CHAPTER I

CONCEPTUAL FRAMEWORK

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CHAPTER I

CONCEPTUAL FRAMEWORK

1.0.0 INTRODUCTION

Every individual is a part of the community and it is not merely a History or Geography or Civics or an Economics that matters, but rather the man himself who influences and is influenced by his history, his geography, his civics or his economics and his community. Learning about people and the various ways in which they interact with each other and with the various environments in which they find themselves is very essential. The way to make people aware about themselves and their environment is through education. The aim of providing education to the children is the all round development of their personality. 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. The scope of Social Studies is very vast and in fact as wide as the world itself and as lengthy as the history of man on this earth. It includes the millions of years prior to recorded history and also the foreseeable future. Specified in Methods of Teaching Social Studies, in the words of John. O. Michaels (as cited in Kumari, B.V. & Rao, D.B., 2004), "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 if their ramifications; a narrow compartmentalized programme limits social learning".

The term Social Studies is of recent origin. Its widespread use was started in 1916 in the USA. Its origin in India can be traced back with the formulation of the Basic System of Education in 1937. National Policy of Education in the year 1986 changed the nomenclature from Social Studies to Social Science. Here onwards in the present study the terms will be used interchangeably.

The importance of Social Studies or Social Science has been felt worldwide for the purpose of social reconstruction and development of the mankind, details of which are given as follow.

1.1.0 IMPORTANCE OF SOCIAL SCIENCE

J.F. Forrester (1948:8), in Teaching of Social Studies by Mangal defines "Social Studies, are, as the name suggest studies society and its chief 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 interdependence of man and man and nation and nation."

An NCERT publication entitled 'National Curriculum for Elementary and Secondary Education' (1988) has used the term Social Science. It has observed "Social Sciences is perhaps the singular curricular area which can prove to be most effective tool for providing education in the context of all the core components indicating in the NPE (National Policy of Education) 1986". The common core envisaged by NPE comprises (i) History of India's Freedom movement, (ii) Constitutional obligations, (iii) Values such as India's common heritage, (iv) Egalitarianism, democracy, secularism, (v) Equality of sexes, (vi) Protection of environment, (vii) Small Family norms, etc.

As Social Science is the study of the people and their interactions with one another, surely some of the following justifications were found for its existence in the school curriculum. Social Science is important in school curriculum, because of the following reasons.

1. It deals with the inter relations that develop between and among people and those that develop between people and their environment.
2. It is a broad and composite instructional area which draws its contents from different Social Sciences.

3. It is a compound rather than a mixture where the ingredients lose their identity and something tangible and worthwhile emerges out of the combination of teaching of History, Geography, Civics, Economics, etc.
4. It aims at enabling the students to adjust to their social environment which includes the family community state and nation and in fact the entire humanity.
5. It deals with art of living.
6. It deals with those areas of curriculum that enable the students to interpret intelligently the matrix of social forces and movements in the midst of which they are living.
7. It establishes relationships between present, past and future.
8. It integrates the knowledge of all Social Sciences and is, therefore, called 'coordinated' and 'coordinating'.
9. It is the applied branch of Social Sciences, introduced in the school curriculum with a view to develop proper attitudes, sensibilities and skills in future citizens.
10. The materials of Social Science are useful for general education at school level, before collegiate education starts so that pupils can learn them with sufficient ease and interest.
11. The content of Social Science are continuously growing and changing with the changing social process.
12. Social Science cover the study of communities at all levels, local, regional, national and international with focus on man and his social environment.
13. Social Science stresses contemporary human life and its problems rather than the past history of the man.

1.2.0 THE OBJECTIVES OF TEACHING THE SOCIAL SCIENCES AT THE SECONDARY STAGE

Given forth are the objectives of teaching Social Science at the secondary stage as specified in Position Paper by National Focus Group on Teaching of Social Sciences (2006).

To develop among the learner analytical and conceptual skills to enable him/ her:

1. to understand the processes of economic and social change and development with examples from modern and contemporary India and other parts of the world;
2. to critically examine social and economic issues and challenges like poverty, child labour, destitution, illiteracy, and various other dimensions of inequality;
3. to understand the rights and responsibilities of citizens in a democratic and secular society;
4. to understand the roles and responsibilities of the state in the fulfillment of constitutional obligations;
5. to understand the processes of change and development in India in relation to the world economy and polity; and
6. to appreciate the rights of local communities in relation to their environment, the judicious utilisation of resources, as well as the need for the conservation of the natural environment.

At the secondary stage, the Social Sciences comprise elements of History, Geography, Political Science, and Economics. The main focus will be on contemporary India and the learner will be initiated into a deeper understanding of the social and economic challenges facing the nation. In keeping with the epistemic shift proposed, contemporary India will be discussed from the multiple perspective and efforts should be made to relate the content as much as possible to the children's everyday lives.

Considering these importance and objectives of Social Science in the school curriculum, it can be said that it is a subject which can develop the child into a good social being. One of the subjects taught in Social Science as stated above 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.

1.3.0 TEACHING OF GEOGRAPHY

Robert E. Dickinson (1969) as stated on Geography World in What is Geography? defines "Geography is fundamentally the regional or chorological science of the surface of the earth." Geography by definition is a science which is concerned with the study and description of the earth. Wikipedia, the encyclopedia states word Geography is derived from Greek word "*geographia*", means "earth description". It is the science that studies the lands, the features, the inhabitants, and the phenomena of the Earth. Geography as a discipline can be split broadly into two main subsidiary fields: the Human Geography and the Physical Geography. The former largely focuses on the built environment and how humans create, view, manage, and influence space. The latter examines the natural environment, and how organisms, climate, soil, water, and landforms produce and interact. The difference between these approaches led to a third field, the Environmental Geography, which combines the Physical and the Human Geography, and looks at the interactions between the environment and humans. In 1984, the National Geographic Society, in partnership with the Association of American Geographers, developed the five themes of Geography: i) Location; ii) Place; iii) Human-Environment Interactions; iv) Movement; and v) Regions. Since then, textbook companies, educators, and researchers have used these themes in the construction and implementation of Geography curriculum materials. Adult studying Geography normally begins with the studies of the conditions on earth-of air, rock, soil conditions, for instance, and from these lead to their influence on man's habits of life. Its basic concepts are concepts of space. The modern Geography is an all-encompassing discipline that foremost seeks to understand the earth and all of its human and natural complexities-not merely where objects are, but how they have changed and come to be. Unambiguously "Geography is the study of the relationship between the man and the earth on which he lives." Geography has been called "the world discipline" and "the bridge between the Human and the Physical Science". 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.

