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CHAPTER ONE
INTRODUCTION

1.0 BACKGROUND

In earlier times, education was primarily meant for survival. Children were taught the necessary skills for living. Gradually however, man began to use education for a variety of purposes. Today we realize that education may be used not only for the purpose of survival but for a more enriched life.

According to John Dewey, “Education is the development of all those capacities in the individual which will enable him to control his environment and fulfill his responsibilities” (Bhatia and Bhatia, 2004, p6)

Gandhiji felt that physical and intellectual development was necessary, but the training of a child’s heart and spirit was more important. He remarked, “By education, I mean all round drawing out of the best in child and man-body, mind and spirit. Literacy is not the end of education or even the beginning. It is one of means whereby man and women can be educated. Literacy in itself is no education.” (Aggarwal, 1981, p7)

In the present era of globalization, privatization and liberalization the concept of education is also changing and becoming vast. Education, which was teacher-centered, has now become child-centered. It means the student is the main and important factor of teaching - learning process. These are the days of self-directed learning, active learning and lifelong learning. The main aim of education is to give knowledge to the student and bring out all round development which will enable him to face this competitive world.

1.1 RESEARCH QUESTIONS

1. What is the importance of study habits techniques?
2. What are the present study habits of secondary level students?
3. Is there any difference between study habits of boys and girls?
4. Whether proper study habits can be developed through mnemonics, charts and laws of organization by Gestalt psychology or not?
5. How can proper study habits be developed through mnemonics, charts and laws of organization by Gestalt psychology?
6. Whether other techniques can be used to develop study habits of secondary level student or not?
7. How will study habits techniques affect the academic achievement of the student?

1.2 IMPORTANCE OF SCIENCE

Science has become an integral part of human life. We cannot live luxuriously without Science and its application. We have to consider the contribution of Science in each and every activity of human beings.

As we know that Pandit Nehru rightly said, “Life without Science is a hell.” (Deshpande, Aher, 1987, p3)

Science, besides satisfying the intellectual curiosity of man and providing material and media for intellectual exercise, has disciplinary effect on the minds of individuals. The achievements and the benefits of Science and Technology can be observed in all sectors and all levels of the modern society. The modern man has applied Science and Technology for well-being of mankind. The importance of Science is proved in various fields like Industry, Agriculture, Medicine, Transport and Communication Technology as well. Every action of a modern man is practically guided by the effects of Science. Even, each and every natural phenomenon that we see in our everyday life can be explained with the help of simple scientific principles.

We shall totally agree with the statement, “Modern Science is no longer confined to the surface of this globe, its sphere of achievements reaches beyond the Earth.” In short, Science has brought the world closer and played a very important role in changing human outlook. Thus, Science is very important aspect of our life and Science Education imparted in our schools plays a vital role in the development of an individual and nation.
At secondary level, Science is very important as it helps to decide the further course of studies for the students. In various board examinations like Secondary school Certificate (S.S.C.) and Higher Secondary Certificate (H.S.C.), Competitive examinations like NEET or JEE, Science subject is very important for entrance into the Engineering, Medical streams and Research.

1.3 MEANING AND NATURE OF SCIENCE

Science is life; it is the way of living life. Science is a broader concept. The word ‘Science’ is derived from the Latin word ‘Scientia’ which means ‘Knowledge’. Science is usually defined as systematized knowledge.

According to Frederic Fitzpatrick, “Science is cumulative and endless series of empirical observations which results in the formation of concepts and theories, with both concepts and theories being subject to modification in the light of further empirical observations. Science is both a body of knowledge and a process of acquiring it. (Rao, Latha, 1995, p 88)

Einstein defined, “Science is an attempt to make the chaotic diversity of our sense experiences, correspond to logically uniform system of thought.” (Bondarde, Bondarde and Kadam, 2004, p 15 and 16)

“Science is the creative response to the curiosity and capacity to wonder present amongst every human being.” (National Curriculum Framework, 2000, p58)

According to Science Manpower Project “Science is a cumulative and endless series of empirical observations which result in the formation of concepts and theories, with both concepts and theories being subject to modification in the light of further empirical observation. Science is both of knowledge and the process of acquiring and refining knowledge.” (Sharma, 1999, p22)
1.3.1 SOME VALUABLE THOUGHTS ABOUT SCIENCE

