CHAPTER V

SUMMARY

Caption no.	Particulars
5.0.0	INTRODUCTION
5.1.0	RATIONALE
5.2.0	RESEARCH QUESTIONS
5.3.0	STATEMENT OF THE PROBLEM
5.4.0	OBJECTIVES OF THE STUDY
5.5.0	HYPOTHESIS
5.6.0	DEFINITION OF TERMS
5.7.0	OPERATIONAL DEFINITION OF TERMS
5.8.0	DELIMITATION OF THE STUDY
5.9.0	METHODOLOGY
5.9.1	**Population**
5.9.2	**Sample**
5.9.3	**Tools for Data Collection**
5.9.4	**Development of Multimedia Package**
5.9.5	**Procedure of Data Collection**
5.9.6	**Procedure of Data Analysis**
5.10.0	MAJOR FINDINGS OF THE STUDY
5.11.0	SUGGESTIONS FOR THE FURTHER RESEARCH
5.12.0	CONCLUSION

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5.0.0 INTRODUCTION

Social Studies / Social Science is a discipline that is very vast and in fact as wide as the world itself and as lengthy as the history of man on this earth. Michaels (n.d.) specified "The breadth of Social Studies programme should provide for a variety of experiences so that the child's learning will be well-rounded and well balanced. It should also be possible to draw upon other fields of learning so that significant problems can be considered in the light of their ramification; a narrow compartmentalized programme limits social learning". The importance of Social Science has been felt worldwide for the purpose of social reconstruction and development of the mankind. One of the subjects taught in Social Science is Geography which helps the children to understand their own earth, its characteristics and the interdependence of earth with the society. Geography has huge importance in the teaching of Social Studies. Geography occupies a unique position in the school curriculum, standing as it does transitionally yet centrally between the Natural Sciences, the Social Sciences and the Humanities. Geographic knowledge is demanded for existence and progress in today's modern world that retrospect faster change with the utilization of the environmental resources in exhaustible manner, thereby affecting the natural balance on the earth. Individuals are expected to be sensitive and react wisely to the number of changes taking place in the physical and natural aspects on the earth. Improving geographical knowledge and skills is important to our nation and its future. Hence the proper transaction of the knowledge of Geography is important for all students.

In the technology driven society, textbooks are still seen as an integral part of most education systems and serves as bridges between teachers and students. Our process to teach Geography is general routine, teacher centered and authoritative stressing upon rote learning. The learners accumulate a substantial amount of non-functional and unrelated

facts which are promptly forgotten as it becomes very difficult for the children to link the provided knowledge to their life. Thereby making it ineffectual and boring for the students.

In the present world of hyper-technology, where change leads the life, there is desired need to bring drastic changes in the way the knowledge of Geography is imparted to the children. Children have to be exposed to new approaches and methodology to transfer to a great extent the abstract knowledge of Geography for them to understand the Geography of the earth on which they live and to develop interest and attitude.

In order to improve the effectiveness of teaching in Geography, application of computer based multimedia technology is inevitable to get best results as no longer teaching Geography is learning-by-heart countries, capitals and crops. To help the children to grasp the human aspect of the relationship between man and his home, the earth, the moving pictures are of greater value than the still, though both have their place. The excitement inherent in the movement acts as a stimulus to imagination and hence helps to extend experience. Geography provides a rich and varied context for the use of new technologies to enhance both learning in the subject and to reinforce existing ICT skills. It can help pupils investigate, organize, edit and present geographical information in many different ways and so ICT have important role to play in Geography.

The CD-ROMs can be prepared by subject experts and multimedia professionals, to fill in this vital need. The textbook can be accompanied with the CD-ROM that can be written in simple language and well designed to facilitate the learning process. Readily available CD may not suffice the purpose of teaching learning. Tailor made packages according to the need of syllabus can prove to be more worthy. Though Indian Schools have started the involvement of such packages in schools but are insufficient according to the requirement. There is scope for teachers to initiate the development of such multimedia packages.

Considering these scope of technology particularly, multimedia technology in the field of teaching Geography, the researcher took the help of multimedia technology in preparing a package to teach Geography to standard IX CBSE affiliated school students and further made an attempt to assess and measure its efficacy.