1.3.1 Importance of Geography

William Hughes (1863) as quoted in The History of Geography by Barker in 1963 stated "Mere place names are not Geography. To know by heart a whole gazetteer full of them would not, in itself, constitute anyone a geographer. Geography has higher aims than this: it seeks to classify phenomena (alike of the natural and of the political world insofar as it treats of the latter) to compare, to generalize, to ascend from effects to causes and in doing so to trace out the great laws of nature and to mark their influence upon man. In a word, Geography is a science, a thing not of mere names, but of argument and reason, of cause and effect".

As learnt Geography is the study of places on earth and their relationship with each other. Study of Geography begins with home community and expands as a person gains greater experience. Thus, Geography provides a conceptual link for children between home, school and the world beyond. Geographers study how people interact with the environment and with each other from place to place and they classify the earth into regions in order to draw generalizations about the complex world in which we live. Because it deals with where and how the people live, Geography is rich in material that relates to international understanding, multi-cultural concerns and environmental education. As the pace of change quickens, communications get faster and challenges to the environment multiply, knowledge and understanding of Geography becomes more vital than ever. 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.

1.3.2 Importance of Teaching Geography in Social Science

Geography is a broad and integrative discipline. Geography makes both a distinctive and a wider contribution to the curriculum. It is an essential component in preparing young people for life in the twenty first century. Learning Geography helps students

develop curiosity in, and an understanding of, themselves, other people and places, and the relationships between them. Geographical education is indispensable to the development of responsible and active citizens in the present and future world. Geography can be an informing, enabling and stimulating subject at all levels in education, and contributes to a lifelong enjoyment and understanding of our world. Learners require global geographical awareness in order to ensure effective cooperation on a broad range of economic, political, cultural and environmental issues in a shrinking world. Moreover, Geography addresses the major challenges that the global community is facing. The resolution of major issues facing our world requires the full commitment of people of all generations. International Charter on Geographical Education published by Commission on Geographical Education (1992) states "All of the following issues have strong geographical dimensions at a variety of geographic scales like extreme natural events, global warming and climate change, deforestation, desertification, preservation of biodiversity, land use conflicts, soil erosion, atmospheric, soil and water pollution, use of non-renewable resources, sustainable economic activities, population of dynamics and migration, urbanization, the processes and impacts of tourism, access to technology, access to education-especially literacy, global and local processes and patterns giving rise to poverty, unemployment, disease, crime, gender inequalities, ethnic conflicts, war, regionalism and nationalism." In the context of these problems and issues facing humanity, the right to education includes the right to high quality geographical education that encourages both a balanced regional and national identity and a commitment to international and global understanding. Hence the proper transaction of the knowledge of Geography is important for all students. Alleged, the importance of teaching Geography enhances to students as it suffices Individual Educational Needs and provides opportunities to the following.

- Become aware of places and locations.
- Look at local, national and international events from a geographical perspective so they start to understand their location in regards to the space and environment surrounding them.
- Become conscious of the geographical features.

- Look at the local, national and international events, in a geographical context, so they start understanding first their local environment and then can spread their know-how to identify with other environments that lie further away.
- Understand the most important characteristics of the main physical systems of the world and the interaction between these systems.
- Understand the interactions that occur between human activities and the physical processes which include the causes by which society is influencing the state of the environment and vice-versa.
- Nurture love for the geographical environment.
- Foster love and respect for the group with whom they are working.
- Develop a dynamic and creative culture for all the aspects covered.
- Cultivate an interest in television programmes namely the news, the weather report, cultural and educational programmes, and programmes related to nature and science.

Canadian Council for Geography Education (n.d.) in The importance of Geography in School Curriculum as adopted from the pamphlet of National Council for Geography Education stated the following.

- Geography teaches students important skills: Through the study of Geography, students learn to read maps and interpret information at geographical scales, from local to global. They are able to use data from maps, tables, graphs and text to recognize patterns and solve problems. Students also can integrate concepts from many different areas of Science, Social Science and the Humanities and apply critical thinking to understand and deal with current issues of local, national and international importance.
- Geography helps students learn about the world: Knowing something about where the places are and what they are like is important. Citizens should have basic knowledge about the country and of the world as well and understand the international relationship.

- Geography contributes to international understanding: The world economies are increasingly linked in an international network of trade and exchange. Well planned geographic education at all grade levels will help to make us more aware of other countries and culture and prepare our students to take place in global community.
- Geography helps to understand our own country: (Geography and citizenship) Knowledge of Geography helps us to be the better citizens. Through Geography we can learn to locate important events. We can understand the relationship between Geography and national or international policies and we can use geographical knowledge to make informed decisions regarding the best use of the nation's resources. Finally, Geographic knowledge helps us to ask important questions about policies that lead to changes in landscape and land use. Geographically informed citizens will be effective leaders for our country.

Since geographic concepts and map skills are taught within the context of a multidisciplinary Social Science program, it is must to take care of and to insure the preservation of the unique features of Geography. Under no circumstances should basic geographic concepts and principles be violated even though they are being taught within a coordinated Social Science program. But the teaching of Geography in the school does not seem up to the mark. The Geography teacher actually teaches the lesson to the students that typically involve a combination of lecture, classroom discussion, readings, homework assignments, and any other types of activities aimed at teaching the students. After the lessons have been taught, examinations are typically administered by the teacher to ensure that students have learned what was taught and met the goals for the lesson or unit. Considering the importance and the nature of the subject, special care needs to be taken by the teachers while teaching the subject of Geography. The following paragraph presents the scenario of Geography teaching in the schools.

1.3.3 Present Scenario of Teaching Geography

Studies on present position of teaching Geography in secondary schools carried out by Jani (1987), Patil (1985) in Solapur and Khan (1985) in Bangladesh indicate that most of teachers of Geography were not fully qualified to handle the subject in terms of a degree of Geography and for professional training in methodology and therefore, mostly, adhere to the lecture method. Necessity of teaching Geography with the help of audio-visual and other learning aids was ignored. Time factor at disposal in an academic year restricts the number of field trips and excursions. Lack of needed facilities and the required knowledge to teach the subject restricts the scope of teaching Geography. Unfortunately, it does not have a history of being well taught nor interesting for children. Similar review is given by Zevin (2000) stated that teachers depend on the textbook as their main source of ideas without much enrichment or supplementation from other sources. He also stated that they are used as part of a nearly closed system of assignments, reading, questions, homework and tests that provide security but little imagination. This is because of time-scarce teachers' need for quick, easy, readily available material.

Dervan, McCosker, MacDaniel, & O'Nuallain in Educational Multimedia in Current Developments in Technology-Assisted Education (2006) indicated "Despite society's awareness of the importance of education there has been less progress made in this vital area than in any other area of human endeavour for the last two millennia. Secondary education in particular still employs concentration, repetition and learning by rote as its principal educational tools and higher education remains dependent on the archaic toolset of lectures, laboratories, papers and exams. A major failing of today's educational system is it's preoccupation with "what to learn" and ignorance of the more pertinent issue of "how to learn". The education system today is still deeply rooted in its origins and has not changed with the latest research into learning techniques.