“Science may set limits to knowledge, but should not set limits to imagination” - Russell Bertrand

“Science is nothing but developed perception, interpreted intent; common sense rounded out and minutely articulated.”- Santayana George

“Science is organized knowledge, Wisdom is organized life.” - Kant Immanuel

“I am among those who think that Science has great beauty. A scientist in his laboratory is not only a technician, he is also a child placed before natural phenomena which impress him like a fairy tale.”- Curie Marie

(www.quotationspage.com/quotes/862.html)

According to Kothari Commission “Science strengthens the commitment of man to free enquiry and the quest truth as his highest duty and obligation. It loosens the bond of dogmatism and acts as powerful dispeller of fear and superstition, fatalism and passive resignation.” (Report of Education Commission, 1964-66, p 7)

Thus various thinkers and commissions have defined Science and elaborated its importance.
1.4 PLACE OF SCIENCE IN SCHOOL CURRICULUM

Science has contributed in our ways of thinking, attitudes, interest and outlook. Hence Science education imparted in our schools play a vital role in personal, social and also in national development.

In Maharashtra, Science is a compulsory subject at school level from 1977.

Place of Science as mentioned in National Education Policy 1986, as modified in 1992

- Science education will be strengthened so as to develop in the child well defined abilities and values such as the spirit of inquiry, creativity, objectivity, the courage to question, and an aesthetic sensibility.

- Science education programmes will be designed to enable the learner to acquire problem solving and decision making skills and to discover the relationship of Science with health, agriculture, industry and other aspects of daily life. Every effort will be made to extend Science education to the vast numbers who have remained outside the pale of formal education.

(mhrd.gov.in/sites/upload file, retrieved on 05.05.2014)

Place of Science as mentioned in National Curriculum Framework 2005

- Content, process and language of Science teaching must commensurate with the learner stage-range and cognitive reach.

- Science teaching should engage the learners in acquiring methods and processes that will nurture their curiosity and creativity, particularly in relation to the environment.

- Science teaching should be placed in the wider context of children’s environment to equip them with the requisite knowledge and skills to enter the world of work.

- Awareness of environmental concerns must permeate the entire school curriculum.

(http://www.ncert.nic.in)
AS per the recommendations of The National Curriculum Framework:  
(Secondary Ministry of Education, Culture and Human Resources, November 2009) Learning Outcomes for Science are -

- Acquire knowledge and understanding of important scientific ideas and explanatory frameworks that relate to their everyday life experiences and needs.
- Select and apply scientific knowledge, understanding and skills across a range of contexts in their daily life.
- Understand how scientific inquiry is conducted and appreciate the reasoning and kinds of evidence that underpin scientific knowledge claims.
- Discuss with confidence a range of personal, social, ethical and other issues that have scientific and technological dimensions.
- Develop skills and attitudes necessary to help them contribute to sustainable social and economic development.
- Communicate scientific understanding to different audiences for a range of purposes, including safe practices.
- Appreciate the role that Science and technology, including ICT, play in the modern world.
- Search for relevant scientific data and information from a wide range of sources and communicate these effectively through various means.

(http://www.ibe.unesco.org)

1.5 HISTORY OF SCIENCE TEACHING AND RECOMMENDATIONS OF COMMITTEES

Before Independence, Charter Act of 1893, acted as the turning point in the history of Education in India. Since then, it was decided to teach Science at school level.

Woods’ Education Dispatch of 1854 may be said to have laid the foundation for the present system.
During 1902, Science was taught as a compulsory subject in few schools. In 1948, University Education Commission, under the chairmanship of Dr. Sarvapalli Radhakrishnan, recommended inclusion of general Science as courses of study in secondary schools. Later in 1953, Secondary Education Commission under Dr. L. Mudaliar as Chairman recommended compulsory inclusion of General Science and Mathematics as a core subjects at the middle as well as Secondary level.

In ‘All India Seminar on teaching of Science’ held at Shimla Hills in 1956, it was recommended General Science as a core subject for the Secondary stage of Education. The aims at this stage should be:

- To familiarize the student with the world he lives in and the impact of Science on society.
- To acquaint him with scientific method. Science should be taught now as the discipline of mind.
- Diversification of courses should be there for specialization.

