

**A STUDY OF THE EFFECTIVENESS OF
STUDY HABITS PROGRAMME ON
THE SCIENCE ACHIEVEMENT
OF STANDARD 9 STUDENTS**

**A Thesis Submitted to
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In Education
Under the Board of Education Studies**

**By
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**Under the Guidance of
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FEBRUARY 2015

DECLARATION

I hereby declare that the thesis entitled “**A STUDY OF THE EFFECTIVENESS OF STUDY HABITS PROGRAMME ON THE SCIENCE ACHIEVEMENT OF STANDARD 9 STUDENTS**” completed and written by me has not previously formed the basis for the award of any Degree or Other similar title upon me of this or any other Vidyapeeth or examining body.

PLACE : PUNE

DATE : / / 2015

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CERTIFICATE

This is to certify that the thesis entitled “**A STUDY OF THE EFFECTIVENESS OF STUDY HABITS PROGRAMME ON THE SCIENCE ACHIEVEMENT OF STANDARD 9 STUDENTS**” which is being submitted herewith for the award of the Degree of Vidyavachaspati (Ph.D.) in Education of Tilak Maharashtra Vidyapeeth, Pune is the result of original research work completed by **Mrs. Sarika Dinesh Rathod** under my supervision and guidance. To the best of my knowledge and belief the work incorporated in this thesis has not formed the basis for the award of any Degree or similar title of this or any other University or examining body upon her.

Place : Pune

Date : / / 2015

Dr. NEHA DEO

RESEARCH GUIDE

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MRS. SARIKA DINESH RATHOD

RESEARCHER

ABSTRACT

INTRODUCTION

In the present era the concept of education is changing and becoming vast. Education, which was teacher-centered, has now become child-centered. These are the days of self-directed learning, active learning and lifelong learning. The main aim of education is to bring out all round development which will enable him to face this competitive world.

NEED OF THE PRESENT STUDY

Academic achievement has a great value for all students in their career but at the same time all the students can never gain or reach the same level of achievement in the examination. 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 is an issue of great concern for teachers, parents and administrators.

The target of the study is secondary level students of std. 9 students. They want to do independent studies. 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. They have a desire to get education. In today's world of competition, students 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 researcher thought of lower middle class students wherever the parents are also not aware of all these things.

Researcher felt the need to find out, the difference between study habits of boys and girls because from Maharashtra S.S.C. results the remarkable difference in the passing percentage of boys and girls was observed.

Many researchers have located various problems faced by students during studies, factors affecting it. But very few researchers have implemented programme to guide the students to develop proper study habits. Researcher felt the need not only to locate the problem of students in their studies but also orient them to overcome it. And help them to better their future.

Thus Researcher felt 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.

STATEMENT OF THE PROBLEM

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

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.

OPERATIONAL DEFINITIONS

Effectiveness

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

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	Memory
Health	Budgeting time,
Taking examination	

Study habits programme

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-
Law of proximity, Law of similarity, Law of closure, Law of simplicity
- Proper time management,
- Use of good reading skills
- 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

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.

SIGNIFICANCE OF THE STUDY

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

Proper study habits help persons to better their future, to develop proper attitude towards study and avoid wasting time or energy unnecessarily. Many students have the urge to study and gain better achievement but they are not well aware of the techniques to study effectively. Students can be benefitted if an effective study habits programme is developed and implemented in the schools.

Secondary level students 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 help them to control and channelize their energy in a proper way. It will be useful for them utilize time profitably, to motivate and learn various techniques of study. It will guide them to do smart work along with hard work.

This programme will be important to create healthy atmosphere in the schools. The present research work is important as it will help parents and teachers to guide the students as per their own learning styles as it includes various elements for different categories of learners. Thus the study enables the students to be independent, 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.

ASSUMPTIONS

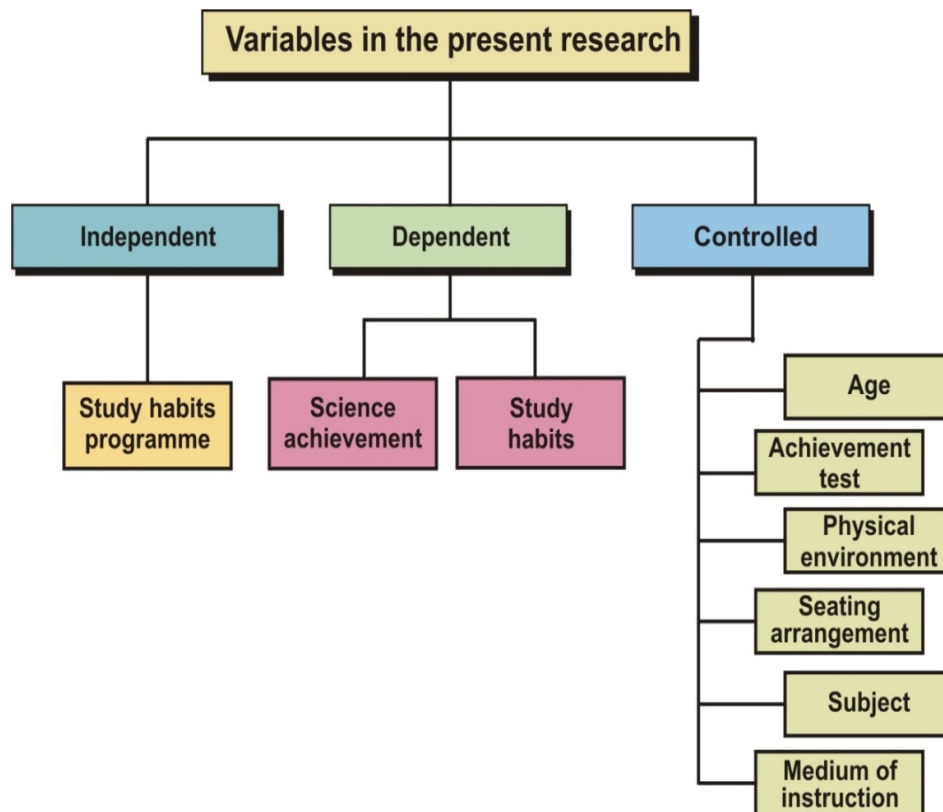
- Study habits can be developed.
- Academic achievement can be measured through an achievement test developed by the researcher.

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.

VARIABLES



LIMITATIONS

Parental instructions, social background, facilities and care taken at home and home environment were beyond the control of the researcher.

DELIMITATIONS

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

RESEARCH METHOD

Experimental method

RESEARCH DESIGN

Single group pretest-posttest design.

POPULATION

The targeted population was all secondary level students of std. 9 of Pune city from Semi-English Medium schools.

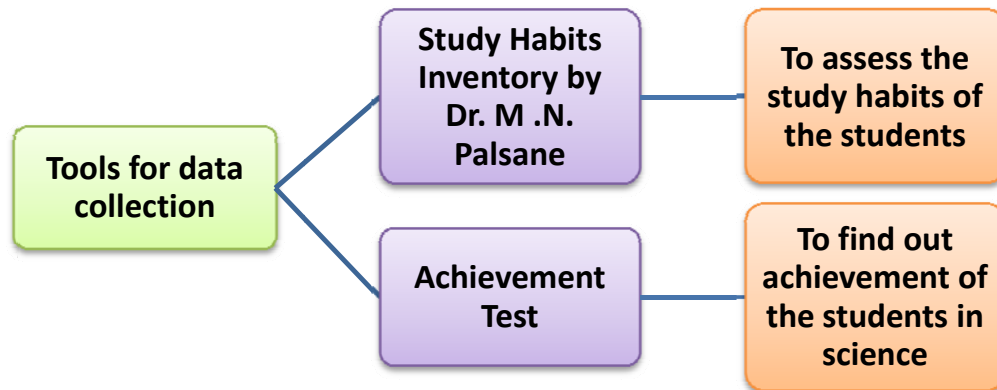
SAMPLE

Sample was a group of 70 students from std. 9 A of H.B. Girme High School.

SAMPLING METHOD

Purposive and Incidental sampling

TOOLS FOR DATA COLLECTION



STATISTICAL TOOL- 't'test

PROCEDURE OF THE RESEARCH WORK

- I. Administration of Pre study habit inventory.
- II. Traditional teaching.
- III. Pre Science achievement test.
- IV. Guest lecture on 'Motivation for Study Habits'.
- V. General instructions regarding the study habits programme.
- VI. The charts were prepared and displayed in the classrooms based on the manual prepared by the researcher.
 1. Keep this in your mind
 2. Few things to do
 3. Manage your time
 4. Read skill fully
 5. Be particular about note making
- VII. Explanation of each chart and technique included in the manual,
- VIII. Post Science achievement test.
- IX. Administration of Post study habit inventory.

FINDINGS

1. Before implementation of the study habits programme -

- Very few (1.43 %) students had excellent study habits.
- Only 20% of students had good study habits.

2. After implementation of the the study habits programme -

- In all 61.43 % of students had excellent study habits.
- None of the students belonged to ‘unsatisfactory’ and ‘very unsatisfactory’ category
- There was a significant increase at 0.01 level in the mean score of the Science achievement of std. 9 students.
- There was a singnificant increase at 0.01 level in the mean scores of the study habits of std. 9 students.

3. Findings from the feedback forms filled by the students and parents

- Parents observed positive change in the study habits of the students
- Parents opined that students were motivated, learnt and started using various study habit techniques to study in a disciplined manner,
- Study habits programme helped students to increase their Science achievement.
- Parents suggested that such kind of programme should be arranged in the schools for students which will help them in future.

CONCLUSIONS

1. Before implementation of the study habits programme -

- Most of the students had average study habits.
- Girls had better study habits than boys.

2. After implementation of the study habits programme -

- Most of the students had excellent study habits.
- There was significant increase in the mean scores of study habit of the students.
- There was a significant increase in the Science achievement of the students.
- There was no significant difference in the mean gain scores of study habits boys and girls of std. 9 due to implementation of the study habits programme.
- There was no significant difference in the mean gain scores of Science achievement of boys and girls of std. 9 due to implementation of the study habits programme.
- There was no significant difference between study habits of boys and girls
- Students started studying regularly by following various study habits techniques.
- Science achievement of the students was increased and study habits of the students were improved significantly therefore the study habits programme was proved to be effective for std. 9 students.
- The conclusion can be generalized to other students from various classes of the society depending on the facilities or exposure available to them, but when the study habits programme will be introduced to them as a whole, effectiveness of it may remain the same.

