CHAPTER 5
Summary, Conclusion and Discussion

5.0.0 Summary

Education, in the narrower sense, is regarded as equivalent to instruction. It consists of the “specific influences” consciously designed in a school or in a college or in an institution to bring in the development and growth of the child. The word school includes the whole machinery of education from Kindergarten to the University. “The education of the child begins with admission in the school and ends with departure from the University. The amount of education received by the child is measured in terms of degrees and diplomas awarded. The school represents formal education as it imparts education directly and systematically. There is deliberate effort on the part of the educator to inculcate certain habits, skills, attitudes or influences in the learner, which are considered to be essential and useful to him. School is a consciously designed institution, the sole concern of which is to educate the child. This special environment is essential to explain our complex society and civilization”.

Education in the wider sense is a life-long process. It begins with the birth of a child and ends with death. It is a continuous process. Continuity is the law of life. Education is not limited to the classroom only; it is also not limited to a particular period of life. Education is a life - long process and goes on from birth to death. Throughout life one goes on learning to adjust oneself to the changing patterns of life. Change is the fundamental law of human existence. Life is a continuous process of growth and development and so education is also a continuous process.

In the school curriculum, each subject plays an important role. Science is a subject which broadens the horizon of an individual and develops various skills and provides opportunity for the professional growth of an individual. Science has important place in modern time. Science has spread its effect on to every field of life. Human beings try to understand the changes around them and constantly receives a great number of impressions through his/her various senses such as hearing, sight, smell, taste and touch. Making an effective use of sense and using communicative ability one accumulates information about one’s surroundings, organizes this information and sets regularities in it and tries to find out why the regularities exist and finally transmits one’s findings to the next generation.
Science is a cumulative and endless series of empirical observations which result in the formation of concepts and theories. Science with both concepts and theories is subjected to modification in the light of further empirical observation. Science provides the logical guidance to the students related to the content and their daily problems. Science has very logically basic ideas which are related to the daily life.

- Science has its basic ways for learning. Science provides us common sense and criteria for doing the work in a systematic manner. Students follow a traditional way of learning but when technology is integrated with science then it provides the strongest and protected space for learning.

- Adopting a panoramic view of science, technology and the innovation system that can be used as reference for the system development and the coordination and integration of its components and rationalizing the system relations and ties with the benefiting sectors.

- An ability to understand and use selected techniques and analytical/survey tools in the practice of science, in particular those applicable to Earth and Space sciences.

For these reasons science subject has become so popular in our schools and is being taught as a compulsory subject. To develop science as a core subject mainly in school education, the government of India after independence appointed a number of commissions to work out the syllabus, infrastructure, evaluation procedure, teaching aids, study material, qualified staff and other allied problems and recommend suggestions. A number of eminent educationists worked on these problems and their recommendations led to the development of science curriculum and established science as a core subject at various levels of education.

Some important commissions and their recommendations have been elucidated:-

**University Education Commission** (1948-49) recommended the inclusion of General Science and Mathematics as core subjects at the middle as well as at the secondary level. **The Secondary Education Commission** (1952-53) considered General Science as a core subject in school curriculum. **Indian Education Commission** (1964-66) recommended that science and mathematics should be taught as compulsory subjects to all pupils as a part of general education during first ten years of schooling. Emphasis should be given on the acquisition of knowledge, ability
to think logically, to draw conclusion and to make decisions at upper primary level. **National Policy on Education** (1986) recommended that science and mathematics should remain as compulsory subjects in the first ten years of school education. It must be strengthened because all the areas of development are based on science and technology.

**Nature of content in General Science at upper primary stage:**

The clarification and understanding of nature and structural arrangement of scientific knowledge can become a framework to provide guidance in the planning, evaluation and consequent restructuring of the content. Content of General Science is an ordered knowledge of natural phenomena and relation between the concepts and conceptual schemes. It has been developed as a result of experimentation and observation and thus explains the objects and events within our natural environment. Science has been evolved into a hierarchical structural arrangement in which the smallest unit or component is **fact**. Innumerable facts have led to the formation of various **concepts** which are abstract ideas about more complex phenomena. In trying to understand the behaviour or occurrence of these concepts in various interrelationships, certain **constructs** are created. With empirical proof, **principles** and **laws** governing phenomena have been identified. When these are stated in a complete universally applicable and proven explanation they are called **theory**. Thus within the structure of content of General Science, these are arranged in **hierarchical arrangement**.