According to Education Commission of 1964-66 (Kothari Commission)

- The aim of teaching Science in the primary school should be to develop proper understanding of the main facts, concepts, principles and processes in the physical and biological environment.
- At the higher primary (middle) stage, the emphasis must shift to the acquisition of knowledge together with the ability to think logically, to draw conclusions at higher level.
- At secondary (High and Higher Secondary) stage, Science as a discipline of the mind and a preparation for Higher Education deserves special emphasis. In the lower secondary Biology, Chemistry, Earth Sciences and physics should be taught as compulsory subjects for all the pupils.

(Sharma, 1999, p 19)

Thus, considering all the above discussion, the importance of Science in daily life as well as in school curriculum is underlined.
1.6 IMPORTANCE OF SCIENCE TEACHING

Science is very important in our day to day activity. Science teaching in schools plays a very important role to mould the students mind as it helps to inculcate the following values:

![Figure: 1.2 Values in Science teaching](image)

1. **Intellectual Value**:

   American Association for the advancement of Science in 1958 stated, “We believe that the Primary goal of education should be intellectual development of an individual.” (Sharma, 1999, p23). Study of Science helps to create interest in knowing the facts, spirit of enquiry and judgment above the prejudice. Science helps to widen the knowledge and makes the learner intellectually competent.

2. **Utilitarian Value**:

   In our daily activities we need Science and its application. From sunrise to sunset each aspect of our life is related to Science. It is important for every individual to know various aspects of Science and its application.
3. **Vocational Value**:

The vocational value of Science is very important, as it gives opportunity for many vocations after specialization of the subject. e.g. Research scholars, Professors, Chemist, Doctors, Engineers, Biochemists, Agriculturalists etc. Therefore Vocational training of Science is very important and an essential part of our society.

4. **Training in Scientific Method**:

Science helps the students to develop Scientific thinking, Scientific attitude, open mindedness, objectivity etc.

5. **Aesthetic Value**:

The discoveries of mysteries of nature are the concern of Science and everything in nature is beautiful. Therefore the subject plays very important role in developing the aesthetic value. The aesthetic aspiration of men and their fulfillment take inspiration from nature and nature is the subject matter of Science.

6. **Cultural Value**:

Science plays a very important role in changing our thinking, beliefs, traditions, customs and therefore culture also. The culture of every individual depends on Science itself. Science brings out changes in our way of thinking and living life.

7. **Moral Value**:

“Science is the search for truth in truthful manner” (Sharma, 1999, p24). In general other professions may use false means and get success but a scientist can never hide the truth or true statement.
1.7 MEANING OF STUDY HABITS

The learner’s Dictionary has defined study as a “Mental effort to obtain knowledge”.

Study means application of the knowledge to the subject.

According to Armstrong (1956) “Study is a hard work, no easy substitute is available.”

To study means application of the mind to books, arts or any subject for the purpose of acquiring knowledge. To study means to read and examine carefully so as to understand the topic.

Habit means fixed routine responses to the particular situation by human being.

Habit is pattern of various activities which are done by the learner without conscious efforts.

Study habits means various activities carried out by an individual during learning process to improve learning.

“Study habit means a fixed routine behavior imbibed by an individual to learn.” (Yadav, Ansari, Savant, 2000, p 914)

The following diagram explains the meaning of study habits in short.
Figure: 1.3 Meaning of Study Habits
Study habit is defined as “The complexity of reading behavior of a person, resulting from the varying degrees of interaction, of a number of variable factors, when he seeks graphic records for acquiring information or knowledge”. (Nagaraju, 2004, p16)

“Study habits are defined as those techniques, such as summarizing, note taking, outlining or locating material which learners employ to assist themselves in the efficient learning of the material at hand. The term ‘Study Habit’ implies a sort of more or less permanent method of studying.” (Dr. Chand, 2013, p 90)

According to Good’s dictionary of education, “Study habit is the tendency of pupil to study when the opportunities are given, the pupil’s way of studying whether systematic or unsystematic, efficient or inefficient.”

“In the literature, study skills are usually defined as students’ ability to manage time and other resources to complete an academic task successfully. ‘Study habit’ is the amount and kind of studying routines which the student is used during a regular period of study occurred in a conducive environment. (Ozsoy, Memis, Temur, 2009, p156)

Crede and Kuncel (2008) defines study habit as study routines, including, but not restricted to, frequency of studying sessions, review of material, self-testing, rehearsal of learned material, and studying in a conducive environment.