Position Paper National Focus Group on Teaching of Social Sciences (2006) too remarked the usage of textbooks as the major source of knowledge and that fore

closed any possibility of innovation by an active participation of the learners both teachers and students.

The textbook-driven education system sees textbooks are an integral part of most education systems and serve as bridges between teachers and students. Our process to teach Geography is general routine, teacher centered and authoritative stressing upon rote learning. Part of the reasons for the generally ineffectual teaching of Geography in the schools has been the lack of an inadequate background which teachers themselves have had in Geography. This being the case, teachers have held closely to the class room text book. The programme of teaching topics in Geography consists of reading assignments from the "geographies" and simple exercises of the "name and locate" variety providing little space for learners thinking and reasoning. The learner thus accumulates 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, a need to bring drastic changes in the way the knowledge of Geography is imparted to the children, has become crucial. Children have to be exposed to new approaches and methodology to transfer the knowledge of Geography for them to understand the Geography of the earth on which they live and to develop interest and attitude.

Two studies, that of D,Souza (1971) and Ponkshe (1983) deal with the Geography concepts and approaches to develop skill in teaching geographic concepts effectively. These represent a welcome trend towards a cognitive approach to the teaching of Geography. There is a great need first to identify the different geographical concepts and then develop suitable learning experiences in the teaching of regional and general Geography. An interesting attempt made by Bhattacharya (1984) through his study on the effectiveness of the concept attainment model and inductive model for teaching Geography and found that the models of teaching approach results in better achievement in Geography even in average and low-resource-status education institutions.

The National Curriculum Framework (2005) for school education recommends that children's life at the school must be linked to their life outside the school. This principle marks a departure from legacy of bookish learning which continues to shape our system and causes a gap between the school, home and community. The syllabi developed on the basis of NCF signify an attempt to implement this basic idea. They also attempt to discourage rote learning and the maintenance of sharp boundaries between different subject areas. The methods used for teaching and evaluation will also determine how effective the text book proves for making children's life at school a happy experience, rather than a source of stress or boredom. Treating the prescribed textbook as a sole basis of examination is one of the key reasons why other sources and sites of learning are ignored. Including creativity and initiative is possible if we perceive and treat children as participants in learning, not as receivers of fixed body of knowledge. These measures if adopted can take us in the direction of a child - centered system of education outlined in National Policy on Education (1986). Taking into consideration the above mentioned ideas the NCERT has published first edition of a "Text book in Geography for class IX" under the subject of "Social Science-Contemporary India-I" in March 2006 effective from academic year 2006-2007.

Position Paper National Focus Group on Teaching of Social Sciences (2006) states "Issues relating to Geography at secondary level should be taught keeping in mind the need to inculcate in the child a critical appreciation for conservation and environmental concerns. The textbook should be seen as opening up avenues for further enquiry. This would encourage the learner to go beyond the textbook, to further reading and observation."

For implementing the new syllabus of Geography fruitfully, there is a need to further look into the aims and objectives of teaching Geography, concepts of Geography, the approaches adopted and the methodology used to teach Geography and modify the method of teaching Geography with the help of latest multimedia technology according to the need of the present society to make it more effective and interesting.

1.3.4.0 Aims of Teaching Geography in Social Science

Geography today is no longer the Geography of learning-by-heart countries, capitals and crops. The subject matter is now far more topical, challenging and pertinent to the modern world. The modern Geography is an all-encompassing discipline that foremost seeks to understand the earth and all of its human and natural complexities- not merely where objects are, but how they have changed and come to be. 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. The central purpose of our geographic content and skill program is the development of a system of procedures and of the basic tools which will foster a child's ability to observe, to analyze, to interpret, and to understand man's response to his physical and cultural environment. Hence it is very essential to generalize the aims of teaching Geography so that it can be taught to its optimum level.

The Geographical Association (n.d.) sees the aims of Geographical Education as follows.

1.3.4.1 Primary General Aims of Geographical Education

Knowledge

- Information about places and locations that enable students to view local, national and international activities within a geographical perspective.
- Information about geographical cycles and features, attributed to local, national and international situations, so that students will be able to view their geographical context.

Understanding

- Understanding of the most important characteristics of the main physical systems of the world and the interaction between these systems.

- Understanding the interactions that occur between human activities and physical processes, which include the causes by which society is influencing the state of the environment and vice-versa.

Skills

- Skills by which students are able to express themselves orally, artistically and by written format on geographical themes in a way that they are able to describe, note the basic similarities and differences between geographical features and aspects.
- Skills by which students are able to express themselves orally, artistically and in written format on geographical themes by being able to describe and discuss the interaction that exists between human organizations and geographical systems.
- Skills and the necessary know-how by which students will be able to carry out geographical studies, especially the interpretation of maps and fieldwork.

Attitudes

- Nurturing amongst children love and respect for the geographical environment.
- Fostering amongst the children love and respect towards the group with whom they are working.
- Developing amongst children a dynamic and creative culture in regards to all aspects mentioned above.
- Encouraging amongst children a growing interest in selected programmes on television namely the news, the weather report, educational and cultural programmes, programmes related to nature and science.

1.3.4.2 Secondary General Aims of Geographical Education

- To develop in young people knowledge and understanding of the place where they live in, of other people and places and of how people and places inter-relate and inter-connect; of the significance of location; of human and physical environments; of people-environment relationships; and of causes and consequences of change.

- To develop the skills needed to carry out geographical study e.g. geographical enquiry, map work and fieldwork.
- To simulate an interest in and encourage an appreciation of, the world around us.
- To develop an informed concern for the world around us and ability and willingness to take positive action, both locally and globally.
- To acquire an understanding of different communities and cultures throughout the world, develop an awareness of the contrasting opportunities and constraints presented by different environments.
- To foster an appreciation of environments, thereby enhancing a sense of responsibility for the care of the earth.
- To offer a range of skills and techniques in observing, selecting, analysing and presenting data.
- To gain the ability in using a wide range of geographical information in making judgments and reaching decisions.

1.3.5 Objectives of Teaching Geography in Social Science

NCERT in the year 2005 has underlined the following main objectives to be achieved through the teaching of Geography at standard IX.

1. To develop an understanding of man and environment interrelationship at the global level.
2. To develop an appreciation of the inter-dependence of nations and regions of the world.
3. To develop an understanding and concern about growing world population and its impact on environment.
4. To develop an understanding of the need for the protection of the environment and the conservation of nature and natural resources.
5. To develop an understanding that the economic development of a region depends on several factors, such as resources, level of scientific and technological-advancement and the needs and aspirations of the people.