Thus science is an accumulated systematized body of knowledge which includes facts, formula, figures and diagrams, concepts, principles and information. All these form the **Product of science**. Science is not only a product but also a process by which this product of science is obtained **Science as a process** involves classification, experimentation and measurement.

**Objectives of science teaching:**

The objectives of education have been changing from time to time with the philosophy of life and needs of the country. The Indian concept of education differs from the western concept.

The aims of science teaching at different stages have been summarised according to different commissions.
National Council of Educational Research and Training (NCERT) 2001 have suggested the following objectives for Upper Primary stage:

- To expose children to basic processes of science;
- To understand the processes that underlie simple scientific and technological activities;
- To develop some understanding of basic principles and laws of science and their application to solve problems related to daily life;
- To familiarize children with life processes, health, nutrition and human diseases;
- To inculcate in children some of the science and technology related values;
- To provide scientific and technological literacy to the learners.

There are also some general objectives of science teaching which are related to overall development of students according to the needs of the society. These objectives also develop scientific attitude and logical thinking in students. These objectives are as follows:-

- To apply the knowledge of science in everyday life.
- To develop the ability to investigate new knowledge in the field of science.
- To develop scientific attitude in children.
- To develop the capacity how to understand scientific facts on his own.
- To develop the ability to solve problems around oneself.
- To make the child creative.
- To train the child in science processes.
- To develop their curiosity to learn science.
- To train students in scientific method of learning.

The objectives of science teaching can only be achieved if the teaching is effective and is based on the principles of teaching. How will the students learn effectively? It will depend on the method the teacher adopts. Method of teaching is just a way of teaching. Method is the style of presentation of contents in classrooms. There are two major approaches of teaching and learning of science, based on the role and position of teacher and students in teaching-learning process.

In contrast to traditional instruction, this student-centered approach focuses on meaning making, inquiry and authentic activity. The instructional goal in student-centred classrooms, based on constructivist principles of learning, is to create a
learning environment where knowledge is co-constructed by the teacher and students rather than transmitted directly by the teacher.

Despite the concerns of educators about a potential mismatch between instruction and management, from a theoretical point of view, it seems reasonable to expect that teachers would actually strive to match their instructional and managerial approaches. Teachers, who are committed to student-centred instruction, presumably base their instructional decisions on a basic set of assumptions about the way children learn and what they need in the classroom. For example, if such teachers believe that children need to be active participants in the learning process, engage in critical thinking and participate in the problem-solving process, it seems logical to expect them to choose classroom management strategies such as conflict resolution and peer mediation that foster the same skills.

It is important to note that although teacher-centred and student-centred classroom management can be seen as opposite ends of a continuum, it is highly unlikely that any teacher implements a teacher-centred or student-centred approach to classroom management in its purest form. Nonetheless, these lenses are useful ways of examining the dominant orientation of a classroom.

In addition, teachers exert their control through a system of clearly defined rules, routines and punishments that are mandated rather than developed with the students. Generally, teachers identify the rules necessary for an orderly classroom and time is set aside for the teaching of these rules during the first several days of school. When students exhibit undesirable behaviour, advocates of a teacher-centred approach often rely on punishments, such as reprimands, frowns, time outs and loss of special privileges.

Finally, in teacher-centred classrooms, teachers may rely on extrinsic motivation to influence student behaviour. Here, completion of a task is seen as a prerequisite for obtaining something desirable such as social rewards (e.g. praise), activity rewards (e.g. free time, computer time) and tangible rewards (e.g. candy and stickers).

In contrast, a constructivist teacher is interested primarily in helping the child, engage in problems and issues, search below the surface, try out various possible solutions or explanations and finally construct his or her own meaning. In these classrooms, teaching methods or strategies include reflective thinking, inquiry, exploratory discussions, role-playing, demonstrations, projects and simulation games.
What kinds of management strategies support the instructional strategies and goals of a student-centred classroom? Since one of the primary goals is to empower students and strengthen their sense of responsibility, proponents of student-centered classroom management suggest relinquishing hierarchical power structures and sharing control, which they claim will result in a more manageable classroom. One way teachers may share their control with their students is to elicit student participation when generating the classroom rules. Another suggestion is to share responsibility by having students complete classroom tasks such as taking attendance or lunch count, updating the calendar or caring for a class pet. Similarly, students can be given autonomy to decide when to use the bathroom, sharpen pencils and throw out garbage.