TOPICS FOR FURTHER RESEARCH

- Same research can be applied on large scale by considering large geographical area.
- Effectiveness of study habits programme on the achievement for other school subjects and different levels of education.
- Survey of study habits of students of night school, college, gifted category, rural area.

CONTRIBUTION TO THE FIELD OF EDUCATION

- Teachers can directly implement the programme to develop proper study habits in students.
- The manual from the present research work will work as a guideline for the students, teachers and parents which provide a method of self learning to the students.
- Teachers can do their lesson planning for all subjects by using the techniques from study habits programme.
- It helps to step towards child centered Education.

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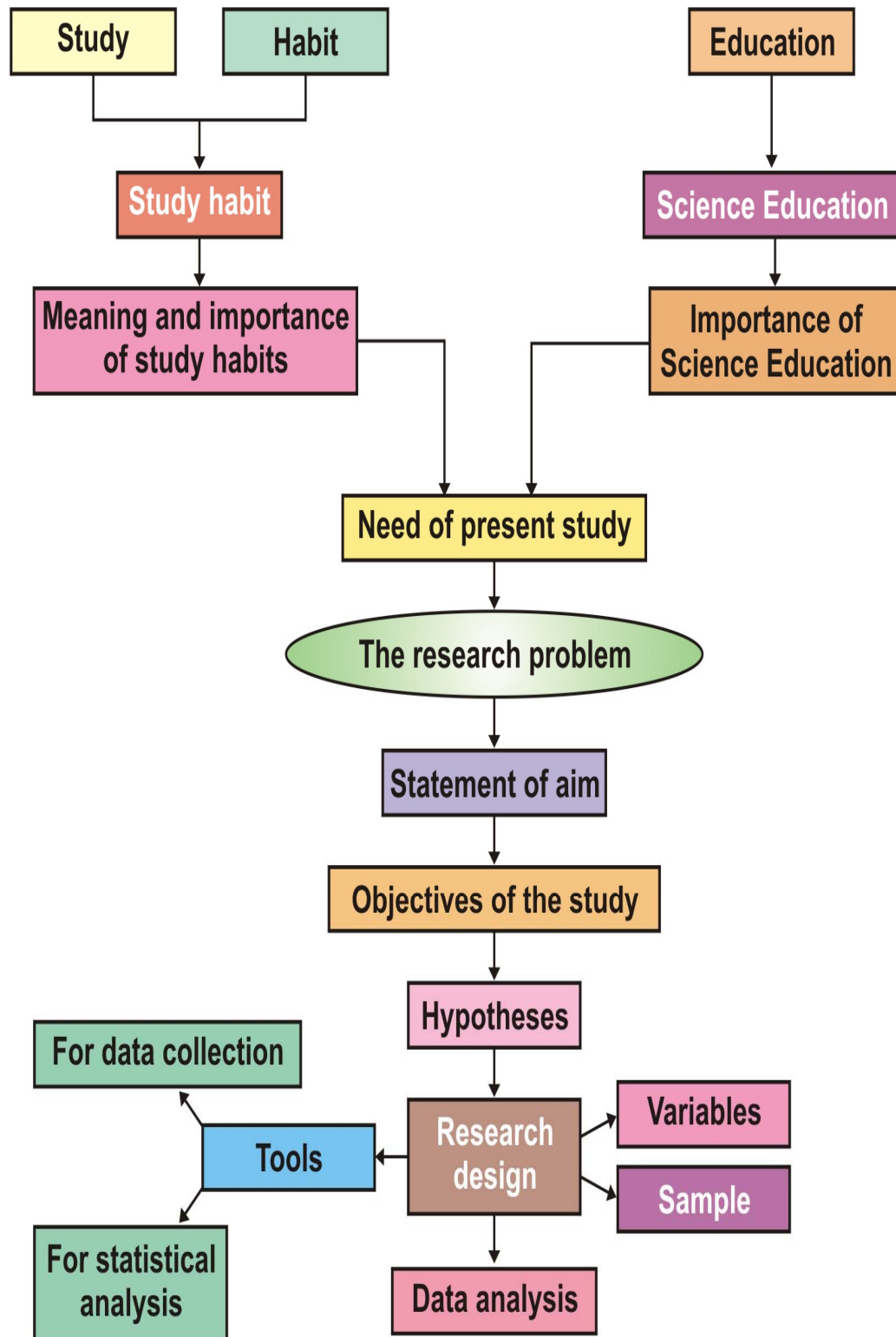
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CHAPTER ONE INTRODUCTION

At a Glance



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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)

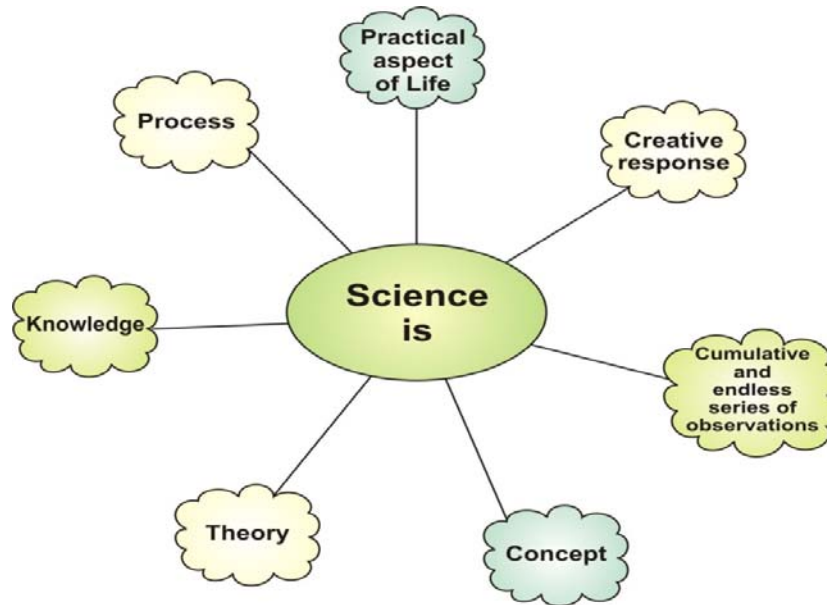


Figure: 1.1 Meaning of Science

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](http://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:

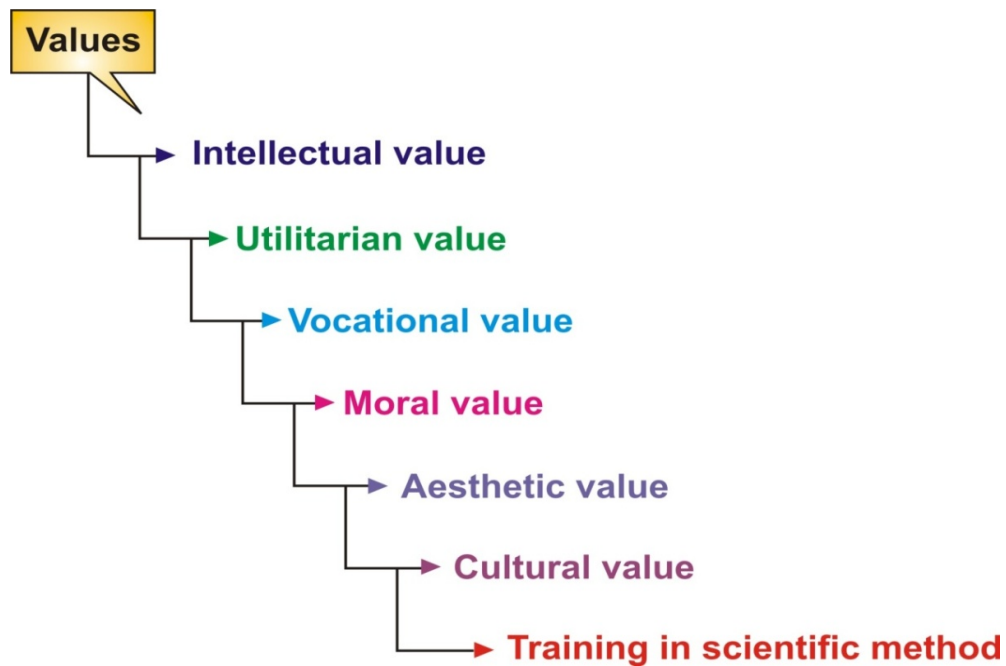


Figure: 1.2 Values in Science teaching

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.