6. To acquaint the students with the problems faced, by our country in the process of accelerating the pace of development of its national economy and the social transformation of its traditional society into a modem one.
7. To develop skills and abilities to read, understand and analyse geographical information and data presented in various forms such as photographs, maps, graphs, diagrams and charts, and
8. To equip the students with needed abilities and attitudes to study and analyse problems of development having geographical dimensions in a scientific manner.

Considering these objectives of teaching Geography, it can be said that innovative method and approaches are needed by the teachers to teach the subject effectively.

1.3.6.0 Different Methods and Approaches of Teaching Geography

Canadian Council for Geographic Education in The Importance of Geography in the School Curriculum emphasized the Geography classes should be equipped with proper equipment's like up to date globes, atlas and wall map of the world. It further stated a modern classroom must be equipped with one computer consisting appropriate and accurate programmes. There is a need to make the learning of Geography interesting and exciting for the students. There is a need to encourage teachers to use creative approaches and methods to teaching Geography.

1.3.6.1 Some Suggested Methods to Teach Geography

The following methods are suggested by the experts those can be used by the Geography teachers to teach Geography effectively according to the need of the specific topic and situation of teaching.

1. Descriptive method: based on personal experience, travel, letters, adventures, and diaries.
2. Text book method: teacher teaches with the help of the text book where the relevant pages are read either by the teacher or she/he asks the student to read those pages of the textbook to the class and teacher simultaneously explains the difficult terms, questions, etc.

3. Project method: 'whole hearted purposeful activity proceeding in a social environment'. Some activity pursued whole heartedly by a class working together with a definite purpose. A project should be piece of investigation leading to climax.
4. Regional Survey Method: based on the study of local Geography, and for the study of similar areas abroad.
5. Visual Aids Method: the use of cinematograph film, epidiascope, film strip. It includes on one end the pictures postcards or holiday snapshots and at the other end visual unit-combination of books, models, charts, film strips and films.

Field Study, Statistical method, The Broadcast lesson method, Assignment method, Discussion method, Laboratory method, Lecture method, Questioning method, Problem Solving method, Review method, Story-telling method, etc. are some more methods that can be adopted to teach Geography. However, this list of methods is not exhaustive. These methods can be used simultaneously for teaching a topic in Geography. The teacher might be guided by the choice of method, of approach by the amount of material he has at hand. Irrespective of the method used in the teaching of Geography, teachers are very important in the process of teaching Geography. Geography teaching would be effective if the following guiding principles will be kept in mind.

1.3.7 Guiding Principles in Teaching of Geography

Paul Robert Hanna (1966) in Geography in the Teaching of Social Studies: Concepts and Skills stated "....even relatively small parts of the earth's surface are beyond the range of the child's sensory experience. Hence their graphic representation on maps in a reduced form is an abstraction because it cannot be related to any such experience. This is one of the major problems of map reading. Because the reduction of areas on maps is difficult for the child to comprehend, map scales are correspondingly hard. Yet he must learn to read the map by scale and to understand the degree of reduction."

Rose Epstein Sabaroff (1957) in a framework for developing map skills in primary grades Social Studies stated "Children should not be allowed to get their first ideas of the appearance of a given kind of feature from the map. Introducing symbols of features children have not seen in real or pictured landscapes is one of the chief causes of failures to learn to read maps–that is, to read through them to the realities the map symbols represent."

People do not study maps to understand maps. They study maps to understand the earth and its inhabitants. Every map symbol stands for something real. The Journal of Geography (2010) stated "A student has truly learned the meaning of a symbol only when he understands the real thing it stands for. With every new map symbol, the student gets a new understanding of the earth and of relationships between the earth and man."

Paul Robert Hanna, et al. (1966) in Geography in the Teaching of Social Studies: Concepts and Skills stated "The two most valuable tools in this process of thinking and behaving geographically are the map and the globe. These tools need to be used to help organize geographic information and to show the areal distribution and relative density of both cultural and physical phenomena."

Students need to have the opportunity to experience a range of activities in Geography, which are appropriate to their level of development, interests and abilities. New experiences cause students to refine their existing knowledge and ideas, so they construct new knowledge. The extent to which teachers are able to facilitate this process significantly affects how well students learn. It is important that they are given opportunities to relate their new learning to knowledge and skills, which they have developed in the past. Teachers should teach knowledge, skills and understanding in ways that match and challenge students' abilities. Activities both within and outside the classroom are to be planned in a way that encourage full participation by all students, irrespective of ability. The teaching of Geography is now conceptually based with the emphasis on student involvement in problem solving, decision-making, data analysis, empathy and mapping. Geography is thus considered by many to be a life skill.

Considering these guidelines and suggestions of teaching Geography and Geography as a life skill, the Geography teacher has a great role to play in the process of teaching Geography. Imaginative, situation sensing and innovative teacher can help a lot in imparting the difficult concept of Geography to the students.

Gopsill (1966, p.18) in The Teaching of Geography describes the geographer's method of working as below.

1. To observe or to seek information.
2. To record what has been found.
3. To reason about these observations and to draw relevant conclusions from them.

He further says that the teachers function is "to direct this process- to make the sources available and to show children how to use them; to instruct in the most appropriate method of recording; and finally, to direct the interpretation, to point out obvious relationships and the conclusions which may be drawn from them, and to train children to make their own."

A very useful Handbook for Geography Teachers., edited by D.M. Forsaith (1932) 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. Collection of pictures is a Geography teacher's main material asset. The nature of the content of Geography demands a series of well-planned expeditions, leading to projects.

Krech and Crutchfield (1948) said that the Geography teacher must approach the task of helping the students to develop the ability to "think geographically" and to solve problems of relative location in differing cultural environment.

Catherine Jain & Arthur Getis (2003) in Journal of Geography in Higher Education stated the Role of the Teacher in teaching Geography.

Teachers can make Geography more accessible by focusing on the senses.

- They can improve access by: using materials and resources that students can experience and understand through sight, touch, sound, taste or smell.
- Organising activities to make up for a lack of first-hand experiences e.g. simulated environments, theatre, role play, reconstructions.
- Giving students first-hand experience of site visits and fieldwork and environmental walks.
- Adapting tasks and environments and providing other activities where necessary, e.g. using less detailed maps, tactile maps, models.
- Support from adults and others by giving students space and freedom to do things for themselves and allowing them time to respond.
- Geography can also be made more accessible through the usage of ICT, e.g. adapted switches, devices, Inclusive Technology Software, 2D and 3D Technology software and Optic Music, visual and other materials to help students develop their knowledge of their own surroundings and the wider world.