“Study habit may be defined as those conditions and mental state in which a student’s mind is set for learning something with as ease and he starts taking interest in that particular topic and score well when testing his skill on that particular topic.” (Dahiya, 2013, p93)

Study habit is one such important strategy that has been evolved as a useful tool in leading students towards meaningful and proper learning. Study habit means tendency of a student to study in proper or improper way. Study-habit is a process from which an individual gets proper input to feed his hunger and to quench his thirst for knowledge.
1.8 IMPORTANCE OF STUDY HABITS

Learning occupies a very important place in our life. A Teacher can create the situation that helps the students to learn quickly and to retain it. Most of the things which we do or do not do are influenced by what we learn and how we learn it. Efficient learning process does not depend on teaching alone but it depends on learning procedures and learning techniques as well. The acquisition, integration, organization and storage of knowledge are all facilitated by the use and practice of effective and efficient learning strategies and techniques.

‘Learning to learn’ is one of the main purposes of teaching. Training and Learning skills are major factors that help students for attaining the goal. Students need direction and guidance about how to study and how to become good achievers.

“Study habits contribute significantly in the development of knowledge and perceptual capacities.” (Yadav, Ansari, Savant, 2000, p 914)

There is a need, to guide the students about meaningful learning so that they can be able to memorize things in a better way. Students improve their performance because they can learn most of the concepts clearly through proper study habits.

“Study habits refer to learning which leads to the achievement of a learner’s goal, through a prescribed pattern of steady behavior.” (Ogbodo, 2010, p 229)

A student must know learning method and study habits, which help him to achieve the goals of education. Learning through good study habits is the key process in human behavior. Parents and teachers always show concern for learning of the child because learning through good study habits influences our language, our skills, attitudes, interests and even our goals.

It is a general observation that a number of students are seen complaining that they do not secure good marks, for this on many occasions the poor study habits are to be blamed. They lack proper attitude towards studies so they hardly care for developing good study habits. Many students learn things for longer time, hours together, continuously without understanding. During examination if they fail to remember a word in the beginning, they would forget everything. Therefore students
should develop proper study habits, which would help them to study and retain the concepts correctly and with proper understanding.

“Learning involves the development of proper study habits and skills. The problem of study habits is one of the universe importances both from theoretical and practical aspect. Efficient learning depends upon the development of efficient study habits and skills.” (Nadeem, Puja, Bhat, 2014, p91)

It is a known fact that every person has its own way of learning. It is also true that what works for one person may not work for another. So if certain techniques are used by the students to develop their study habits it may show different and good results. There is no magic formula for success in examination but hard work and use of study habits may help to change the results. According to a proverb ‘Practice makes man perfect’ but we can say that ‘Perfect practice makes man perfect’. For students to be an achiever, the way of perfect practice should be shown to make them perfect in their studies.

1.9 NEED OF THE PRESENT RESEARCH STUDY

In past, students have learnt to take notes in linear form, either copying them from the teacher or creating their own notes. This approach can be useful to some students, but it is not clear to other students and does not have as many possibilities which study habit provides.

For all students academic achievement has a great value in their career but at the same time all the students can never gain or reach the same level of achievement in the examination. The percentage of failures at secondary level is also increasing. There are many factors affecting the achievement like stress, tough competition, low confidence level, lack of motivation, improper attitude towards study and also way of studying. A large number of failures at secondary level are an issue of great concern for teachers, parents and administrators.

The target of the study is secondary level std. 9 students, as these students are in the stage of self study. They want to do independent studies. Secondary level is the junction between primary education and college education. If at this age proper study
habits are developed, it will stay with the students forever and will help them to shape up their interests, attitudes, skills and even goals.

The sample chosen by the researcher is mostly from lower middle class, most of the students work to earn for their family and also for their education. They have a strong desire to get education. These students have less facility for their study at home. There is a lack of personal attention to these students. The students from lower middle class of the society have less exposure to various activities related to their study habits. Researcher felt the need to judge their study habits at present and to guide these students to have desirable study habits which will help them to better their lives and future.