Supporters of student-centred management propose that children “see their acceptable, caring behaviour as vital to the maintenance of the group because they have a vested interest in the health of the group as a whole”. However, even in a child-centred environment, behaviour problems will arise. When this happens, student-centred teachers encourage students to take increased responsibility in regulating their own behaviour through conflict resolution and peer mediation programs. Emphasis is also placed on the development of students’ social skills through various strategies such as messages, classroom meetings and community building activities.

Finally, advocates of a student-centred approach to classroom management propose that teachers minimize the use of extrinsic rewards because they may adversely affect student motivation, create reliance on the teacher and encourage appropriate behaviour for the sake of a reward rather than for the good of the group. Instead, teachers are encouraged to use strategies for enhancing a student’s intrinsic motivation, including adapting activities to students’ interests, calling attention to the instrumental value of academic activities, incorporating game-like features and providing opportunities to exercise autonomy and make choices.

The teaching method is the best way of presentation of themselves and content mastery presentation of teachers. Students should discover everything they learn about from their own observations and experiments. Instead of imparting facts the teacher should provide activities in which the students work independently and by this means get training in scientific method.
The teaching learning process is based on some psychological and educational principles. The teacher and student together participate in teaching-learning process. The teacher is a facilitator and instructor of learning and creates conditions to suit the need and requirements of learners. In the present study the focus is on upper primary level students because upper primary level students are not involved in doing activities or get first-hand observations, hence the concepts do not become clear and understandable for them. They may memories and recall without understanding. When the concepts are not cleared in lower classes, their cumulative effect is seen in higher classes, other than this there are new concepts at secondary levels which can be clarified through activities or relevant demonstrations. Thus the student-centered approaches facilitate development of inquiry processes, maximum autonomy and critical thinking. The student-centered learning mainly focuses on student, in particular, on the cognitive development of the student. In this method students play active role and learn through ‘learning by doing’ activity. In modern time lots of teaching aids are available for the better learning of students. One of the newest teaching aids and devices currently being developed and used in innovative programmes is the self-instructional, student paced, Learning Activity Package (LAP). Packaged instruction is based upon the premise that the learner is an individual with unique needs, desires and experiences.

A Learning Activity Package (LAP) is a body of knowledge which focuses on one skill, attitude, idea or concept. LAPs are: - (1) self-instructional (2) student paced (3) student directed and (4) They provide for accountability of learning. (Proctor. K.)

Learning Activity Packages are the packages of resources materials including tapes, slides and printed materials designed to meet the need of a student in a particular instructional sequence.

Through this Learning Activity Package students are active rather than passive. Learning Activity Package provides students with oppournities to develop their self-esteem and an increased level of achievement in the content area. These techniques allow students to work through the material in a systematic, efficient and timely manner.

When designing Learning Activity Package many components need to be addressed for e.g., will the learner have adequate time to achieve the task at an

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5 K. Proctor “Designing a Learning Activity Package” red river college. Pg.no. 3-5.
acceptable level? Do the students have the knowledge and understanding necessary to complete the task? Can students formulate questions to ask when conceptual information is needed? Do students have the necessary motor skills that may be required? Are the students mature enough to be self-motivated learners? Thus the learning activity packages provide information to students on specific topics. The package contains introduction, objectives, explanations, allotted time, related readings, pre and post measures and a list of required supplies (George and Alexander 1993). Thus the Learning Activity Package becomes the source of motivating of student for learning. In teaching learning process, computer based Learning Activity Package is helpful in fulfillment of students’ learning objectives. LAP is an essential tool for teachers and students. On the basis of these ideas, the questions arise in researcher’s mind. Such as: is LAP sufficient learning package for individual learners according to their individual differences? Does the Learning Activity package fulfill students’ curiosity, problem solving ability, scientific attitude, learning capacity, self-evaluation level and synthesis and analysis qualities? Does the Learning Activity Package enhance the level of reading performance, cognitive styles, self-confidence, computing skills, learner content interaction, learner learner interaction, self-regulated learning and self-efficacy? Is the Learning Activity package appropriate for Upper Primary level students and is Learning Activity Package more effective than traditional teaching methods? Does the Learning Activity Package have positive impact on academic achievement, learning performance, motivation level for learning, psychomotor activities and content understanding? To find out the solution of these questions, researcher selected this problem. “Development of ‘LAP’ and Its effectiveness in science learning at upper primary level”. In the light of the significance of the study, the following are the objectives of the present study. (1) To analyze the content of science book at Upper Primary Level. (2) To develop the Learning Activity Package for science learning with reference to the following: (a) Determination of objectives for science concepts learning. (b) Development of learning activities for science concepts. (c) Development of evaluation activities for science concepts. (3) To study the effectiveness of learning activity package with reference to:

➢ Students’ achievement
➢ Students’ opinion towards the Learning Activity Package

To achieve these objectives the following hypotheses have been formulated by the researcher. (1) Concept could be identified for Upper Primary Level Science content. (2) The Learning Activity Package could be developed for learning of science concepts. (a) Objectives could be determined in LAP for learning of Science concepts. (b) Learning activities could be developed in LAP for learning of Science concepts. (c) Evaluation activities can be developed in LAP for evaluation of science concepts. (3) There is significant difference between the achievement scores of pre-test and post-test. (4) There is difference in students’ opinion towards LAP. The objective of the present study is to develop LAP and to study its effectiveness. In order to achieve the objective of the study, the researcher has used single group pre-test post-test design. This type of design is considered in experimental research. In the present study the sources of data are Students of 8th class and NCERT text book of Science for 8th class.

On the basis of the above in this study first text book of General Science prescribed by National Council of Educational Research and Training for 8th class is selected purposively. Secondly identified concepts are selected randomly. Thirdly 34 students of class 8th were selected randomly from all the sections. It is assumed in this study that all the sections of 8th class and each section of 8th class has the students of all variety such as low to high intelligence level and low to high achievement levels. Researcher selected these tools to achieve the research objectives. Achievement Test:- In the present study the researcher made three parallel achievement tests, in which one of them is used as a pre-test and other one is used as post-test. Students’ opinion scale: - Students’ opinion scale was constructed by the researcher to know the effectiveness of learning activity package. It consists of five aspects related to Learning Activity Package (LAP) such as objective fulfillment of concept; content presentation, visual presentation for content, relevance of Learning Activity Package for learning and evaluation activities. In the present study nature of data is quantitative and qualitative. In the present study both descriptive and inferential techniques is used for the analysis of data. Mainly mean, standard deviation and ‘t’ Test is used. Other relevant statistical measures like graphical representation are also used.
5.1.0 Conclusion and Discussion

5.1.1 The results and conclusions are presented hypothesis wise. The first hypothesis of the study is “Concepts could be identified for Upper Primary Level Science content.” Researcher analyzed the content of 8th class science book and found eighteen chapters in this book and approximately 339 concepts were identified from these chapters. This agrees with earlier studies of Yang D. C. and Li. M.N. 2013, who studied on “Interactive White Board: Effective Interactive Teaching Strategy Designs for Biology Teaching.” The objective of the study was to design interactive teaching strategies with interactive whiteboard and investigate their effectiveness on Biology Teaching. The researchers found that traditional information and communication technology integrated instruction, interactive whiteboard is more effective in improving student learning. Kaundaliya D. P. (2005) studied on “A Study of an Effectiveness of Self Learning Material for the Teaching of Basic Concepts of Accountancy.” The objective of the study was to construct and study the self-learning material on comparison of traditional method for teaching of the basic concept of the subject Accountancy in standard XI. The researcher found that the self-learning material was more effective than lecture method in teaching of the subject accountancy in standard XI and Binaraj, A., Sankaranarayanapal and Celineperrira (2014) studied on the “Construction and Validation of Individualized Audio Instruction Material for Enhancing Teaching of Physics.” The objective of the study was to develop audio instructional material to enhance teaching in the selected content and determine the extent of effectiveness of the individualized audio instructional material based method in teaching of physics. The researcher found that individualized audio instruction material based teaching is effective in teaching physics. The individualized audio instruction material is effective in self-learning also. Hence, this learning material is an effective device for teaching and learning physics for high school students.