The technology now offers students a wealth of up to date Geographical information which allows students to analyze and utilize information from a wide range of subjects and fields. The use of technology can help a Geography teacher lot in the process of teaching Geography. Latest modern technology along with traditional technology can add special feathers in the teachers' cap. Multimedia technology can help a lot in this direction.

1.4.0 MULTIMEDIA

Multimedia is a term frequently heard and discussed among educational technologists today. Unless clearly defined, the term can alternately mean a judicious mix of various mass media such as print, audio and video or it may mean the development of computer-based hardware and software packages produced on a mass scale and yet

allow individualized use and learning. In essence, multimedia merges multiple levels of learning into an educational tool that allows for diversity in curricula presentation.

1.4.1 History of Multimedia for Education

It was in the mid-1960s, when interactive computing came about, regarded as programmed instruction resulting in computer based training (CBT), and thereby a rather "behaviorist" approach to teaching. In the mid-1970s, Assisted Instructions came about, leading to the illusion of perfect Intelligent Tutoring Systems (ITS) capable of mastering all possible human misconceptions. Mid 1980s, was the time of hyper-text that had just caused frustration about "computers as teachers". Many believed that students need no guidance when acquainted with properly and perfectly prepared (hyper) structured information-learning material resulting in Explorative learning but failed, reasons attributed to insufficient spread. 1990 was the time of Multimedia and the Web. All three technological advancements (hypertext, multimedia, and the Web) were melded in the new term "E-Learning" claimed to be conquered by the Web and by multimedia. Soon it was realized that no solution was perfect, and that "we cannot abolish face-to-face teaching." So blended learning was invented. Various experiments revealed that above approaches have great value and can indeed improve teaching and learning. About four decades after the advent of programmed instruction, we see Computer Based Training CBTs and Web Based Training WBTs well established in forms of e-learning or educational multimedia. Hence it can be asserted that Educational Multimedia witnessed different phases and is defined in different ways by different people.

1.4.2 Meaning and Definition of Multimedia

Barron and Orwig (1995) "Multimedia can be loosely defined as computer-based technology integrating some, but not necessarily all, of the following: text, graphics, animation, sound, and video."

Bruder (1991) defined the term 'Multimedia' as the "coordinated combination of video, sound, text, animation, and graphics"

Rieber (1994) defines multimedia instruction as "integrated instructional systems that deliver a wide range of visual and verbal stimuli, usually through or in tandem with computer-based technologies".

Fenrich (1997) "Multimedia is the exciting combination of computer hardware and software that allows you to integrate video, animation, audio, graphics, and test resources to develop effective representations on an affordable desktop computer."

Phillips (1997) "Multimedia is characterized by the presence of text, pictures, sound, animation and video; some or all of which are organized into some coherent program."

Krygier *et.al.* (1997) "Multimedia instruction includes text, images, maps, diagrams, sound, animation and video."

Peck (1999) "Multimedia is a computer controlled combination of two or more media types to effectively create a sequence of events that will communicate an idea usually with both sound and visual support"

Elsom-Cook (2001) "Multimedia is the combination of a variety of communication channels into a coordinated communicative experience for which an integrated cross-channel language of interpretation does not exist." This definition gives way for two approaches- one that is termed the "multiple-media" utilization, and the other in which a combination of different channels acquires unification as a medium.

Reddi (2003) "Multimedia can be defined as an integration of multiple media elements (audio, video, graphics, text, animation, etc.) into one synergetic and symbiotic whole that results in more benefits for the end user than any one of the media elements can provide individually"

Multimedia is known as computer-based applications involving non-linear representation of information using a variety of different representations and some level of user interactivity. And today's multimedia is a carefully woven combination of text, graphic art, sound, animation, and video elements. When you allow an end

user, i.e. the viewer of a multimedia project, to control 'what' and 'when' and 'how' of the elements that are delivered and presented, it becomes interactive multimedia.

Phillips (1997) "The term 'interactive multimedia' is a catch-all phrase to describe the new wave of computer software that primarily deals with the provision of information. The 'multimedia' component is characterized by the presence of text, pictures, sound, animation and video; some or all of which are organized into some coherent program. The 'interactive' component refers to the process of empowering the user to control the environment usually by a computer"

1.4.3 Importance & Uses of Multimedia

FAME 2010+ in article 'The Evolution of Multimedia in Education' (1996) stated "Multimedia not only impinges on individual learning, but also on the many functions of the education sector: teaching, development of teaching materials and pedagogies, teacher training, assessment of students and accreditation of course material. The education sector also has administrative needs, and teachers and establishments have to promote their services. Finally it affects the supporting service industry and other complementary sectors. The main modes of multimedia for education emerging seem to be: Broadcast instruction, Real-time conversation, CAL packages, Multimedia presentations, Multimedia reference, and Network information searching. However, the situation is still very fluid, with new lines of development yet to emerge. The basic CD multimedia product has emerged and will survive to 2010."

Multimedia is seen with multipurpose uses. Some of the uses of multimedia includes the following.

- Drill and practice to master basic skills.
- The development of writing skill.
- Problem solving.
- Understanding abstract mathematics and science and Social Science concepts.
- Manipulation of data.

- Acquisition of computer skills for general purposes, and for business and vocational training.
- Access and communication to understand populations.
- Students access for teachers and students in remote locations.
- Individualized and cooperative learning, and
- Management and administration of classroom activities.

Researchers agree that the benefits of multimedia education surely exist for appropriate subjects and learning settings.

Stephen J. Snyder (1998) in Research on Developments in Business Simulation and Experiential Learning: Multimedia and Student's Expectations indicated many benefits of multimedia in classroom presentation. These benefits include aspects of learning, increased retention rates, and increased interest in the course. (Ng and Komiya 2000; Hofstetter, 1995) stated Multimedia has also been shown to elicit the highest rate of information retention and result in shorter learning time. Barth (1990) found that interactive multimedia computer lessons resulted in an 80 per cent retention rate, while lecture and associated visuals resulted in a mere 20 per cent retention rate in a sample of students. Research by Reinhardt (1995) specified that: (i) multimedia can boost curiosity, creativity, and teamwork amongst participants, (ii) multimedia can change the role of teacher from the traditional role of omniscient ruler to that of a tour guide, (iii) multimedia can increase access to information, (iv) multimedia can break down the wall of the classroom. Moore and Miller (1996) reported that students in introductory biology classes found multimedia attractive. Butler and Mautz (1996) found that students in a multimedia presentation consistently had more favorable impressions of the presentation than did students in a traditional lecture presentation. Luna and McKenzie (1997) obtained attitudinal surveys of students exposed to multimedia teaching methods. 73 percent of the students found multimedia to be a positive addition to the course, 64 percent preferred it to the traditional lecture method and 49 percent wanted to see more courses using multimedia. Similarly, 56 percent of the students reported "enjoying it" and 52 percent believed the multimedia elements improved the lecture. Miller and Moore