5.1.0 RATIONALE OF THE STUDY

Social Studies, is the study of society and its aim is to help pupils to understand world in which they have to live and how it came to be, so that they may become responsible citizens. It aims at promoting critical thinking and a readiness for social change, at creating a disposition for acting on behalf of the general welfare, at an appreciation of other cultures and a realization of the inter-dependence of man and nation. The subject of the Social Studies which deals directly with man and the society in which he lives, carries special responsibility of preparing young children to become well informed, constructive participants in society and capable of developing healthy social relationships. Social Studies helps students to develop social relationship, social efficiency, objective attitude, citizenship training, constructive and critical thinking, integrated knowledge, intelligent understanding, adaptability, appreciation of other's view point, learning, sensitiveness to social issues, tolerance, unbiased attitude, devotion to ideas, inter-relationships, emotional balance, self-discipline, social attitude among students. The development of these values and attributes among students can lead the civilization to prosperity, particularly, at this time of crisis and problems worldwide.

Geography, a part of Social Studies, is a science concerned with the study and description of the earth. It is the study of the relationship between the man and the earth on which he lives. Geographic knowledge is increasingly important for survival and progress in today's world. Especially in the modern world where the growth is taking at a faster pace making use of the environmental resources, those environmental resources which are non-renewable in nature thereby affecting the natural balance on the earth. As a result of this number of changes are taking place in the physical and natural aspects on the earth about which an individual should be made aware of. Moreover, it is also observed that

most of teachers of Geography mostly use the lecture method in teaching Geography. Audio-visual teaching and learning aids, including maps, were not considered necessary and were not used in classes. Field trips and excursions are found limited usage in both urban and rural schools. This has made the subject of Geography boring for the students in terms of both teaching and learning making the subject un-interesting and hence decreasing the motivation level of students towards learning of these subjects. There is a vast gap in the way the knowledge of Geography is imparted to the children and in the way it should be imparted looking into the demand of today's world of technology so that the children develop interest and attitude in gaining the knowledge of Geography and understand the Geography of the earth on which they live. All these factors accumulated to create an adverse attitude towards the learning of this subject. With the deepening of the curriculum reform, teachers teaching the original concepts and teaching methods, has been far behind the times. New teaching model is clear to us to actively explore the modern teaching methods. In the present world of technology, where growth is accelerating at a faster pace, need has felt to bring drastic changes in the way the knowledge of Geography is imparted to the children. The present study is an attempt in this direction to experiment an interesting mode of technology to improve the teaching learning process of Geography among students using multimedia technology.

Education has always acknowledged versatility and efficiency of multi- media communications. Mixing face-to-face teaching, self-learning, use of audio-visual aids and do-it-yourself activities has been part of this understanding. Multimedia is a rapidly evolving technology that is bridging the gap between reality and magic. Multimedia has revolutionized every aspect of life around us and is fast gaining acceptance in the shape of careers. Multimedia is a natural extension of a creative mind. It helps you harness the potential of ideas. Multimedia package can be presented as an interactive, ready-reference and learner-centered multimedia tool and cater to all levels of education. These user-friendly packages can be developed that will include a wide variety of animation, graphics and video clippings, etc. Multimedia teaching methods are in a unique advantage into the schools, into the classroom, with its distinctive teaching

characteristics, so that the classroom is more colorful. Multimedia instruction uses motion, voice and music, text, graphics, video and still images, to enhance learning by stimulating multiple sensory organs simultaneously. When combined, these tools enable the elegant explanation and enhanced comprehension of learning objects. Studies focused on the effectiveness of multimedia education have proven that multi-media learning resources are often more effective than text-only resources, particularly when the learner is introduced to completely new material. When utilised properly in conjunction with text-based information, images have been proven to enhance motivation, attention, comprehension and recall. Studies have concurred that people retain only 20 percentage of what they see but they remember as much as 80 percentage of what they see, hear, and do simultaneously. Multimedia technologies offer high-tech support for a range of visual, textual and aural sources, which complement the Accelerated Learning method. Using a variety of media to present information caters for more learning styles. Multimedia technology can maximise the potential of the learner's intelligences and improve their quality of learning, e.g. hands-on interactivity enhances the kinesthetic intelligence; logical/ mathematical intelligences can be maximized through problem-solving. No matter what one's intelligence, multimedia presentations trigger visualization strategies such as mental imagery, which is crucial to many kinds of problem solving and retention.

