help of professional developers of multimedia packages in various subjects, as resource persons and the interest has to be reflected by teachers. The government should provide financial assistance to schools for development of these multimedia packages as per their requirements. The government should also give incentives to those teachers who are doing good jobs in their field so that other teachers may also be encouraged and motivated.

5. Use of ICT based multimedia packages can not be imposed forcefully or legislatively for teachers. By only providing infrastructure and computers in schools is not the only solution. We will have to provide social environment where teachers can talk face to face with technical experts and discuss their experience and problems faced by them during developing and using multimedia package.

6. The findings of present study reveal that the students who were taught Economics by using multimedia package exhibited higher achievement as compared to those who were taught Economics by using a traditional method. Therefore, efforts should be made by teachers to create a suitable environment in class room so that students may be motivated to participate in learning with understanding. In the course of different subjects, proper guidance should be
provided to the teachers about the effective use of ICT based teaching learning.

Teacher education institutions play an important role in producing competent and trained teachers. In the present age of ICT, the curriculum of teacher education programme needs to be restructured. Now some universities have introduced ICT enabled practical in teacher education programme. As the findings show that teaching with multimedia packages enhance achievement. So pupil teachers should be provided training how to integrate ICT in their teaching subjects. These institutions can tie up with some professional organizations. Although National Council for Teacher Education (NCTE) in its recent norms and standards (August, 2009) has recommended to appoint and maintain the services of at least one teacher educator with specialisation in ICT, yet it would remain a distant dream until the related universities try to strictly enforce the same.

The State Government Department of Education may organise workshops and seminars for teacher educators who are working in Collages of Education, DIET, SIT so that they can persuade the pupil teachers for developing and using multimedia and other computer based programmes.

The local experts should provide time in developing softwares related to different subjects according to the syllabus of concerned boards. They should motivate and reinforce teachers to develop such programmes as per their needs and requirements.

6.5.0 SUGGESTIONS FOR FURTHER RESEARCH

Due to paucity of time, and resources at the disposal of investigator, all aspects of the present problem could not be studied. Therefore, the present study opens up certain avenues for further research which are given as under:

1. The present study was confined to 60 students of 10+1 class of Major Bihari Lal Memorial Senior Secondary School, Bilaspur Chowk (Gurgoan). Further studies can be conducted on larger sample taken from different districts of Haryana.
2. The study was confined to teaching four units only. Further studies may be conducted on teaching the whole syllabus by using multimedia package and its effectiveness may be studied.

3. The present study was delimited to development and validation of multimedia package in teaching Economics to XI grade students. Similar studies may be conducted on students of XII, high school, degree classes and other professional courses.

4. Further studies may be conducted on students of different types of schools like government schools, Kendriya Vidyalays, Navodaya Vidyalays and public schools.

5. The present study was conducted to compare the effectiveness of teaching with multimedia package and traditional method. Further studies may be conducted to compare its effectiveness with other teaching methods like project method, discussion method and problem solving method etc.

6. Further studies may be conducted to compare the effectiveness of teaching with multimedia package and other CAI like tutorials, drill, practice session, games and simulation individually.

7. The present study was confined to compare the effectiveness of teaching with multimedia in Economics. Further studies may be conducted to develop, validate and use of multimedia package in teaching other subjects like Science Mathematics, Geography, History and Computer Science etc.

8. The present study was confined to students belonging to rural area background only. Further studies may be conducted to compare achievement of students of rural and urban background.

9. The present study was to develop and validate a multimedia package and studying its effects on student’s achievement in Economics. Further studies may be conducted to see the effect of multimedia package on other variables like attitude, self concept, creativity, problem solving and decision making etc.
10. The further studies may be focused upon different dependent variables such as learning related behaviour (co-operativeness, motivation, reflection, time devoted to learning etc.), thinking and learning styles.

11. Further studies may be conducted by moderating different students’ achievement such as prior achievement, aptitude, ability, age, personality, gender, social class etc. to compare multimedia using teaching and traditional instruction.

12. The study was conducted by using ‘Quasi Experimental’ method. Further studies may be conducted by using pure experimental method and using randomised sample.

13. Further studies may be conducted to study the attitude of teaching towards development and using multimedia packages as an instructional method.

14. The present study was conducted to develop and see the effectiveness of multimedia package on students’ achievement in Economics. Further studies may be conducted to study different problems faced by teachers during development and use of multimedia package in teaching.

15. The present study was confined to development and use of multimedia package and compare its effectiveness with traditional method. Further studies may be conducted to compare its effectiveness with edusat programmes and teleconferencing programmes of teaching.

16. Studies may also be taken up to know the cost benefit analysis of educational multimedia packages, their development and use.

17. Further studies may be conducted to study the attitude of principals, higher authorities and management of schools towards using multimedia packages in teaching learning process.

18. Further studies may be conducted to study the attitude of students towards learning using multimedia packages in teaching.