(1996) studied the effect of multimedia and found that multimedia raised attendance rates from 35 percent to over 90 percent, and that drop-out rates improved from 15.9 percent to 4.6 percent. With multimedia, the communication of the information can be done in a more effective manner and it can be an effective instructional medium for delivering information. A multi-sensory experience can be created for the audience, which, in turn, elicits positive attitudes toward the application. Rooze & Northrup (1989) found that computer-assisted instruction allows teachers to deliver the same material in a shorter period of time. With regard to information retention, a paper by Velleman and Moore, (1996) reviewing the strengths and weaknesses of using multimedia in teaching concluded that multimedia indeed has many potential benefits and that these benefits may vary based on educational level and ability – lower level ability receiving the most benefit concluded (Wetzel, Radtke and Stern, 1994). An article Multimedia as an Educational Tool (n.d.) states learners can work at own pace and control their learning path, learn from an infinitely patient tutor, actively pursue learning and receive, feedback and it allows teachers for creative work, saves time for more challenging topics, replaces ineffective learning activities, increases student contact time for discussion.(Agnew, Kellerman & Meyer, 1996) stated Multimedia application design offers new insights into the learning process of the designer and forces him or her to represent information and knowledge in a new and innovative way. Bruder (1991) suggests that an important benefit of multimedia is that it is fun to participate in as either a receiver or presenter of information.

Multimedia has obvious educational benefits when developed and used well. Adaptation of right choice of media according to the subject to be conveyed and/or the recipient can lead to better learning. This demands the developer of multimedia to be aware of some characteristics of learner and principles of multimedia.

1.4.4.0 Guiding Psychological Phenomena for Development of Multimedia

Gardner (1983) in Multiple Intelligence Theory asserted that humans actually learn through many different cognitive styles. The theory consists of seven types of intelligence: bodily-kinesthetic, interpersonal, intrapersonal, linguistic, logical-mathematical, musical and spatial. If humans learn through multiple types of

intelligence, then the most effective instructional media would appeal to many or all of them. The challenge that educators face is how to deliver learning materials to people with varying modes of learning i.e. intelligences. Using teaching techniques that match the individuals preferred learning style makes learning a more natural experience. If learning becomes natural, then it becomes easier, faster, fun and more successful.

Bernice McCarthy (1987) in book 'The 4-Mat System' identifies four distinct types of learner.

1. The Innovative learner- who is imaginative and relates new information to her or his own experiences.
2. The Common Sense learner- who wants realistic examples relevant to real life.
3. The Dynamic learner- who wants to learn by actual involvement and specific experiences.
4. The Analytical learner- who wants to see the principles and concepts behind the subject.

The first three learner types are all natural right brain learners who will prefer a visual and kinesthetic approach. The only natural left brain learners are the analytical learners, who find it comfortable to be verbal and logical and have an auditory presentation of information.

S. Dervan et. al. in Current Developments in Technology-Assisted Education (2006) stated "Modern learning theory such as Accelerated Learning is guided by more than a decade of psychological research on the inner workings of the human brain. We have learned that humans have several forms of intelligence instead of a single static IQ and individual learning styles are largely dependent on this diversity. A learner's dominant sensory system, i.e. visual, auditory or kinesthetic, also plays a major role in determining their natural learning style. If the teaching style employed closely matches this preferred style, learning becomes more natural and thereby easier so consequently results improve and learning time is reduced. Evolving multimedia technologies can be used to forge stimulation, which supports multiple learning styles

as they present a wide range of graphical, textual and aural sources." How to involve technology in the best way considering the changes taking place in it demands us to focus on the principles to design multimedia.

1.4.4.1 Principles to Design Multimedia

Peter Doolittle et.al. (n.d.) stated, Individuals learn, retain, and transfer information better when following aspects are taken into consideration.

- When the instructional environment involves words and pictures rather than words or pictures alone (Multimedia Principle).
- When the instructional environment involves auditory narration and animation rather than on-screen text and animation (Modality Principle).
- When the instructional environment involves narration and animation rather than on-screen text, narration, and animation (Redundancy Principle).
- When the instructional environment is free of extraneous words, pictures, and sounds (Coherence Principle).
- When the instructional environment involves cues, or signals, that guide an individual's attention and processing during a multimedia presentation (Signaling Principle).
- Where words or narration and pictures or narration are presented simultaneously in time and space (Contiguity Principle).
- Where individuals experience concurrent narration and animation in short, user-controlled segments, rather than as a longer continuous presentation (Segmentation Principle).

The "Principles of multimedia learning" advocated by Richard Mayer & Ruth Clark based primarily on Mayer's research (2001), Clark and Mayer (2003) that provide the following overview of multimedia principles and their effect on learning are explained forth.

1. Multimedia Principle: Talks about best use of words & pictures. Adding graphics to words can improve learning. Students learn better from words and pictures, rather than from words alone.
2. Modality Principle: "Materials which present both verbal and graphical information should present the verbal information in an auditory format (and not as written text)". It refers to one of several design principles for multimedia instruction and states best use of visual and auditory channels. Explaining graphics with audio improves learning. Students learn better from animation and narration, than from animation and just on-screen text.
3. Split attention effect (Redundancy Principle): "Students learn better from animation and narration than from animation, narration, and on-screen text." It states best use of text and audio. Explaining graphics with audio and redundant text can hurt learning. Thus it is better to eliminate redundant material. Avoid reading on-screen text. Students learn better from animation and narration, than from animation, narration, and on-screen text. Learners do not learn as well when they both hear and see the same verbal message during a presentation. This is a special case of the split attention effect of Sweller and Chandler.
4. Spatial Contiguity Principle: "Students learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen." i.e. best placement of words & pictures. Placing text near graphics improves learning.
5. Temporal Contiguity Principle: "Students learn better when corresponding words and pictures are presented simultaneously rather than successively." i.e. best sequencing of words & pictures.
6. Coherence Principle: "Students learn better when extraneous material is excluded rather than included." Less is more. Using gratuitous visuals, text, and sounds can hurt learning.

    - Visual: Student learning is hurt when interesting but irrelevant words and pictures are added to a multimedia presentation.
    - Sound: Student learning is hurt when interesting but irrelevant sounds and music are added to a multimedia presentation.

- Words: Student learning is improved when unneeded words are eliminated from a multimedia presentation.