The review of related studies reveals no studies were found by the researcher in India related to the development of multimedia packages in teaching of Geography at secondary level except one study done by Idayavani (1991) developing video programme in Physical Geography for higher secondary students. The researcher has come across only this study which would help to understand the area of teaching Geography through Multimedia Packages developed with the use of computer technology and other media. A very useful handbook for teachers of Geography, edited by D. Forsaith, states that one function of school Geography is to 'help the child to adjust itself to...the world as a whole through enlightened pictures of other peoples and races, leading to a sound and just international sentiment'. This can be done by the means of presentation of enlightened pictures, descriptions, maps, accounts of adventure and travel, as well as films, postcard,

drawings, photographs, etc. The nature of the content of Geography demands a series of well-planned expeditions, leading to projects as they become abstract in nature when explained verbally. But if more of field trips and excursions are planned, then it becomes more time consuming. Here, multimedia packages developed with the integration of different media such as text, sound, video, images, two dimensional (2D) and three dimensional (3D) graphics and animation; coupled with the power of interactive digital technology to offer information with impact, can be effectively used for those topics especially which requires more of imaginations or field visits. It bears the capacity to make abstract world be felt real to the students. In Geography teaching, usage of multimedia technology can create teaching situation, students from the multi-faceted sensory stimulation system can be catered with, can help to stimulate students interest in learning, cultivate noble character, create a good moral character, increase classroom capacity, the development of intelligent students to develop their comprehensive ability, can contribute to improve the vitality of Geography teaching, and promote overall development of students in an effective way.

Standard IX is the crucial standard of secondary education which is needed to be sound for secondary examination at standard X and that to lead a discipline and career in higher/ senior secondary stage. Being a practitioner teacher of Geography in Central Board of Secondary Education for the last fifteen years, the researcher felt the need for using technology in teaching-learning of Geography so as to take care of the limitation of Human Teacher in the same.

The proposed study was an attempt in this direction to develop a multimedia package on Geography to teach standard IX CBSE students considering these research questions in mind.

5.2.0 RESEARCH QUESTIONS

In the process of formulating the present research study, the following research questions came in the mind of the researcher.

- Whether multimedia in computer can be used for effective teaching of Geography?
- Whether students studying Geography through multimedia do better in comparison to the students studying the same through traditional method?

5.3.0 STATEMENT OF THE PROBLEM

DEVELOPMENT AND IMPLEMENTATION OF MULTIMEDIA PACKAGE TO TEACH GEOGRAPHY TO STANDARD IX CBSE STUDENTS

5.4.0 OBJECTIVES OF THE STUDY

The present study was designed with the following objectives.

1. To develop a multimedia package in subject of Geography for standard IX CBSE students.
2. To implement the developed multimedia package for teaching Geography to standard IX CBSE students.
3. To study the effectiveness of multimedia package in the terms of achievement of students.
4. To study the effectiveness of multimedia package in terms of reaction of students towards the developed multimedia package.

5.5.0 HYPOTHESIS

The following hypothesis was formed which was tested at 0.01 level of significance.

There will be no significant difference in the mean achievement score of Geography of control group and experimental group students.

5.6.0 DEFINITION OF TERMS

Following term was defined in the present study by the researcher pertaining to the present study.

Multimedia Package: For the present study the multimedia package was defined as a computer based package that includes the integration of different media such as, text, sound, video, images of two dimensional forms, simulations and animations to offer information with impact.

5.7.0 OPERATIONAL DEFINITION OF TERMS

Following terms were operationally defined in the present study.

Achievement in Geography: Achievement in Geography was the marks obtained by the students of standard IX in the subject of Geography in the achievement test constructed by the investigator.

Reactions of Students: The scale value of the preferred belief of the students regarding the component of the developed multimedia package on a five point-scale was considered as the reaction of the students towards the component of the multimedia package. The aggregate qualitative scale value was considered as the overall reaction towards the developed multimedia package.

5.8.0 DELIMITATION OF THE STUDY

The present study the Geography curriculum for standard IX students was delimited to all the six units of standard IX (Social Science) Geography textbook titled 'Social Science Contemporary India-I Textbook in Geography for Class IX' prepared and published by NCERT, New Delhi in March 2006, reprinted in January 2010 and which was prescribed by Central Board of Secondary Education for the execution of syllabus in CBSE affiliated schools. These units were (i) India–Size and Location (ii) Physical Features of

India (iii) Drainage (iv) Climate (v) Natural Vegetation and Wild Life and (vi) Population.

5.9.0 METHODOLOGY

The present study was experimental in its nature. As the sample for the present study was selected purposively, quasi-experimental research design was adopted. Pre-test post-test nonequivalent group design was followed.