5.1.2 It is revealed from the second hypothesis that The Learning Activity Package could be developed for learning of science concepts in reference to objectives, activities for concept learning and evaluation activities. Researcher made instructional objectives for selected concepts after developing the audio, video, animation based ppts for concept learning. After this the researcher made Achievement Tests for evaluation activities such as multiple choice questions, matching, true-false, one line
questions and identification of images. This agrees with earlier studies of Paranjape, V.G. (2001) who studied on “Development of an Instructional System for Mathematics through Content-cum-Methodology Approach”. The objective of the study was to analyse the traditional approach and content-cum-methodology (CCM) approach of teaching mathematics. The finding revealed that instructional system for mathematics developed under the study was more effective than conventional instructional system for students and pupil teachers. Balasubramanan N. and Meera S.(2002) studied on “Relative Effectiveness of Different Models of Computer Based Instruction in Teaching Biology”. The objective of the study was to find out the significant difference among the different models of computer assisted instructional strategy viz. tutorial, drill and practice in realizing the instructional objective in Biology at standard XI. The researcher found that CAI is more effective than the tutorial and simulation models in teaching biology at standard XI and Vaishnav R. and Parashar G. S. (2005) studied on “Effectiveness of Computer Aided Instruction for Teaching Biology.” The objective of the study was to develop computer aided instruction in biology on topic “Food Nutrition and Health” and study its effectiveness in comparison to traditional method. The researcher found that the computer aided instruction material was effective in terms of the achievement and superior to the traditional method when intelligence was taken as co-variate.

5.1.3 It is revealed from the third hypothesis that there is significant difference between the achievement scores of pre-test and post-test. Researcher found the significant difference between pre and post scores of achievement tests. These agree with earlier studies of Sankhala D. P. (2013), who has conducted a research study on the “Use of Self Learning Method for Effective Science Teaching”. The objective of the study was to ascertain the impact of teaching with the help of Self Learning Method over Traditional Method. The results showed that self-learning method is more effective. Students of standard VII showed improved performance when they studied content matter on their own. Darsana, B.G. and Rajeswari, K. (2014) studied on “Effectiveness of a Multimedia Package as Self Learning Material for Enhancing Achievement in Chemistry at Secondary Level.” The objective of the study was to test the effectiveness of the multimedia package as a self-learning material by comparing the achievement in chemistry of the treatment group viz. activity oriented method as control group and multimedia package as self-learning
material as experimental group. The study indicates that the self-learning multimedia package is very effective than that of the traditional way of teaching. The students who were taught chemistry through multimedia package had shown significant improvement in their achievement. **Gupta Madhu and Nagpal Chirag (2010)**, Their study was entitled, “Developing and Implementing the Programme Instruction Material of Physics for Senior Secondary School Students”. The objective of the study was to develop and implement programme in branching style and compare the effectiveness of programme instruction method and expository method in teaching the selected concepts of physics. The researchers adopted pre-test and post-test experimental design. The researcher found that the experimental group mean score was higher than the control group and the retention test mean score was higher in favour of experimental group and **Sharma, A. and Sansanwal D. N. (2002)** studied on “Comparison among Video Based Instructional Strategies for Teaching Science at Class IX level in terms of Achievement.” The objective of the study was to compare the mean scores of achievement of students in Science belonging to different video based instructional strategies for teaching science at class IX level. The researcher found that the treatment had significant effect on achievement in science belonging to different video based instructional strategies for teaching science. The video viewing followed by lecture as well as video viewing followed by discussion were significantly higher than those of video viewing only. The mean score of science achievement of video viewing followed by lecture was found to be significantly superior of video viewing followed by discussion.

5.1.4 It is revealed from the fourth hypothesis that there is difference in students’ opinion towards LAP. Researcher analysed that students have difference in their opinion towards LAP. Mostly student strongly agree and agree with LAP. Few students disagree and strongly disagree with it. Mostly students gave their response towards agree and strongly agree category on five dimensions which are objective fulfillment of concept, content presentation, visual presentation for content, relevance for learning activity package for learning and evaluation activities. Some students gave their response as neutral and few students responded towards disagree and strongly disagree category. On the basis of this result, the researcher concludes that students like LAP for learning concept.
5.2.0 EDUCATIONAL IMPLICATIONS

The educational implications of the present study are not difficult to discern. The subject of study is of much importance in the present conditions of teaching-learning process inclusion with Educational technology as there is a growing focus on learning effectiveness of the school students including the application of multimedia technology.

❖ For the authorities

It should be remembered that learning effectiveness is very necessary for students. This study clearly indicates that there is significant difference in learning effectiveness of LAP. Hence it is time to incorporate a set of inputs in teaching-learning process through multimedia technology. Learning and achievement presentation can be increased by giving technology based facilities, computer based facilities, learning based material, multimedia based stimuli and individual learning based material.