In today’s world of tough competition, it is the need of the hour that students should develop proper study habits. They should know the proper, efficient and systematic way of learning to face various competitions. If the parents are well aware of the situation they can guide their children or make arrangements for the same but the researcher thought of lower middle class students wherein the parents are also not aware of all these things.

Researcher felt the need to find out, whether there is any difference between study habits of boys and girls because from Maharashtra state Secondary School Certificate results the remarkable difference in the passing percentage of boys and girls was observed. The average percentage of boys and girls for the years 2010 to 2013 was 87.625 and 89.07 respectively. This indicates that percentage of girls is more than boys. The sex wise percentage of results is mentioned in the summary of S.S.C. board results. (mahresult.nic.in) (Refer appendix R).

The reviews taken by the researcher also indicate that study habits of boys and girls are different. Nirmal, Kanta (1979) and Singh, Muktesh, and Snehalata (2010) stated that girls had better study habits than boys. And Shejwal, B.R. (1980) reported that boys had better study habits than girls. Whereas Nagailinkim, Caraline (1988) noticed no significant difference study habits of boys and girls. Therefore researcher felt the need to study whether there is any difference between the study habits of boys and girls or not.
Many researchers have carried out surveys on study habits to identify and judge the study habits of students. They have located many problems faced by students during studies and factors affecting studies of the students. At the same time very few researchers have implemented programme to guide the students to develop proper study habits. Researcher felt the need not only to locate the problems of students in their studies but also orient them to overcome them.

Thus there was a need that study habits programme should be developed, implemented and its effectiveness should be checked for the benefit of students, teachers and parents as well.

1.10 STATEMENT OF THE PROBLEM

To study the effectiveness of study habits programme on the Science achievement of standard 9 students for Semi English Medium schools in Pune city.

1.11 OBJECTIVES

1. To assess the existing study habits of Semi English Medium students of std. 9.

2. To find out the difference between study habits of boys and girls.

3. To develop and implement the programme to inculcate desirable study habits.

4. To study the effectiveness of the study habits programme in terms of study habits, Science achievement and gender of the students.

1.12 OPERATIONAL DEFINITIONS

- Effectiveness

  Conceptual definition: It is a change produced by an action or other cause, a result.

  Operational definition: It is the extent of fruitfulness of the programme and it is checked in terms of science achievement and study habits of the students.
• **Study habits**

  **Conceptual definition:**

  **Study** – Time and effort spent in reading etc. to gain knowledge.

  **Habit** – Anything that a person does it often.

  **Operational definition:** It is a habit of the student during study which considers following areas and is measured by Study habits Inventory by Dr. M.N. Palsane.

  - Physical conditions for study
  - Reading ability
  - Note taking
  - Factors in learning – Motivation
  - Memory
  - Health
  - Budgeting time
  - Taking examination

• **Study habits programme :**

  **Operational definition:**

  It is the set of activities to inculcate desirable study habits in students which includes

  - Motivation
  - Preparation of charts
  - Preparation of mnemonic devices
  - Use of the laws of organization explained by Gestalt psychologist
    1) Law of proximity
    2) Law of similarity
    3) Law of closure
    4) Law of simplicity
  - Proper time management
- Use of good reading skills
- Use of various techniques of note making
- Correlation of the topic with other topics
- Comparative study
- Proper organization of material
- Use of proper resources to get information
- Setting short range goals
- Taking interest in study
- Practice to raise confidence
- Taking efforts for proper understanding

### Science Achievement

**Conceptual definition:**

**Science** – Science is one of the compulsory subject taught at secondary level of schooling.

**Achievement** – It is something which someone has succeeded in doing especially after a lot of efforts.

**Operational definition:** Science achievement means performance of the students in the Science test developed by researcher for Semi English medium students of std.9.

### Standard 9 Student

The one, who has passed standard 8 and studying in further standard in Semi English Medium School from Pune city.
1.13 SIGNIFICANCE OF THE PRESENT RESEARCH

Habits play a very important role in our lives. Study habits are also very imperative for all students for perfection in studies.

The present research will be useful for all the students, parents, teachers, head masters and automatically to the community as it would guide them to do their work efficiently, systematically and in perfect manner.

As Proper study habits help persons to better their future, to develop proper attitude towards study and avoid wasting time or energy unnecessarily. The present research work will help students for the same.