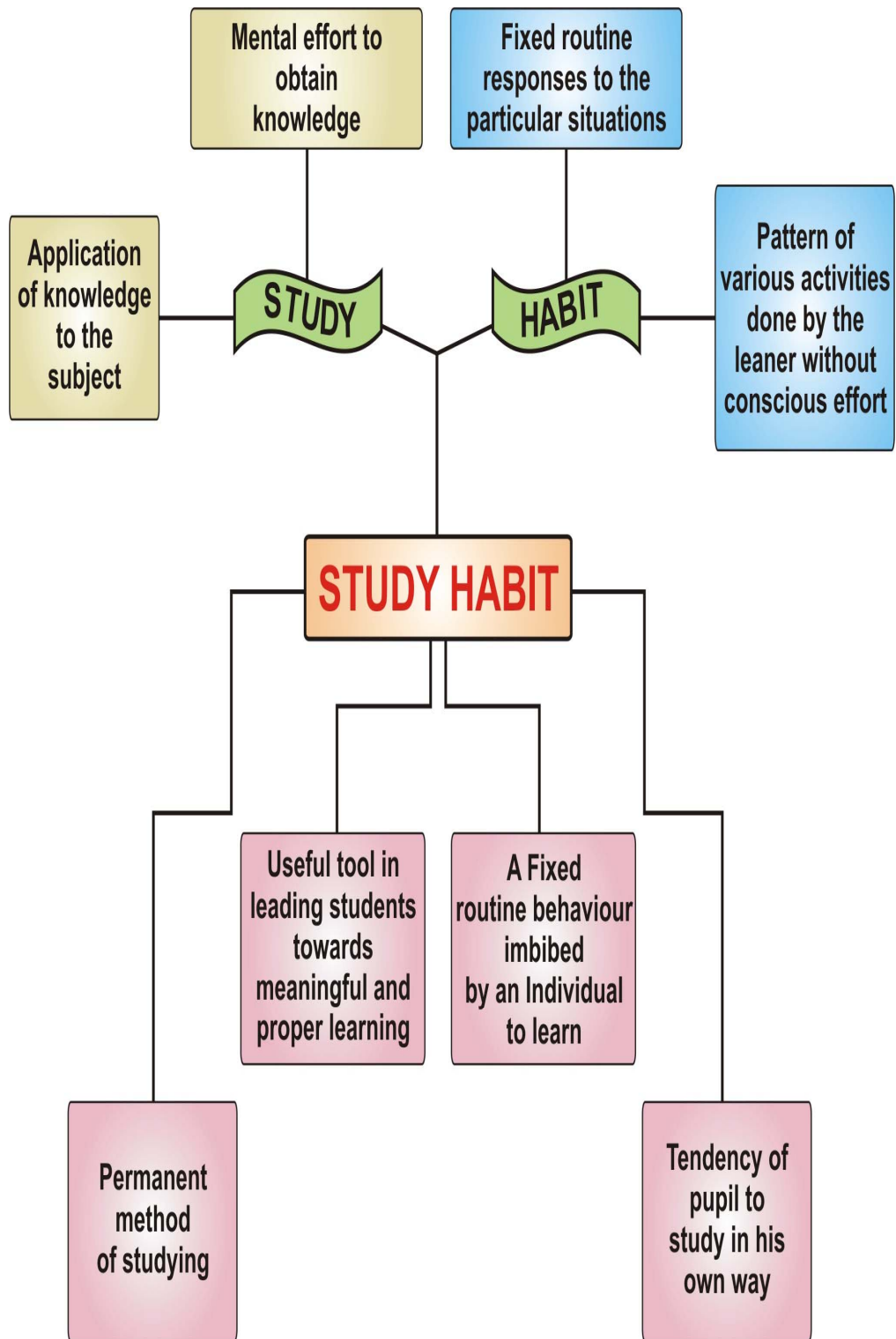


Figure: 1.3 Meaning of Study Habits

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

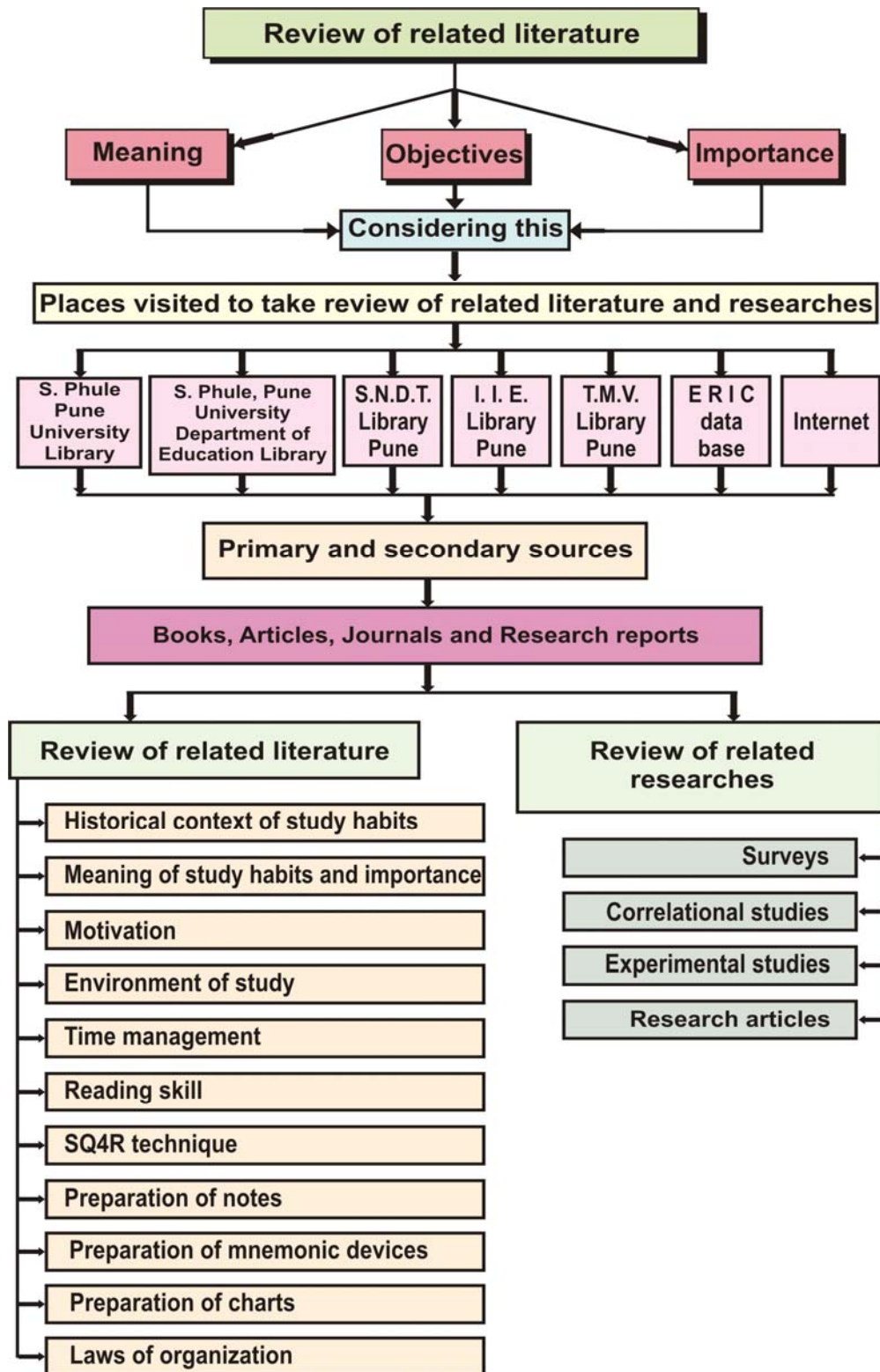
- The present research was delimited to std. 9 students of Semi-English medium schools only.
- The present research was delimited to Science subject only.
- The present research was delimited to Pune city only.
- The present research dealt with above mentioned habits as desirable study habits.

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.

CHAPTER TWO REVIEW OF RELATED LITERATURE AND RESEARCHES

At a Glance



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CHAPTER TWO

REVIEW OF RELATED LITERATURE AND RESEARCHES

2.0 INTRODUCTION

In the previous chapter, researcher gave the introduction about need and importance of present research work, its objective, operational definition, scope, limitations, delimitations etc. In this chapter, the reviews of literature, researches and its relation with the present research work are presented.

In the present chapter, researcher has given detailed review of the related literature and the related researches. In the review of related literature study habits, importance of study habits, study habits techniques are included. At the same time in the review of related researches, the details like author name, methodology of the study, tools, findings etc. are included.

2.1 MEANING OF REVIEW OF RELATED LITERATURE

Review of related literature consists of two words. Here in research, literature refers to a knowledge of a particular area of investigation of any discipline which includes theory, practical and research studies. Review means to organize the knowledge of the specific area of research and to show that his study would be an addition to this field. The researcher has to synthesize the available knowledge of the field in the unique way.

‘Practically all human knowledge can be found in books and libraries. Unlike other animals that must start a new with each generation, Man builds upon the accumulated and recorded knowledge of the past; his constant adding to the vast store of knowledge makes possible progress in all areas of human endeavor.’ (Best and Kahn, 2006, p 37) Review of related literature forms foundation upon which all future work can be built.

The review of related literature involves the systematic identification, location and analysis of documents containing information related to the research problem. (Gay, 1996, p67)

2.2 OBJECTIVES OF REVIEW OF RELATED LITERATURE

The objectives of review of related literature are as follows -

- To find out proper direction of the research.
- To avoid repetition of previous research.
- To improvise the research work by trying to eliminate errors in methods, design or sampling etc.
- To identify the previous researches in the area and avoid the mistakes done previous researchers.
- To have the proper ideas of research subjects, conclusions, and assumptions and to put them in proper order.
- To get up-to-date information about what has been thought and done in a particular area of study.

2.3 IMPORTANCE OF REVIEW OF RELATED LITERATURE

- A study of related literature is an essential part of research report.
- It is necessary for the researcher to understand the existing literature and to study it.
- An exhaustive study of the related research helps to identify the thrust areas.
- The needful recommendation of the previous research helps in selecting or modifying the topic for new research.
- It serves as a guide to the researcher.

2.4 PLACES VISITED TO SEARCH RELATED LITERATURE AND RESEARCHES

Researcher visited the following places to take review of related literature and researches.

1. Savitribai Phule Pune University Library (Jaykar Library)
2. Savitribai Phule Pune University, Department of Education Library
3. S.N.D.T. Library, Pune
4. I.I.E. – Indian Institute of Education, Pune
5. Tilak Maharashtra Vidyapeeth Library, Pune

Apart from the above places, **Eric data base** and various related sites from **Internet** were also visited.

2.5 REVIEW OF RELATED LITERATURE

In review of related literature researcher reviewed following points-

- i) Study habits
- ii) Importance of study habits
- iii) Various techniques included in study habits.

2.5.1 LITERATURE RELATED TO STUDY HABITS

2.5.1.1 HISTORICAL CONTEXT OF STUDY HABITS

The term study skills are used for general approaches to learning and skills for specific courses of study. There is much theoretical work done on this subject, including a vast number of popular books and websites. Manuals for students have been published since 1940s.

In 1950s and 1960s, College instructors in the fields of psychology and the study of education used research, theory and experience with their own students in

writing manuals. In 1979 Marvin Cohn advised the parents about study habits in his book *Helping Your Teen-Age Student*. In 1986, when Dr. Gary Gruber's *Essential Guide to Test Taking for Kids* was first published, the author had written 22 books on taking standardized tests. A work in two volumes, one for upper elementary grades and the other for middle school, the Guide has methods for taking tests and schoolwork. (Wikipedia)

2.5.1.2 MEANING OF STUDY

According to Nagaraju (2004), Study means application of the mind to a problem or subject, a branch of learning, an investigation of a particular subject.