5.9.1 Population of the Study

All the standard IX students studying in CBSE affiliated English medium schools of Gujarat in the year 2011-12 constituted as the population for the present study. There were a total of 232 CBSE affiliated secondary schools and 14665 standard IX students in those schools affiliated to CBSE in Gujarat for the year 2011-12. (Derived data as per students enrollment done in standard IX in Gujarat for the X AISSE Board examination that was to be conducted by CBSE for year 2012-13.)

5.9.2 Sample of the Study

Considering the experimental nature of present study and feasibility aspect of experimentation, data collection and easy availability all required facilities and the researcher's convenience the sample were selected purposively. Two CBSE affiliated secondary schools of Surat city were taken purposively as the sample school for the present study namely P.P. Savani Chaitanya Vidya Sankul, Abrama, Surat as the school (with section A of standard IX as the sample group) for experimental group and Radiant English Academy, Piplod, Surat as the school (with section A of standard IX as the sample group) for controlled group. There were 35 and 37 students in the sample of experimental and control groups respectively. On the basis of pre-test achievement score in Geography, the groups were made equivalent with a sample of 30 students of standard IX CBSE affiliated schools in each of control group and experimental group.

5.9.3 Tools for Data Collection

In the process of attainment of the objectives for the present study, an Achievement test in Geography and a Reaction scale were constructed by the researcher.

Achievement test was based on the content of 'Social Science Contemporary India-I Textbook in Geography for Class IX published by NCERT, New Delhi in March 2006. Achievement test was of 100 marks with due coverage of the content and covering knowledge, understanding and application based objective type, multiple choice question and was duly tested for its validity and reliability. The content validity of the achievement test was found out by incorporating the suggestions of ten experts in the area of Geography teaching. The reliability coefficient using split-half method was found to be 0.91 showing a high level of reliability.

A Likert type five point reaction scale ranging from 'strongly agree' to 'strongly disagree' through 'agree', 'can't say', and 'disagree', was prepared to study the reaction of the students of experimental group about the developed multimedia package for teaching Geography. 30 positive statements related to the construction, implementation, and experience from the multimedia package were framed and incorporated in the reaction scale. Students were supposed to show their reaction by putting a tick mark (√) in the appropriate box for each statement. The reaction scale was also validated. The content validity of the reaction scale was found out by incorporating the suggestions of ten experts in the area of measurement.

5.9.4 Development of Multimedia Package

In order to develop a multimedia package the researcher underwent following stages of its development.

- In-depth planning and the analysis of the content in collaboration with the associated team member in the development process of multimedia package.
- Drafting the script of the content to be presented in the package.

- Development of animation and video features.
- Assembling the features with audio text, graphics and animation and further editing for finalization.
- Validation of Multimedia Package.
- Tryout of the Multimedia Package.

5.9.5 Procedure of Data Collection

Data was collected in three phases as given below.

Phase-1: Pre-Testing

In the beginning of the experimentation, the researcher administered the achievement test in Geography for the purpose of pretesting on both the experimental group and control group students. Both the control and experimental group students were informed about the testing two days before pretesting. Time duration of the test was one hour forty minutes (100 minutes), giving 1 minute to each multiple choice questions. Both the groups were made equivalent on the basis of this pre-test score. In this process 30 student were segregated in each of control group and experimental group as samples for the purpose of experimentation.

Phase-II: Implementation of Multimedia Package

After taking the required permission from the authorities of the experimental school, Researcher being the Principal and the Geography teacher arranged a total of 60 periods in the timetable each with the duration of 35 minutes for the whole year of 2011-12 for the implementation of the multimedia package. The researcher himself taught all the six chapters of Geography to the whole experimental group for the arranged time period with the help of the developed multimedia package. Throughout the process of teaching-learning the researcher acted as a facilitator and guide. The researcher used discussion method while teaching Geography to the experimental group with the help of multimedia package. During this period of time, the researcher observed the students of the

experimental group too. During the same duration the control group was taught Geography by their own teacher through traditional method.

Phase – III: Post-Testing

In the second week of February 2012 the researcher completed the teaching of Geography to the experimental group through multimedia package. During the same time the teaching of Geography to the control group was also completed by their teacher using traditional approach. During this time the developed achievement test in Geography used as the pre-test before, was administered again on both the whole control group and experimental group as the post-test by the investigator. The prepared reaction scale was administered on the experimental group students to know their reaction towards the developed multimedia package through which they were taught Geography for the whole year.