The present research work will help the students to develop proper study habits, actualize their abilities and potentials.

“A well planned study programme gives students the freedom to pursue their interests in school subjects and such freedom leads to the development of their personalities.” (Ogbodo, 2010, p229). Here in the present research also, researcher had planned study habits programme for development of the students.

Many students have the urge to study and gain better achievement but they are not well aware of the strategies or techniques to study effectively. Students can be benefitted if an effective study habits programme is developed and implemented in the schools. This will enable them to do smart work during their studies.

Secondary level students run through the stormy period of their lives. They are full of energy and are ready to accept new challenges. They have an urge to learn new things always. This research work will be useful to fulfill their urge of learning in a systematic way and also help them to control and channelize their energy in a proper way. It will be useful for them utilize time profitably, to motivate them to study, to learn various techniques of study. It will guide them to do smart work along with hard work.

The present research work will be important for lower middle class of the society, as it is mentioned, it will help the students to be independent in their studies. Most of the students are engaged in other activities apart from their study. The various techniques from present research, like time management, note making, reading skill
will help them to do smart work which will develop confidence in them. As these students are having lack of personal attention, less exposure to various study habits activities, the study habits programme from present research will help them to overcome such problems.

This programme will be important to create healthy atmosphere in the schools as it may develop good relationship between teacher and his/her students.

It will provide guidelines to the teachers to orient their students to develop proper study habits and to plan and conduct study habits programme in future.

The present research work is important as it will help parents and teachers to guide the students as per their own learning styles. As we know some students are auditory learners, some are visual learners while some are kinesthetic learners. The present research will guide to develop study habits as per each students own learning styles as it includes various elements for different categories of learners.

Thus the present research is important to enable the students to be independent in their studies, to use proper techniques during studies and to have proper development as a learner. It is important for parents, teachers, principals, administrators to improve educational process. Ultimately this research work can contribute for the betterment of the future community.

1.14 ASSUMPTIONS

- Study habits can be developed. (Nagaraju, 2004, p17)

- Academic achievement can be measured through an achievement test developed by the researcher. (Best and Kahn, 2009, p301)
1.15 HYPOTHESES

Research Hypotheses

1. There will be a significant difference at 0.01 level between the mean scores of study habits of boys and girls of std. 9 before implementation of the study habits programme.

2. There will be a significant increase at 0.01 level in the mean scores of study habits of students of std. 9 after implementation of the study habits programme.

3. There will be a significant increase at 0.01 level in the mean scores of Science achievement of std. 9 students after implementation of the study habits programme.

4. There will be a significant increase at 0.01 level in the mean scores of study habits of boys of std. 9 after implementation of the study habits programme.

5. There will be a significant increase at 0.01 level in the mean scores of study habits of girls of std. 9 after implementation of the study habits programme.

6. There will be a significant difference at 0.01 level in the mean gain scores of study habits of boys and girls of std. 9 due to the implementation of study habits programme.

7. There will be a significant increase at 0.01 level in the mean scores of Science achievement of boys of std. 9 after implementation of the study habits programme.

8. There will be a significant increase at 0.01 level in the mean scores of Science achievement of girls of std. 9 after implementation of the study habits programme.

9. There will be a significant difference at 0.01 level in the mean gain scores of Science achievement of boys and girls of std. 9 due to the implementation of study habits programme.

10. There will be a significant difference at 0.01 level between the mean scores of study habits of boys and girls of std. 9 after implementation of the study habits programme.
1.16 VARIABLES

Independent variable – Study habits programme

Dependent variable – Science achievement (score of the test) and Study habits of the students

Controlled variable – Age group of the students, Subject, Medium of instruction, Physical environment of the school and Achievement tests.

1.17 LIMITATIONS

Aspects like parental instructions, social family background of students, facilities at home, care taken at home and home environment are beyond the control of researcher and their effect was not considered.

1.18 DELIMITATIONS

- The present research was delimited to std. 9 students of Semi-English medium schools only.
- The present research was delimited to Science subject only.
- The present research was delimited to Pune city only.
- The present research dealt with above mentioned habits as desirable study habits.

To Conclude:

In the present chapter researchers gave the introduction about the research work. The review of related literature and researches is presented in the next chapter.