Study skills or study strategies are approaches applied to learning. They are generally critical to success in school, considered essential for acquiring good grades, and useful for learning throughout one's life. (Wikipedia)

Study skills may tackle the process of organizing and taking in new information, or dealing with assessments. They include mnemonics, which aid the retention of lists of information, effective reading, and concentration techniques, as well as efficient note taking. (Wikipedia)

2.5.1.3 MEANING OF HABIT

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

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

'Habit implies a fixed routine response to a specific situation'. (Nagaraju, 2004, p 13). Everything that we do as a part of daily routine i.e. our walking, talking, dressing, eating, writing, reading, driving etc. are the activities performed by us seem to be quite easy and mechanical though initially they are quite difficult to perform. All these learned activities are commonly called as 'Habit. If an action is repeated several times under similar circumstances, it is done involuntarily without much effort. It is done as reflex action. It is known as habit of the particular person.

Nagaraju stated that habits are formed, learned and developed in a planned way. (Nagaraju, 2004, p13). Habits are very important and play significant role in shaping the personality of the individual.

Education inculcates proper habits in the students. Habits like thinking properly, reasoning, punctuality helps pupil to adjust, learn and achieve all essential knowledge and skills in a short time with great facility.

2.5.1.4 MEANING OF STUDY HABITS

Study skills are usually defined as students' ability to manage time and other resources to complete an academic task successfully.

Ozsoy, Memis and Tamur (2009) stated that 'Study habit' is the amount and kinds of study routines which the student used during a regular period of study occurred in conducive environment. In the literature, study skills are usually defined as students' ability to manage time and other resources to complete an academic task successfully. The student's approach to learning is highly individualistic with a wide variation of technique observable.

The learner's Dictionary has defined study as a "Mental effort to obtain knowledge".

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

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."

Crede and Kuncel (2008) define 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.

2.5.1.5 IMPORTANCE OF STUDY HABITS

“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 are 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 behaviour.” (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, many a times the poor study habits are to be blamed. The students do not have proper attitude towards study so they hardly care for developing good study habits. Many students learned the things for longer time, hours and hours continuously without understanding. During examination forgetting the initial word of an answer, make it difficult for the students to recall the entire answer. Therefore they should have proper study habits, which would help them to study and to retain the concepts correctly and with proper comprehension.

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

2.5.1.6 MOTIVATION

It is a well known fact that motivation is the important factor in the learning process. Motivation is a requisite as a base for the new learning. Motivation of students is very important for better output in the academic pursuit. Motivation is an

inner desire, urge and drive to behave or act to achieve the goals of life. The inner conditions such as wishes, desires and goals activate to move in a particular direction in behavior. Motivation is doing something because a person wants to. It makes a person to go to practice every day and work hard.

Motivation is something which prompts, compels and energizes an individual to act or behave in a particular manner at a particular time for attaining some specific goal or purpose. (Mangal, 2010, p138).

Motivation may be considered to be anything, material or non material which energizes and directs a person's behavior towards achieving a set goal. "Motivation is a general positive force that is responsible for people achieving their potential and performing good works." (Osa-Edoh and Alutu, 2012, p 228)

Motivation is mainly of two types -

- Intrinsic Motivation
- Extrinsic Motivation

Intrinsic Motivation – It is a desire which forces the person to work on his own. Something from within is forcing the individual to do the necessary act to get something or achieve the goal. It is long lasting in nature and is effective in promoting students learning.

Extrinsic Motivation – It is an urge or force from outer world to act or to do something. The person may study to get reward or prize only but not to gain knowledge.

Motivation refers to whatever is within the individual that propels the individual in to some sort of action. The learning or behavior theory suggests that all behavior is dependent on the needs of the individual and that the learning that takes place only when behavior is being motivated.

Motivation as a state of organism, which involves the existence of a need that moves or drives the organism from within and directs its activities to a goal that can bring about the satisfaction of the need. (Nagaraju, 2004, p 7).

2.5.1.7 ENVIRONMENT OF THE STUDY

Environment of the study includes physical conditions during study time. The place of the study should be clean, calm and free from distractions. The room should be properly ventilated and must have sufficient light.

The furniture in the room should be as per the requirement and supporting to the seating arrangements to maintain correct and comfortable posture. Study table should be clean and contain only and all the necessary things.

The study area should be fixed and one should study at the same time daily to create the association with the surroundings which helps to concentrate on the study.

The stress free, happy and peaceful home environment is essential to focus on the study.

2.5.1.8 TIME MANAGEMENT

Time management is the act or process of planning and exercising conscious control over the amount of time spent on specific activities, especially to increase effectiveness, efficiency or productivity. (Wikipedia)

It is a meta-activity with the goal to maximize the overall benefit of a set of other activities within the boundary condition of a limited amount of time. (Wikipedia)

Time management is a process by which an individual manages use of the time available to him/her. Time can be managed by keeping record of all activities throughout the day for one week. If a student is able to manage his time properly he can get success in studies as well as in the extra-curricular activities. It is very important to plan the time of the study. Time schedule helps to adjust the study periods and other activities according to the needs of the individual. It helps the learner to carry out their day-to-day activities effectively which results in achieving their goals easily.

The overall process of time management is composed of three major functions

1. Planning
2. Organization
3. Controlling

The following things/action/aspects of time management play important role in time management

- Proper planning is very essential to get success. Failing to plan is planning to fail. To achieve the goals proper planning is must.
- The next step in planning is to follow the plan. Only planning and doing nothing will not be helpful in getting success. Accurate implementation of the plan is a necessary thing in managing time.
- Prioritizing of the task should be done.
- Achievable deadlines should be set to complete the task. At the same time it is important to stick to the deadline for the same.
- Procrastination is a big hurdle in time management. It may give undue stress. Therefore it is necessary to stick with the deadline.

Proper planning and organizing time helps to minimize worry and indecision that may arise in case of any extra work. Time should be planned on the basis of needs and purposes. Adequate time should be allotted to each task so that no particular task consume more time than necessary.

2.5.1.9 READING SKILL

Reading is the basic skill in any kind of study. Reading ability includes various factors such as good vocabulary, speed of reading, right accent, intonation, proper voice modulation, comprehension, independent selection of appropriate material for reading and locating information.

Pandit Nehru rightly said “The reading habit should be developed with the thinking habit. If the people give up reading habit obviously they become lopsided and cease to glow.” (Nagaraju, 2004, p9)

General understanding of a text can be achieved through reading. It gives confidence and enjoyment to the student.

Reading skills enable readers to turn writing into meaning and achieve the goals of independence, comprehension, and fluency.

(www.sil.org/lingualinks/litercy/.../whatarereadingskills.htm)

Speed of reading is an important factor. Silent reading is faster than loud reading. It is essential to adjust the reading speed as per the importance of the matter. A student must read carefully to understand the concepts and ideas. Those concepts and ideas should be remembered and summarized systematically by the student.

2.5.1.10 SQ4R TECHNIQUE

Thomas and Robinson in 1972 developed the strategy for effective reading/learning. In this technique, the learners are taught a systematic approach to learn the desired material in a sequential manner by following certain steps. The technique is known as SQ4R technique, which includes Survey, Question, Read, Reflect, Recite and Review. (Mangal, 2010, p269)

Survey – The matter is surveyed by reading only titles, headlines, noticing graph, maps, figures, summary etc.

Question – In this step student has to ask various questions to himself like why, what, when how, where, who depending on the content/matter surveyed.

Read – The matter is then read to understand the concept by keeping all the questions in mind.

Reflect – In this step the matter has to be made meaningful by linking it with previous knowledge, comparing and correlating the facts.

Recite and Recall – The information provided in the material has to be remembered through recitation and recall, may be orally or in writing.

Review – In this step the matter has to be reviewed, after finishing the whole chapter, the student asks the questions to himself. In case he is unable to answer them, he has to read the material again and evaluate his learning performance.

Reading in a meaningful and systematic way is very essential to develop proper study habits. Unnecessary body movement should be avoided during reading. Speed of reading should be as per the matter and its difficulty level for the student.

2.5.1.11 PREPARATION OF NOTES

Note taking is the practice of recording information captured from another source. By taking notes, the writer records the essence of the information, freeing their mind from having to recall everything. Note taking is a form of self-discipline. (Wikipedia)

Note taking is a form of self recitation. Proper note taking is itself a part of study skills, and has to be improved and developed. During preparation of the notes one has to read the matter again and again, understand it and then note it down by using any form of note taking.

Note taking is the activity aid to learn, remember and ultimately to get success in any examination.

Sequential or linear note making - It is a traditional approach of making notes in the form of lists or phrases. Main points are written in sequence. It may include copying the paragraph from the book or only main ideas/concepts or points.

Pattern note making or mind mapping – This technique is more visual than linear approach. In this various patterns are used to prepare the notes like arrows, circles, lines, flow charts etc. In 1979, Tony Buzan advocated the concept of mind mapping which involves making notes with patterns and by using images.

Main features of notes are as follows –

- Note should be concise, brief and accurate.
- Abbreviations should be used to aid note making

- Use of diagrams will not only make the notes much easier to read and more presentable but also help to memorize the subject material
- Important points, ideas or concepts should be underlined or highlighted
- Page should be divided into meaningful portions to note heading, main points, formulas, figures, summary etc.
- Reliable and recommended proper resources should be used to prepare the notes.
- Symbols, images, colours can be used to make it catchy.

2.5.1.12 PREPARATION OF MNEMONIC DEVICES

‘Mnemonic’ is a Greek word meaning ‘aid to memory’ The device helps us to remember information is known as mnemonic and entire system to improve or develop memory is called “mnemonics”. This system usually makes use of visual imagery to provide useful associations and connections for remembering the required material. (Mangal, 2010, p270).

Mnemonic is any learning technique that aids information retention. Mnemonics aim to translate information into a form that the brain can retain better than its original form. Mnemonics vary in effectiveness for several groups ranging from young children to the elderly. Mnemonics learning strategies require time and resources by educators to develop creative and effective devices.--Wikipedia

Mnemonics are the techniques for remembering information that is otherwise quite difficult to recall. The idea to use mnemonics is to encode difficult to remember information in a way that is much easier to remember.