7. Individual Differences Principle: "Design effects are stronger for low-knowledge learners than for high knowledge learners, and for high-spatial learners rather than for low-spatial learners." It demands best use of prior knowledge. These learners are equipped to use cognitive strategy to work around cognitive overload, distraction, or other effects of poor design.
8. Practice: Talks about best interactions for learning: Frequent, distributed, problem-solving, job-context practice improves learning and transfer.
9. Learner Control vs. Program Control: It talks about best navigation scheme. Most students learn more under program control. Adult learners require a sense of control to be able to establish a self-paced learning process.
10. Personalization: It is concerned with engaging the learner. Use of conversational tone and pedagogical agents can increase learning.

Ruth Clark has emphasized that graphic technique can be used to specifically support learning of different types of content presentation. Given forth is the table of Graphic Techniques, recommended by Ruth Clark to specifically support learning of different types of content presentation.

Table 1.1: Ruth Clark Graphic Techniques to Specifically Support Learning of Different Types of Content Presentation

Content Type	Graphic Support	Examples
Fact	Realistic illustrations of specific forms, screens, and equipment	Illustration of a software screen
Concept	Realistic illustrations of multiple examples of a concept	Pictures of excellent web pages to illustrate the concept of what makes an effective web page
Process	Animated diagrams illustrating stages of process	Activities in a computer network
Procedure	Video or animated demonstrations of near-transfer task being performed	Animation of how to use a software application
Principle	Video or diagrams of far-transfer tasks being performed	Video of effective sales closing techniques

Clark and Mayer (2003) offered the following recommendations for graphic support.

Table 1.2: Clark's and Mayer's Recommendations for Graphic Support

Knowledge Structures & Graphic Support			
Type of Cognitive Structure	**Description**	**Graphic Representation**	**Example**
Process	Explain a cause-and-effect chain.	Flow chart	Explanation of how the human ear works.
Comparison	Compare and contrast two or more elements along several dimensions	Matrix	Comparison of two theories of learning with respect to nature of the learner, teacher, and instructional methods
Generalization	Describe main idea and supporting details	Branching tree	Presentation of thesis for the major causes of the American Civil War along with evidence
Enumeration	Present a list of items	List	List of the names of seven principles of multimedia design
Table Classification	Analyze a domain into sets and subsets	Hierarchy	Description of a biological classification system for sea animals

Table 1.3: Clark's and Mayer's General Multimedia Design Principles for Text and Illustrations

Concentrated	The key ideas are highlighted in the illustrations and in the text
Concise	Extraneous descriptions are minimized in the text and extraneous visual features are minimized in the illustrations
Correspondent	Corresponding illustrations and text segments are presented near each other on the page
Concrete	The text and illustrations are presented in ways that allow for easy visualization
Coherent	The presented material has a clear structure (e.g., a cause-and-effect chain)
Comprehensible	The text and illustrations are presented in ways that are familiar and allow the learner to apply relevant past experience
Codable	Key terms used in the text and key features of the illustration are used consistently and in ways that make them more memorable

1.4.5.0 Multimedia for Teaching Purpose

Multimedia is a rapidly evolving technology that is bridging the gap between reality and magic. It involves the integration of different media such as text, sound, video, two dimensional (2D), and three dimensional (3D) graphics and animation, with a capacity for user interaction with Multimedia product. Learning is a cross-sensory experience that requires a lot more imagination. There is thus an absolute need for graphics and animation to help the learners understand "difficult" subjects that rely heavily on imagination. For education the 2D and 3D animation is making it possible for more individuals than ever to access knowledge and learn in new and different ways. Video communication was found useful in explaining and demonstrating the

process part of teaching. At the dawn of 21st century, the education landscape is changing. Universities, Colleges and Schools are experiencing growing enrollments responding to demands for higher standards. Animation is enabling us to address these educational challenges, bringing learning to the students instead of bringing students to learning. It is allowing for the creation to teach creativity that defines the constraints of the time and distance as it provides access to knowledge that was once difficult to obtain. The application of multimedia in teaching makes teaching methods, teaching concepts and forms, teaching structure, as well as theories change as according to Elsie Nanji, "Multimedia is a natural extension of a creative mind. It helps you harness the potential of ideas." Roger Slack (1999) in PEDACTICE: The Use of Multimedia in Schools stated the growth of information and communication technology (ICT) in society is reflected in policies to encourage the use of ICT in education and the development of educational multimedia."

1.4.5.1 Scenario of the Use of Multimedia in Educational Institutions

With the development of modern technology, multimedia has entered into teaching and had quick development. If we look at the situation in today's educational institutions, we can observe that technology-augmented classroom teaching indeed have become established parts of everyday teaching and learning. Groves and Zemel (2000). Acceptance and use of multimedia in the classroom has reached the point today that suggests, multimedia is critically important to teaching. Today, multimedia technologies application has come true. The use of various media in the classroom has been observed and examined as to their impact on educational outcomes for nearly 100 years. Research and development performed in the last couple of years created tools and systems for Computer technology for teaching that varies from subject to subject and from teacher to teacher and studied, evaluated, and established useful usage scenarios. Use of technology in the classroom has seen many changes from such things as slides and silent film, motion pictures with sound, television, interactive computer-assisted instruction, to internet and digital-based multimedia presentations. However, in general, three approaches have reached a prominent position in the field of computer-supported education today: Extensive use of digital

slide-show presentations, the utilization of educational mini-applications (for example specialized software, dynamic Web pages, or Java Applets), and recording (for example via traditional videotaping or automatic screen capturing) and/or transmission of classroom lectures. Recording a video of the entire lecture showing the board, the lecturer, and featuring an audio track enables students to follow a lecture remotely and to recall previous sessions. Recently these have also begun to be published as podcasts, enabling learners to use the materials even on their mobile audio devices. Computer usage in the classroom is no longer restricted to the lecturer, but many students have notebook computers which can be included in the learning process. Smaller mobile devices such as PDAs or cell phones are becoming more and more powerful and ubiquitous. Better pen-based interfaces and screens are becoming available. Question is how educational content should be presented, deployed, navigated, searched, retrieved, edited, combined, exchanged, and reused in an appropriate and proper way to make learning of particular subject effective.