This study also shows that the learners who have high scores of achievements show high level of learning than the students who have low level of scores. Learning from the traditional methods and traditional teaching aids evidence the low level of mean scores. Students seem lagging behind in learning levels. As a matter of strategy, therefore these students need to be brought on par with other students by increasing their confidence, adaptability and individual learning capacity. This can be done by arranging multimedia based learning enhancement courses, orientation programmes, seminars, workshops and learning programs for students. There are also some efforts for teachers to improve their teaching strategies for the teaching-learning process. For improvement, teaching strategy of teachers should also be provided with technology based teaching strategy refresher courses, short term courses and multimedia based teaching orientations.

The researcher also found positive opinions of students for LAP, hence the authorities should provide some learning based material, multimedia based material and individual differences based self-learning material for students to enhance their learning and mean scores.

❖ For teacher educators

The teacher educators will also be benefited with this study because this is the teaching-learning based study which directly affects the personality of the students in
the teacher education institutions. Teacher educators should know about teaching-learning effectiveness, value of students’ motivation level, understanding level of students and content mastery level of students or always try to increases all these important variables. As educators, we have a responsibility to support students in understanding particular facts, concepts and principles as those are the core responsibilities for educators.

❖ For the government and policy maker

This study clearly shows that multimedia based teaching material LAP leads to the better learning of students, so policy makers should always keep in mind while policy making that there should be opportunities for development and enhancement of students achievement and learning level of students. Government and policy makers will make government policies which include various types of multimedia based activities and authorities for teachers teaching through multimedia aids on cognitive level of students.

❖ For teachers

This study is also helpful for teachers. If teachers follow multimedia based teaching aids then students also enhance their learning and achievement level. If teachers follow multimedia based aids in their teaching, then teachers and students also enhance their achievement level and learning level. There are different backgrounds related to family backgrounds such as urban and rural background. In rural areas LPA is used as a suitable learning material for teachers and students also. In rural areas, there is lack of some educational facilities such as lack of internet facilities, lack of computer related material and more self-learning materials. On the basis of all references teachers can use LAP to enhance quality of teaching-learning process.

❖ For students

It is important to find methods and programs to produce a significant percentage of information to students using programs, games, media flash, etc. In this sample demonstration, we have tried to prove that it is possible to mix education with entertainment. This study suggests to students how they can enhance their learning through multimedia based learning materials such as self-study material, audio-video based activities and animation based ppts; also helpful to enhance their achievement and learning level.
For institutions

This study will also help the schools and institution authorities by making them aware of the reasons of stress which students have due to the institutions. As we have studied in the present study, poor infrastructure, high tuition fee, poor hostel facilities, availability of low level of teaching aids, untrained in multimedia teaching reference and lack of computer facilities are some reasons which affect the learning and achievement level of students. This study will help them to identify these causes and improve overall educational facilities which will enhance the outcomes, performance and growth of the students as well as institutions.

For parents

This study will also help the parents in a way to meet the challenges. A family plays an important role in students’ performance. With the help of this study parents will be aware about other learning packages and they can enhance learning and achievement of their children with the help of this package.

5.3.0 Suggestion for further research

As we all know research is a never ending process; it is a continuous process, so we can say that no study is final in any area whether it is a behavioural or experimental science. Thus this research does not claim that the findings of the study are absolute and final; further research may always be done.

1. Similar study can be done at different academic levels, for example Secondary and Higher Secondary level.
2. Multimedia effectiveness with reference to learning in science can be studied with reference to other subjects.
3. A comparative study of multimedia effectiveness in learning can be studied in reference to gender and other personality traits.
4. A comparative study of multimedia effectiveness in learning can be studied with reference to the type of school.
5. A study of development of LAP for entire syllabus of science at Upper Primary level can be studied.
6. A comparative study of Multimedia effectiveness in learning can be studied with reference to different subjects.
5.4.0 **Delimitations of the study**

The delimitations of the study are as follows:-

- The present study is conducted only in Saraswati Mandir, (Upper Primary School) Banasthali University, Rajasthan.
- The study is conducted only on 8th class students.
- The study is conducted only on General Science text book given by NCERT.
- Self-learning activities are limited to power point presentation and video clips.