The fundamental principles in using mnemonics are imagination, association and location.

Imagination - Any image, picture, sign or symbol can be imagined and correlated to remember the information.

Association – The imagined figure can be associated with any other thing to create association which aid to memory. It can be done linking colour, shape, size, intensity, quality, quantity etc.

Location – The association can be done by placing the image close to each other, or imagining the location of the particular thing to remember it.

The few popular methods of mnemonics are as follows-

Initial letter strategy – In this, the initial letters are the focus for remembering and association. E.g. Seven colours of the rainbow can be remembered by the word ‘VIBGYOR’

The keyword method – This method makes use of imagery for remembering the difficult, uncommon and unfamiliar words and items.

2.5.1.13 PREPARATION OF CHARTS

Charts and diagrams are very helpful in presenting certain relationship and continuity in various phases of science. Students can often prepare diagrams and charts which may be kept and placed for display.

2.5.1.14 USE OF LAWS OF ORGANIZATION EXPLAINED BY GESTALT PSYCHOLOGIST

Gestalt is a German noun which means ‘organized whole’, in contrast to a collection of parts. Gestalt psychologists consider the process of learning as an organized whole. (Mangal, 2010, p201).

The basic idea of the theory is that a thing cannot be understood by the study of its constituent parts but only by the study of it as a totality or whole. In fact the focus of Gestalt theory was the idea of grouping.

The laws of organization have been explained in the context of perception and problem solving by Gestalt psychologist.

1. The Law of Similarity

Elements which are similar in size or form or quality or intensity have a tendency to be grouped. Learning similar things are easier than learning dissimilar things.

2. The Law of Proximity

According to this law elements that lie close together in space or in time are easily perceived as one group.

3. The Law of Closure

Items are grouped together if they had to complete some entity and meaning.

4. The Law of Simplicity

Items tend to be organized into simple figures according to symmetry, regularity, and smoothness.

2.5.1.15 CORRELATION AND COMPARISON

Correlation of the subject with life, other subjects, and other topics helps to understand and remember the topic/idea/concept easily. At the same time comparison can be done to understand and remember it which helps to achieve goals of study.

2.5.1.16 ORGANIZATION OF STUDY MATERIAL

The study material should be organized properly to save time and stress. It will help to study peacefully. Though seem to be very negligible thing, it plays important role during study.

2.6 REVIEW OF RELATED RESEARCHES

The review of related researches is taken in detail over here. The following sources were used for the study and it is classified as under in various categories.

The sources are as follows –

- Survey of research in education by Buch M.B. (1st to 6th survey)
- Encyclopedia of Educational Research
- Indian Educational Review (NCERT)

- Journals
- E-journals
- Marathi Journal – Jeevan Shikshan
- Marathi Journal –Shikshan Sankraman

The researches were classified in the following categories-

1. Surveys
2. Correlational studies
3. Experimental studies
4. Research Articles in India
5. Studies done out of India
6. Research Articles out of India

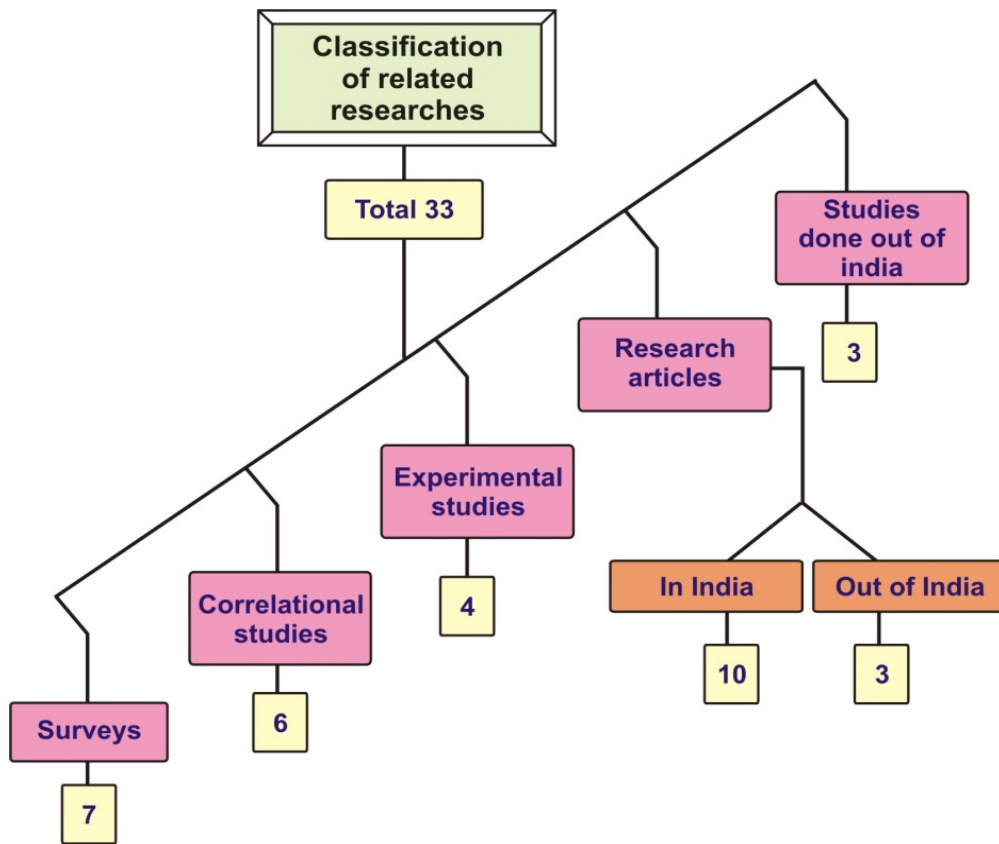


Figure 2.1 Classification of related researches

2.6.1 SURVEYS DONE IN INDIA

Table 2.1 Surveys done in India

Sr. No	Name of Researcher	Year	Level	Title	Source
1.	Nirmal, Kanta	1972	Ph. D.	A comparative study of study habits of high school students.	Indian Institute of Education, Pune
2.	Shejwal, B.R.	1980	Ph.D.	Investigation into study habits of college students.	M.B. Buch 3 rd Survey
3.	Nagailinkim, Caraline	1988	M.Phil	An investigation into the attitude and study habits related to achievement in mathematics of class IX students in Shillong.	M.B. Buch 5 th Survey
4.	Kulshetra, Pradeep Kumar	1992	Ph.D.	The effect of school environment on adjustment, study habit and achievement of high school student.	M.B. Buch 5 th Survey
5.	Sen, Barat Kalpana	1992	Ph. D.	An investigation into the personality makeup, intelligence and study habits of high and low achievers.	SNDT Women's University Library, Pune
6.	Patil, Eknath Bhansingh	1993	M.Phil	The problems of night school students and their study habits.	Indian Institute of Education, Pune
7	Nagaraju, M.T.V.	2004	Ph.D. Published	Study habits of secondary school students	Book – Discovery Publishing House, New Delhi

Nirmal, Kanta (1979) compared study habits of high school students with scholastic performance and found out the variation in study habits with age sex, urban or rural area, parental education and occupations. The survey was conducted with sample size 2966 students of class IX and X. Study habit inventory by Joshi and Pandey was used which is an adaptation of Brown Holzman's survey of study habits and attitude. The major findings of the study were-

1. Scholastic performance in various school subjects had low but positive relationship with study habits.
2. Science group students scored higher on study habits test.
3. Girls scored higher on study habits inventory.
4. The level of parental education favored the study habits scores of students.
5. The family income was positively correlated with Study Habits scores.

Shejwal, B. R. (1980) did survey at Ph.D. level to identify the good and poor study habits of students and the difference between Study habits of boys and girls. The study habits inventory by Dr. M. N. Palsane was used for the same. The randomly selected sample was fifty boys and fifty girls residing in a hostel exclusively meant for economically backward students from rural area.

The major findings of the study were-

1. The boys were found to have better study habits than girls.
2. The students had problem in planning their time for study, developing good reading habits, learning and memory skills and taking examinations.

Nagailinkim, Caraline (1988) surveyed 326 students of class IX and X to investigate into the attitude and study habits related to achievement in Mathematics.

The major findings were –

1. No significant difference was found in the study habits of high, average and low achievers in mathematics.

2. Male and female students did not show significant difference in their attitude as well as study habits scores.

Kulshrestha, Pradeep Kumar (1992) studied the effect of school environment on adjustment, study habits and achievement of high school students. The study was carried out for Ph. D. level by conducting survey. In this study 500 students of class XI were selected by stratified random sampling. Study habits test by Dr. B. V. Patel was used. The major conclusion drawn was regarding home environment, reading, note taking, planning of subject and habit of concentration. It showed that all the aspects did not differ significantly.

Sen, Bharat Kalpana (1992) identified that study habits, achievement and intelligence achievement were positively correlated. The study was carried out at Ph. D. level by survey. In the study 186 high achievers and 227 low achievers girls and boys were selected for the same. The study concluded stating that there was an overall significant difference between high and low achievement groups in study habits.

Patil, Eknath Bhansing (1993) for his M. Phil. level research observed the problems of night school students and their study habits. Dr. M. N. Palsane's study habits inventory was used for it. The study concluded that according to norms of Palsane's Study Habit Inventory about 98 % students have unsatisfactory to very unsatisfactory study habits.

Nagaraju, M.T.V. (2004) collected data about the high school students study habits, personality, intelligence, sociological factors and academic achievement so as to get their influence in developing effective study habits. The major finding was factors like personality, intelligence, achievement, caste and region are associated with the study habits of the pupils.

In the above researches, Nirmal Kanta, Shejwal, Caraline, Kulshetra, Pradeep Kumar, Sen, Bharat Kalpana all have studied the study habits of students and their

relation to other factors like intelligence, environment, and achievements. Only Patil had studied the problems of night school students and their study habits.

RELEVANCE WITH THE PRESENT RESEARCH

All the above studies were done by survey out of which Nirmal Kanta used Study Habit Inventory by Joshi and Pandey where as Patil Eknath had used M. N. Palsane's Study Habits Inventory.