5.9.6 Procedure of Data Analysis

The collected data obtained through pre-test and post-test were analyzed by employing quantitative data analysis techniques. Pre-test achievement data related to Geography was used to make control and experimental group equivalent. Mean, Standard Deviation, Standard Error of Mean and Mann-Whitney U-test were used to analyze the quantitative data collected through post-test. The non-parametric Mann Whitney U-test was used to analyze the data as the sample was taken purposively as it is considered as the most powerful non parametric equivalent of t-test of parametric family. Data collected through reaction scale was analysed quantitatively with the help of percentage calculated for the frequency of responses and Intensity Index (II).

5.10.0 MAJOR FINDINGS OF THE STUDY

Following major findings were drawn for the present study on the basis of quantitative analysis and interpretation of the data.

1. The developed multimedia package was found to be significantly effective in terms of enhancing students' achievement in Geography in comparison to the traditional approach.
2. The developed multimedia package to teach Geography was also found to be effective in terms of the reaction of students towards the package.

5.11.0 SUGGESTIONS FOR THE FURTHER RESEARCH

In view of the fact that the present study was limited to the chapters of Social Science Contemporary India-I Text Book in Geography for class IX prepared by NCERT, New Delhi prescribed by Central Board of Secondary Education and to the students of P.P. Savani Chaitanya Vidya Sankul, Surat and to the development of multimedia package for teaching-learning Geography, the researcher would like to suggest some more areas and issues for the further research.

- Similar studies could be conducted taking the sample randomly for more generalisation.
- Experiment on similar multimedia packages could be done in other standards with different boards of affiliation.
- An advanced multimedia package incorporating more of 3D and digital aspect, and an interactive one can be developed for teaching same or alike topics of Geography for future research.
- Such multimedia packages can be developed for the whole Social Science and be experimented.
- Longitudinal studies could be conducted to see the effectiveness of multimedia package over a longer period of time in different subjects.

5.12.0 CONCLUSION

The objective of this study was to find the effectiveness of multimedia in teaching Geography to the students of standard IX affiliated to CBSE. The finding of the present research supports multimedia as an effective instructional tool. Results showed that both the control group and experimental group of students did very good as far as achievement is concerned, but the achievement of the group taught through the multimedia was found better than the students who were taught through traditional method. It shows that multimedia helps in improving the learning in Geography. There are other studies (Hickey and Bein, 1996; Gabrielle, 2003; and Rosales, 2005) which supports that multi-media learning resources are often more effective than other traditional resources. It indicates that using multimedia in teaching could help students to learn the content in a better way as these technologies offer varied of learning support in the form of motion, voice and music, text, graphics, video and still images that stimulates multiple sensory organs simultaneously. This impact of multimedia was also observed by the researcher during experimentation, where students were quite active, eager to know about the next facts, helping each other while solving problems, quite interested in the graphics for understanding various phenomenon, and interested to know the technical aspects of the multimedia package like how it was developed. The reaction of the students toward the multimedia package and its usage were quite positive. These findings proved the age old proverb "Tell me and I forget, Show me and I remember, Involve me and I understand".

The results of this study have direct implications on the future methodology of Geography teaching at secondary level and an indirect implication for other subjects and levels. It emphasizes on the usage of multimedia as an alternative instructional tool to the traditional classroom for the subject of Geography learning that is quite abstract. It could be used as an instructional system in formal educational situation. The comparative better result in the Geography achievement of experimental group in the present study shows the quality of both the multimedia package and the way it was implemented. Therefore, the study also has implications for teachers to have better planning for the teaching - learning process. Findings of the study conducted by Spradlin (2010) supports

the fact that mere presence of computers does not improves students learning and that quality is essential in any mode of instruction. The type of instruction has an influence on the academic performance. (Burton, Beatrice Spencer, 1995). Systematically designed technology mediated instructional strategies can positively affect motivation, performance and self-directed learning. (Gabrielle, 2003). It talks about strengthening the teachers in the area of computers and the usage of the same in teaching -learning. The review of related literatures shows the lack of teachers' engagement in such kind of multimedia projects. Time has come to break the walls of traditional approach to teaching–learning and coming ahead with some innovative strategies. A teacher made multimedia package extending more sensory activities to the students with advanced forms of animation and simulation can be used effectively for providing information and content knowledge to school students. More and more educators need to be involved in the production of multimedia packages considering the end-users needs. Here, the researcher recommends the regular organization of the training programmes, seminars and workshop for the teachers providing an effective form of training, for using multimedia technology in education and to help them learn the creation of such multimedia packages and further get motivated to involve themselves in its development so as to make their teaching - learning more exciting and effective. Both private sector and public sector organizations need to initiate measures in the activities to empower our classrooms and teachers to face the challenges of the education system of Generation Next.