1.4.6 Importance of Multimedia for Teaching Geography

According to Trollip and Alessi (1988) "one of the purposes of adding computers to classroom instruction is to facilitate learning for students by improving the quality and quantity of what they know. Computer technology plays a critical role in the discipline of Geography." McCormick *et al.* (1987, as cited by Couclelis, 1998) stated that human beings have a natural ability to process visual information quickly and efficiently. (Fitzpatrick, 1990) stated "Computers can both quicken and enrich Geography instruction". Francis Dwyer (1978) found that pictures help young adults learn when they are optimally realistic, when sufficient time is given to interpret them and, in the case of instructional books, when text alone would not be as effective. Klein (1987) in comparing animated images with static images finds that animation is distinguished in the ability to demonstrate changes in both movement and direction. Therefore, animation can reduce abstraction in temporal concepts and better display changes over time. The evidence suggests that animated imagery may play an important role in physical Geography education being more abstract in nature. Strahler & Strahler (1987, p. 1) stated "A physical geographer should consider the

earth in terms of flow systems of matter and energy, each consisting of connected pathways through which matter, or energy, or both move continuously". Accordingly, continuous movement over space and time is better illustrated by animated rather than static images. Gold *et al.* (1991) Computer programs that produce animated simulations are considered ideal in demonstrating physical processes such as sediment transport and deposition and other concepts. Mayer and Gallini (1990), basing their conclusions in dual-coding theory, states that the concurrent presentation of verbal and visual information allows students to build connections between the two. MacEachren & Ganter, (1990) reported that visualisation is an increasingly used term in Geography that refers to both the ability to process visual information and the design of concrete visual representations meant to assist such processing. Both must be understood to evaluate the relative importance of visual representation in geographic education. (Halocha, 2002; Taylor, 2003) opine that ICT enables teachers to engage and motivate pupils about geographical concepts to a greater degree. (Freundschuh & Hellevik, 1999) reported in a study in which students learned about changing agricultural patterns using multimedia and animated maps where the students found multimedia to be more interesting and fun to use than traditional text-based learning.

1.4.7 Multimedia Packages in Teaching of Geography

Education has always acknowledged versatility and efficiency of multi-media communications. Multimedia does not necessarily require computers. For example, geographic educators often combine the use of slides, overheads, chalkboards, movies, videos, and sound recordings in their lectures and academic presentations. Further, atlases have a long tradition of integrating text, images, maps, diagrams, and graphs. Thus the multimedia concept is not completely new to geographers. But now, one may say that the movement of educational technology is multi-media based with computers as referred and substantiated above. Now has come the time to make use of computer based multimedia packages in the field of education to make teaching-learning process more effective and interesting. Multimedia is regarded as more than mere technology by Researchers. The typical design of multimedia is an array of

representational forms (e.g. image, map, diagram, sound, video). Multimedia is getting equipped with an array of computers, software, network connections, and projection equipment. Geography is one curricular area that has really gained from computer technology and further can gain. Sound, movement, colour and lots of ways to present the facts come alive with computers and make Geography instruction exciting and fulfilling. In order to improve the effectiveness and efficiency 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. The subject matter is now far more topical, challenging and pertinent to the modern world. But many teachers of Geography appear to prefer the still pictures, as in the film strip, to the moving pictures. Is there any value in movement as in cine film in the teaching of Geography? The value lies precisely in the implication of the word 'movement'. If we wish to help the children to grasp the human aspect of the relationship between man and his home, the earth, the moving pictures is of greater value than the still, though both have their place. Moreover the excitement inherent in the movement acts as a stimulus to imagination and hence helps to extend experience. (Ofsted, 2004a) 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. In Geography, ICT can help pupils in various ways.

- To enhance geographical knowledge and improve geographical enquiry skills.
- To develop graphical, statistical and spatial analysis skills.
- To develop mapping skills.
- To experience alternative images of people, places and environments and how environments change.
- To simulate or model geographical systems and environments.
- To communicate with other pupils in contrasting localities by email, webcams and video conferencing.
- To improve the appearance of work by enhancing presentation.
- To increase awareness of the impact of ICT in the changing world.

Fitzpatrick (1993) also asserts that multimedia is particularly appropriate for Geographic education since Geographic concepts should be learned through text, maps, pictures and sound to achieve the fullest learning experience. Arthur C. Clake on emphasizing the importance of technology stated "Any sufficiently advanced technology is indistinguishable from magic". The kind of multimedia packages developed can bring in life animation to simulate the learner's imaginations and make learning an easy process. The CD-ROMs can be prepared by subject experts and multimedia professionals, to fill this vital need. The textbook can be accompanied with the CD-ROM that can be written in crisp, elegant and simple language 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. Looking at its prospects the NCERT included media like television and radio in a well-knit package for training of primary teachers in teaching Social Science and extended it to a large number of teachers in the early of 1975-76. Even the Central government has initiated various measures to promote 2D and 3D animation in various spheres of Government & Education bodies. So, hardly one can deny the fact that a computer animation program offering flexibility, international quality inputs and cost effectiveness has become imperative to cater the needs of the society.

Considering these scope of technology particularly, multimedia technology in the field of teaching Geography, the researcher is taking the help of multimedia technology in preparing a package to teach Geography to standard IX CBSE students.

1.5.0 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, are not considered necessary and are 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 uninteresting 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 colourful. 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 studies 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 is an attempt in this direction to develop a multimedia package on Geography to teach standard IX CBSE students considering these research questions in mind.

1.6.0 RESEARCH QUESTIONS

In the process of formulating the present research study, the following research questions came in the mind of the researcher. The researcher will try to get the answer of these research questions in the process of this research work.

- 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?

1.7.0 STATEMENT OF THE PROBLEM

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

1.8.0 OBJECTIVES OF THE STUDY

The present study is 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.

1.9.0 HYPOTHESIS

The following hypothesis is formed which will be 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.

1.10.0 DEFINITION OF TERMS

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

Multimedia Package: For the present study the multimedia package is 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.

1.11.0 OPERATIONAL DEFINITION OF TERMS

Following terms are operationally defined in the present study.

Achievement in Geography: Achievement in Geography is 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 is considered as the reaction of the students towards the component of the multimedia package. The aggregate qualitative scale value is considered as the overall reaction towards the developed multimedia package.

1.12.0 DELIMITATION OF THE STUDY

The present study is 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 is prescribed by Central Board of Secondary Education for the execution of syllabus in CBSE affiliated schools. These units are (i) India–Size and Location (ii) Physical Features of India (iii) Drainage (iv) Climate (v) Natural Vegetation and Wild Life and (vi) Population.

1.13.0 SCHEME OF CHAPTERIZATIONS

Chapter I deals with the Conceptual Framework of the Present Research Problem, Research Questions, Rational of the Study, Statement of the Problem, Objectives of the Study, Hypotheses, Definition of Terms, Operational Definition of Terms and the Delimitation of the Study.

Chapter II deals with the Review of the Related Literature and the Implication of the Reviewed Literature for the present study.

Chapter III focuses on the Methodology of the Study which includes Design of the Study, Population and Sample of the Study. Tools used for Data Collection, Development of Multimedia Package, Procedure of Data Collection and Techniques of Data Analysis.

Chapter IV includes details of analysis, interpretation of the collected data and discussion.

Chapter V deals with the Summary of the whole study.