Researches so far reviewed revealed that the students had problem in planning their time for study, memory skills, note taking and looking in the skill of taking examinations. In the present research too, researcher has used study habit inventory by Dr. Palsane to assess the study habits of the students. This review helped the researcher to plan the programme for study habits.

2.6.2 CORRELATIONAL STUDIES DONE IN INDIA

Table 2.2 Correlational studies done in India

Sr. No	Name of Researcher	Year	Level	Title	Source
1.	Jamuar, K.K.	1961	Ph. D.	Some psychological factors underlying the study habits of college students	Pune university
2.	Saxena, S.K.	1981	Ph.D.	Self concept, study habits and school attitude as correlates of socio economics status and cultural setting in different divisioner and failures of high school students of Kanpur district	M.B. Buch 3 rd survey
3.	Sarode, V.B.	1995	Ph.D.	A study of impact of socio-economic status, study habit and academic motivation on academic achievement of higher secondary students of rural area	Pune University
4.	Patil, Minakshi	2004	M.Ed.	इयत्ता ९ वी च्या विद्यार्थ्यांच्या अभ्याससवयी व इतिहास विषय यातील संपादन यांच्या सहसंबंधाचा अभ्यास	SNDT Women's University Library, Pune

Sr. No	Name of Researcher	Year	Level	Title	Source
5.	Patil, Suhas	2007	M.Ed.	सदाशिवराव माने विद्यालय अकलूज मधील इयत्ता नववीच्या विद्यार्थ्यांची विज्ञान अभिरुची विज्ञानातील संपादन व अभ्यास सवयी यांमधील परस्पर संबंधाचा अभ्यास.	Pune University
6.	Sonar, Vijaya	2009	M.Ed.	माध्यमिक शाळेतील इयत्ता नववीच्या विद्यार्थ्यांच्या अभ्यास सवयी व त्यांचे संपादन यांच्या सहसंबंधाचा अभ्यास	SNDT Women's University Library, Pune

Jamuar, K.K. (1961) for Ph. D. studied correlation of some psychological factors underlying the study habits of college students. The major findings given by the researcher were-

1. Study habits are positively related to academic achievements.
2. Study habits are related to personality and adjustment.
3. Study habits are positively related to the background factors like position in the family, father's occupations, hobbies, future educational and vocational plan of the students.
4. Some environmental habits like well lit rooms had positive relationship but noise and ventilation have negative relationship.

Saxena, S. K. (1981) did an ex-post facto correlational study to find out the difference between study habits of rural culture students and urban culture students.

1. Rural culture promoted better study habits and achievement level than the urban culture.
2. The socio economic status had the most significant effects on self concept, study habits, school attitude of difference divisioners as well as failures of high schools.

Sarode, V.B. (1995) for Ph. D. degree studied the impact of socio-economic status, study habits and academic motivation on academic achievements of higher

secondary students of rural area.10 higher secondary schools of rural area from Jalgaon district were selected. The study concluded that

1. Good study habits and academic motivation increases academic achievements.
2. When study habits are stratified in good study habits, Normal study habits and Poor study habits -
 - a. Good study habits students shown significant difference in academic achievement than normal study habits students.
 - b. Poor study habits students shown significant difference in academic achievement than good study habits students.
 - c. Normal study habits students had no significant difference on academic achievement than poor study habits student.

Patil, Minakshi (2004) observed the correlation between study habits of IX students and achievement in history. The sample size was of 120 students. The major finding was there was low but positive correlation between study habits of IX standard students and achievement in History.

Patil, Suhaz (2008) conducted a study to find the correlation between study habits of IX standard students and interest and achievement in Science. The study concluded that there was correlation between science achievement and interest, science interest and study habits and science achievement and study habits.

Sonar, Vijaya (2009) conducted a correlational study at M.Ed. level. The study was carried out to find out the correlation between study habits of IX standard students and their achievements. 50 students from standard IX were selected by incidental sampling method. The study found that study habits and academic achievement were positively correlated. The students were not aware of proper study habit techniques like note taking, reading skills and taking examinations. It also suggested that mostly all students were in need of guidance for the same.

RELEVANCE WITH THE PRESENT STUDY

All the above mentioned studies were of correlational and survey type. Most of the studies found that there was positive correlation between study habit and academic achievement. Only Sarode and Jamaur studied other psychological factors like academic motivation, personality, adjustment, hobbies etc. All the studies also suggested that there was a need of giving guidance to the students for developing proper study habits.

Thus, all the above studies were correlational, but the present study was carried out in an experimental way as the students were in a need of guidance to develop favorable study habits.

2.6.3 EXPERIMENTAL STUDIES DONE IN INDIA

Table 2.3 Experimental studies done in India

Sr. No	Name of Researcher	Year	Level	Title	Source
1.	Malhotra, M.M.	1980	Ph.D.	Effect of systematic approach to instruction in mechanics of structures on achievement, Transfer of learning, motivation, study habits and attitude of poly technique students	M.B. Buch 3 rd survey
2.	Ghalsasi, P.G.	1988	Ph.D.	A descriptive and experimental study in the field of study habits/skills of students in secondary school	Pune University
3.	Rathod, Sarika	2009	M.Ed.	A study of effectiveness of study habit programme on the academic achievement of VIII std. students	Pune University
4.	Bandavane, Sharda	2012	M.Ed.	इयत्ता सातवीच्या विद्यार्थ्यांच्या विज्ञान विषयाच्या काही घटकांसाठी अभ्यास सवयी कार्यक्रमांचे विकसन व त्याच्या परिणामकारतेचा अभ्यास	SNDT University Library, Pune

Malhotra, M.M. (1980) developed a model of system approach to instruction in mechanics of structures. The study done at Ph. D. level compared the effects of systematic approach to teaching and conventional method of teaching on the achievement, transfer of learning, motivation, study habits and attitude of poly-technique students. For the study 439 students of civil engineering were selected for the study. The study showed that students taught under the systematic approach to instruction did not improve their study habits and attitudes.

Ghalsasi, P.G. (1988) carried out an experimental study in the field of study habits/skills of students in secondary school. The objectives put forth were to find out the trends and patterns in the existing study habits of students, to explore the relationship between study habits and socio-economic background, to develop the desired study habits/skills, to find out the effect of the programme and to ascertain the teachers' views about students' study habits/skills. A random sample of 950 students studying in classes VIII, IX and X from pune city was selected. The major findings of the study were -

1. The majority of the students had no clear idea about the purpose of studying and the objectives of schooling
2. Not more than 50% of the students got guidance from parents.
3. The analysis of variance of study habits indicated that the treatment through the programme provided was effective in changing the study habits in desired direction
4. The analysis of co-variance of academic achievement indicated that treatment through the programme was effective in improving the achievement in the positive direction.

Rathod, Sarika (2009) did an experiment to study the effectiveness of study habits programme on academic achievement of VIII standard students. Total sample of 66 students were selected by purposive sampling which is further divided into control group and experimental group by simple random sampling. Two equivalent

groups pre test-post test design was used. First the self prepared questionnaire was used to assess the study habits of the students. Then the study habits programme was implemented to the experimental group. The programme included concept mapping, preparation of mnemonic devices, preparation of notes and preparation of charts. The study was done for science subject. The major finding of the study were-

1. Almost all the students used to do rote learning and mugging up and not a single student used any other technique to learn or study the subject.
2. The study habit programme was effective and the achievement of the students in the experimental group was significantly good than those of the control group.

This study also suggested that action research can be undertaken to inculcate proper study habits among the students.

Bandavane, Sharda (2012) developed a study habit programme and studied the effectiveness of it for few topics in science on VII standard students. A survey was made to know the study habits of student by using Palsane's study habit inventory. The study habit programme was implemented on 44 students selected by incidental sampling. The experimental design was single group pre test- post test. Use of charts, concept mapping technique for memorization, Power Point presentations, comparison, minds mapping was done during the study habits programme. The major findings were-

1. The students were curious to know various study habits.
2. Most of the students had unsatisfactory study habits.
3. There was significant difference between pre and post achievements of the students after implementation of study habits programme .

The study suggested that such type of study habits programme considering other aspects and technique should be implemented for better achievement.

RELEVANCE WITH THE PRESENT RESEARCH

It was clear from the aforementioned review that very few experimental studies were done on study habits in India. It also showed that academic achievement can be improved by use of study habits. In the above study, Bandavane and Rathod implemented a study habits programme and studied its effectiveness on the academic achievement. The present research is also similar to it but in the present research, the programme implemented was different and was conducted on standard 9 students. In addition to the techniques used by Bandavane and Rathod many other techniques were included in the present research.

The review also reveals that though many of surveys were done, there was a big gap of experimental studies in study habits area i.e. after Ghalsasi(1988) experimental study was done by Rathod in 2009. Therefore the researcher felt the need to do research by experimental method considering various aspects and suggestions given through reviewed surveys, correlational and experimental studies.

2.6.4 RESEARCH ARTICLES IN INDIA

Table 2.4 Research articles in India

Sr. No.	Name of Researcher	Year	Title	Type of study	Source
1.	Yadav, V.S., Ansari, M.R and Savant, P.A.	1999	A critical analysis of study habits and academic achievement of college students	Survey	Internet Karnatak a journal of Agricultural Sciences
2.	Singh, Suneeta, Muktesh, S., Snehlata, C.	2010	Study habits in relation to academic performance in high school students	Correlational	Internet www.indianjournals.com
3.	Sharma, Sonia	2012	Effect of concept mapping strategy on the learning outcome in relation to intelligence and study habits	Experimental	Internet www.shreeprakashan.com
4	Acharya, Sunita	2012	Study habits and its effect on academic achievement of tribal and non tribal students at secondary level	Survey	Internet www.shreeprakashan.com
5.	Dr. Chand, Suresh	2013	Study habits of secondary school students in relation to type of school and type of family	Survey	Internet www.indianresearchjournals.com ISSN-2277-363

Sr. No.	Name of Researcher	Year	Title	Type of study	Source
6.	Kaushar, Mehnaz	2013	Study of impact of time management on academic performance of college students	Survey	Internet www.iosrjournals.org
7.	Dr. Anwar, Ehtesham	2013	A correlation study of academic achievement and study habits : issues and concerns	Correlational	Internet www.ocwjournals.com ISSN-2322-0147
8.	Patil, Deepa	2013	इयत्ता १२ वी कलाशाखेतील विद्यार्थ्यांच्या अभ्यास सवयी आणि शालेय संपादन यांतील सहसंबंधाचा अभ्यास	Survey	Shikshan Tarang
9.	Dr. Sandhu, Sukhdev Singh	2014	Academic achievement of adolescents in relation to achievement motivation and study habits	Correlational	www.emri.net Shanshodan kranti ISSN-2321-0397
10	Nadeem, N.A., Puja, Javeed Ahamd, Bhat, Shabir Ahmad	2014	Study habits and academic achievements of Kashmiri and Ladakhi adolescent girls : a comparative study	Survey	Turkish online journal of Distance Education ISSN-1302,6488, Vol-2

Yadhav, Ansari and Savant (1999) administered study habit inventory on B.Sc. Students. The results revealed that plan of study, method of study, concentration, preparation for examination and perfection of subject were significantly related to academic achievement. More than fifty percent of the students had problems in above mentioned areas.

Singh, Muktesh, and Snehalata (2010) examined the nature, type and characteristics of study habits in high school children in relation to various variables like gender, age, class grade and scholastic achievement. It was reported that girls have better study habits than boys and no significant difference was observed between students in relation to class grade, and age of students.

Sharma, Sonia (2012) in her experimental study, observed the effect of concept mapping strategy on the learning outcome of students of 9th class in relation to intelligence and study habits. It was found that concept mapping strategy was significantly superior to traditional method in teaching retention of Social studies.

Acharya, Sunita (2012) examined the effects of study habits on academic achievement of tribal and non-tribal students at secondary level by using Dr. D. Gopal Rao's Study Habit Inventory. The study concluded that study habits had a significant impact on academic achievement of tribal and non-tribal students at secondary level.

Dr. Chand, Suresh (2013) used Dr. B. V. Patel's Study Habit Inventory to find the study habits of students studying in government and private schools. The findings of the study revealed that no significant difference exists between Government and private secondary school students on reading, note taking, concentration, habit and interest, school environment component of study habits and total study habits.

Kaushar, Mehnaz (2013) found out the relationship between the time management skills and academic achievement of students. The study reported that there was a significant positive relation between time planning, time management and academic performance of the students.

Dr. Anwar, Ehtesham (2013) did a correlational study to investigate the degree of relationship between study habits and academic achievement of senior secondary school students. The study revealed high and positive relationship between study habits and academic achievement and good study habits result in high academic achievement. It was suggested that necessary study skills must be taught to the students with a view to improve their academic performance.

Patil, Deepa (2013) found out the correlation between study habits and academic achievement with the help of Dr. M.N. Palsanes's Study habit inventory. The study identified positive and high correlation between study habits and academic achievement. The suggestion given by the researcher was, it is necessary to guide the students to develop proper study habits.

Dr. Sandhu, Sukhdev Singh (2014) conducted a study to investigate the relation between Academic Achievement of Adolescents and achievement motivation and study habits. The findings showed significant and positive relation between Academic Achievement of Adolescents and achievement motivation and study habits.

Nadeem, Puja and Bhat, (2014) did a survey to find out the study habits and academic achievement of adolescent girls of Kashmiri and Ladakhi. Dr. Palsane and Dr. Sharma's Study Habit Inventory was used to collect data. The study reported a significant difference between Kashmiri and Ladakhi girls.

RELEVANCE WITH THE PRESENT STUDY

To sum up the above studies revealed that many academicians are studying the topic of study habits of students. Almost all the studies found the positive correlation between study habits and academic achievement of the students.

Anwar and Patil also suggested that the guidance should be given to students to improve their study habits. Mehnaz Kaushar reported a positive relation between time management and academic performance and Sonia Sharma studied effectiveness of concept mapping strategy. This helped the researcher to include time management aspect in the programme.

Two of the above studies i.e. Patil and Nadeem, Javeed and Bhat used Dr. M. N. Palsane's Study Habit Inventory which was also used by the researcher in the present research.

2.6.5 STUDIES DONE OUT OF INDIA

Table 2.5 Studies done out of India

Sr. No	Name of Researcher	Year	Level	Title	Type of study
1	Bray, Margaret R.	1978	Ph. D.	A comparison of counselor attention, counselor attention plus modeling, and supervised study control treatments in changing study habits, attitudes, behaviors, and grades	Experimental
2.	Chow, Zee Lisu	1980	M.Ed.	Effectiveness of a study skills programme in relation to study habits , attitudes and academic achievement for students in a secondary school in Hong Kong	Experimental
3.	Chenmin, Kim	2007	Ph. D.	Effects of Motivation, Volition and Belief change strategies on attitudes, study habits and achievement in Mathematics Education	Experimental

Bray, Margaret R. (1978) did experimental study for Ph. D. to compare counselor attention, supervised study control treatments in changing students study habits and attitudes, grades and class behavior. A pre test post test experimental design was employed. It was observed that no significant treatment effect existed for study habits and study attitudes.

Chow, Zee Lisu (1980) at M. Ed. Level through the experimental study reported that, in two equivalent group pre test- post test design, the treatment group showed no significant change in study habits and attitudes of the students. But the students in study skills programme did significantly better in post test.

Chenmin, Kim (2007) observed through his experimental study that the types of email messages were not resulted positively to change students study habits. The control group students were sent motivational emails time to time to study and change their habits but no change was observed.

RELEVANCE WITH THE PRESENT STUDY

It may be seen from the brief review of researches mentioned above that the aspects like motivation, academic achievement and attention were studied in the researches. In all the above studies experimental method was used which is similar to present research. Chow Zee Lisa studied the effect of study skill programme on academic achievements of the students which is very similar to the present study.

2.6.6 RESEARCH ARTICLES - OUT OF INDIA

Table 2.6 Research articles - Out of India

Sr. No	Name of Researcher	Year	Title	Type of study	Source
1.	Gokhan Ozsoy, Aysel Memis, Turan Temur	2009	Metacognition, study habits and attitudes	Correlational	Internet IEJEE- journal ISSN - 1307-9298 www.iejee.com
2.	I. Oriahi Christiana	2009	Influence of motivation on students academic performance	Correlational	Internet The Social Sciences Journal ISSN-1818-5800
3.	G.I. Osa-Edoh and A.N.G. Alutu	2012	A survey of students study habits in selected secondary schools : Implication for Counseling	Correlational	Internet Current Research Journal of Social Sciences ISSN-2041-3246

Gokhan Ozsoy, Aysel Memis and Turan Temur (2009) investigated the relationship between fifteen grade student's metacognition level and their study habits and attitudes. The results revealed that there is a medium positive relationship between metacognitive knowledge and skills and study habits. Additionally, the results of the study showed that there is no significant relationship between metacognition and study habits and attitudes for low and medium achievers but there is a significant relationship for high achievers.

Oriahi Christiana (2009) did survey to investigate the influence of motivation on students' academic performance. Self-developed motivational questionnaire was used for data collection. The study found that motivation of students is very important for better output in the academic pursuit. Student's motivation has high positive correlation in their academic performance. The study also suggested that various activities should be conducted in the schools and at home to motivate the students so that they can do better in their academic pursuit.

G.I. Osa-Edoh and A.N.G. Alutu (2012) made a survey of students' study habits in selected secondary schools. Study habit inventory by Bakare (1977) was used for data collection. The study found that-

1. The correlation between study habits and students' academic performance is high.
2. There is significant difference in the academic performance between male student in the junior secondary schools and female students in senior secondary schools.
3. Students don't know how to study and effective study methods.

It suggested counselor or evaluator can help the students to imbibe effective study habits.

RELEVANCE WITH THE PRESENT STUDY

The above research articles reviewed were correlational studies which helped the researcher to consider other aspects like motivation and attitude of the students. This enabled the researcher to plan the study habits programme.

To sum up, it can be stated that many academicians have worked on this area of study habits but most of the researchers conducted surveys. Most of the studies also suggested that there was a need to provide guidance to the students regarding their study habits for their betterment. All these reviews helped the researcher to design the programme for the present research work.

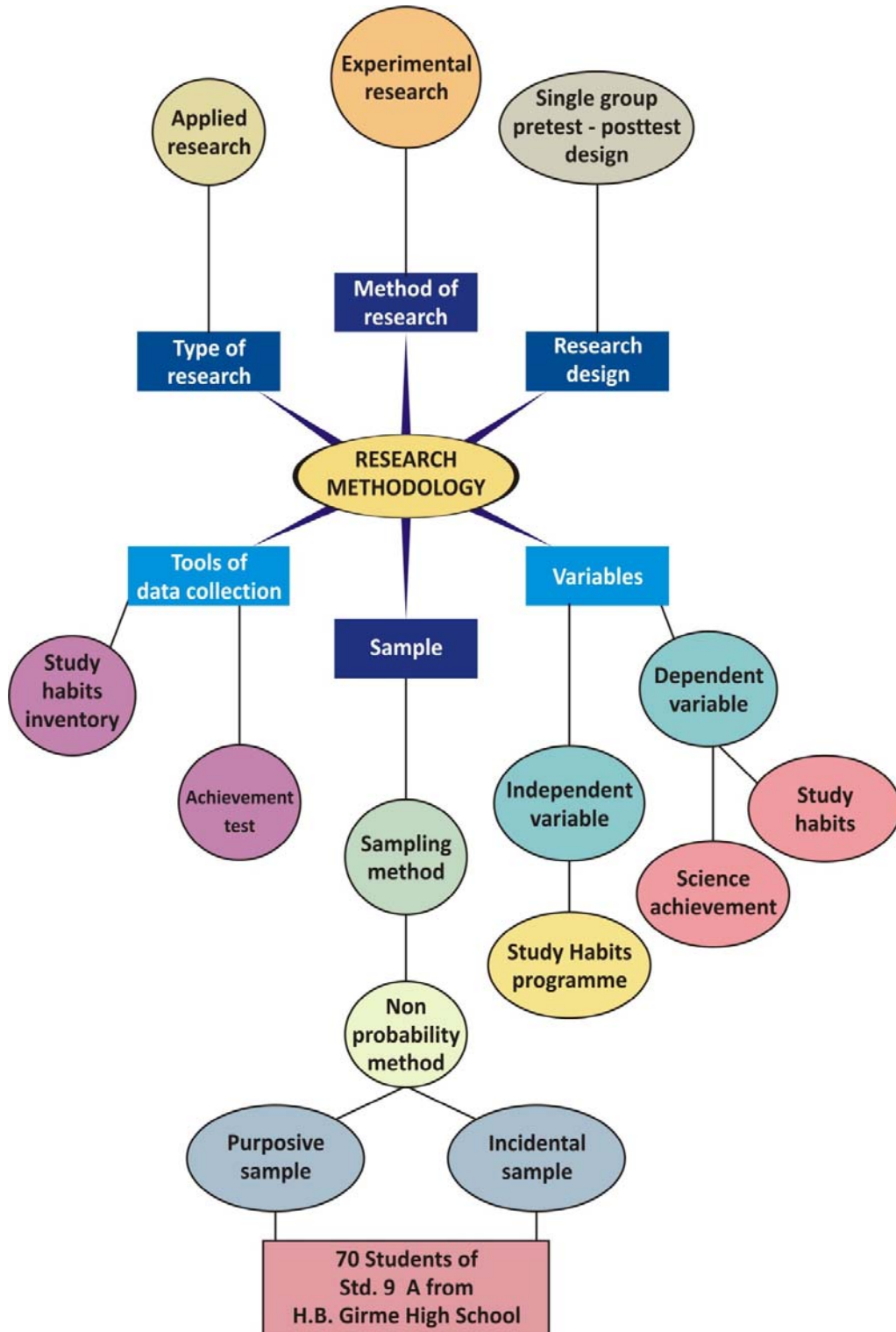
To Conclude:

In this chapter researcher gave the details of review of related literature and researches. The description of research methodology, preparation and implementation of the study habits programme is presented in the next chapter.

CHAPTER THREE

METHODOLOGY OF THE STUDY

At a Glance



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CHAPTER THREE

METHODOLOGY OF STUDY

3.0 INTRODUCTION

After taking the review of related literature, the next step is to plan research methodology. In this chapter, researcher has discussed research methodology in detailed and has given description of preparation and implementation of study habits programme, schedule for the programme and for research work as well.

As per the definition by P.M. Cook, “Research is an honest, exhaustive, intelligent searching for facts and their meanings or implications with reference to a given problem” (Sidhu, 1995, p1)

According to Best J.W., “Research is considered to be the more formal, systematic, intensive process of carrying on the scientific method of analysis. It involves a more systematic structure of investigation usually resulting in some sort of formal record of procedures and a report of results or conclusions.” (Sidhu, 1995, p1-2)

Educational research is considered to be a ‘Prominent Key’ which is essential to the opening of new doors in education. According to Travers, “Educational research is that activity which is directed towards the development of a Science of behavior in educational institutions. The ultimate aim of such a Science is to provide knowledge that will permit the educator to achieve his goals by the most effective methods.” (Sidhu, 1995, p2)

Clifford Woody defines research as “Research is a careful inquiry or examination in seeking fact or principles, a diligent investigation to ascertain something.” (Sidhu , 1995, p2)

A research method is determined on the basis of the nature and type of the problem. Research is an intellectual activity. It is responsible to correct the present mistakes, remove exiting misconception and add learning to the existing fund of knowledge.

3.1 TYPES OF RESEARCH

There are 3 types of research.

1. Fundamental or Basic research.
2. Applied research
3. Action research

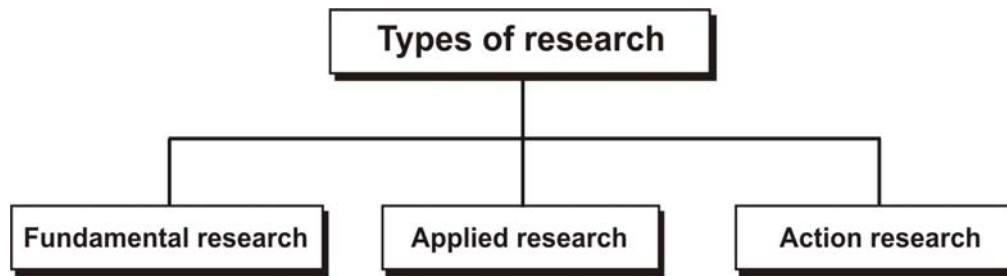


Figure: 3.1 Types of research

1. Fundamental or Basic research

Fundamental research is usually carried on in a laboratory or some other sterile environment, sometimes with animals. This type of research which generally has no immediate or planned application may later result in further research of an applied nature. It gives its results in the form of broad generalizations or principles and theories.

2. Applied research

Applied research has most of the characteristics of fundamental research, including the use of sampling techniques and subsequent inferences about the target population. However, its purpose is improving a product or a process - testing theoretical concepts in actual problem situations. Most educational researches are applied researches.

3. Action research

Action Research is focused on immediate application, not on the development of theory or on generalisation of applications. Its purpose is to improve school practices,

habits of thinking ability to work harmoniously with others and professional spirit. Its findings are to be evaluated in terms of local applicability, not in terms of universal validity.

3.1.1 TYPE OF THE PRESENT RESEARCH

The present research was **Applied research**. As in the present research, no new theories or laws are generalized, it was not fundamental. Action research is generally conducted to find out immediate solution to the problem in the field of service. In the present research it was not done.

The present research was applied one, as it tested the results in the actual field setting. It was related only to the study habits and academic achievement of secondary level students.

3.2 METHODS OF RESEARCH

There are main three methods of Educational research.

1. Historical method
2. Descriptive method
3. Experimental method

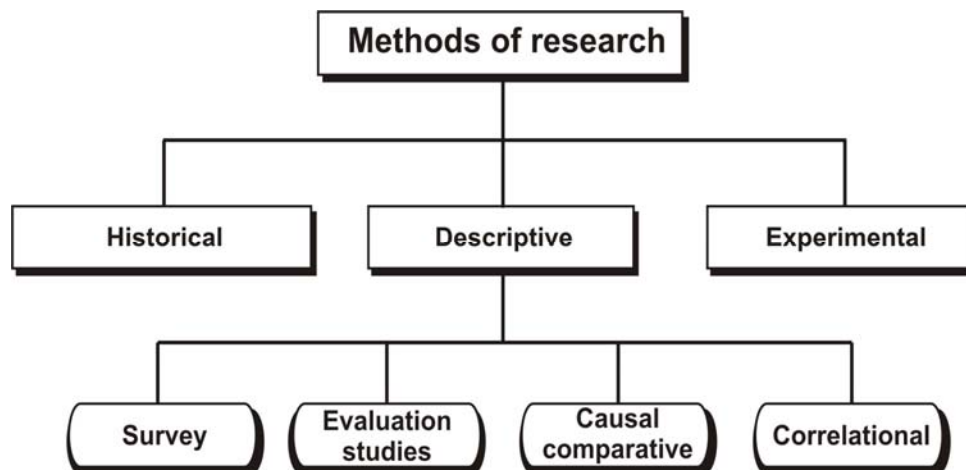


Figure 3.2 Methods of research

1. Historical Method

Historical research is the application of the scientific method of inquiry to historical problems. It gives a clear perspective of the past and the present. The present problems are understandable only on the basis of their past. Historical research describes what was. The process involves investigating, recording, analyzing and interpreting the events of the past.

2. Descriptive method

This method is the method of investigation which attempts to determine and interpret what exists at present in the form of conditions, practices, processes, trends, effects, attitudes, beliefs, etc. It describes what is. It involves some type of comparison or contrast and attempts to discover relationships between existing non manipulated variables.

3. Experimental research

Experimental research provides a systematic and logical method for answering the question. “What will happen, if this is done under carefully controlled conditions?” It describes what will be. It simply enables the researcher to improve the conditions under which the researcher observes and thus to arrive at a more precise results.

As described by Good and Scates “Experimentation is the name given to the type of educational research in which the investigator controls the educative factor to which a child or a group of children is subjected during the period of inquiry and observes the resulting achievement.” (Good and Scates, 1979, p88)

3.2.1 RESEARCH METHODOLOGY OF THE PRESENT RESEARCH

The researcher chose **Experimental method** for the present research work. Experimental method is systematic and logical method of hypothesis testing. It is a

classical method where in the elements manipulated and effects observed can be controlled.

For the effectiveness of study habits programme the researcher decided to use experimental method for the study. In the present research, researcher wanted to find out the effect of study habits programme on the Science achievement and present study habits of the students. Thus, to fulfill the objectives of the present research, experimental method was the only suitable method.

3.2.2 CHARACTERISTICS OF EXPERIMENTAL RESEARCH

There are two major characteristic of Experimental Research

1. Manipulation
2. Control

3.2.2.1 Manipulation

Direct manipulation by the researcher of at least one independent variable is the one single characteristic that differentiates all experimental researches from other types of research.(Gay, 1996, p344)

It means that the researcher decides what forms or values the independent variable (or course) will take and which group will get which form.

- **Manipulation in the present research**

In the present research ‘The study habits programme’ is the independent variable. The researcher decided the set of activities to be included in the programme to study its effectiveness.

3.2.2.2 CONTROL

Control refers to efforts on the part of the researcher to remove the influence of any variable (other than the independent variable) that might affect performance on the dependent variable. (Gay, 1996, p344)

- **Control in the present research**

In the present research many extraneous variable may have their effect on dependent variables like parental instructions, social background of students, facilities at home, home environment, age, sex, subject, medium of instruction, difficulty level of pretest and posttest, and physical environment of school.

Out of above mentioned variables the following variables were controlled.

Age - All the students included in the study were between 14 to 15 years.

Achievement test – Pre and post achievement tests were based on same blue print.

Physical environment – The same class room was used throughout the programme and for administering the tests.

Seating arrangement – Seating arrangement was done in their own classroom while conducting classes and examination. One bench was allotted to one student during the test.

Subject – The programme was related to Science subject only.

Medium of instruction –The medium of instruction for the programme was English.

3.3 EXPERIMENTAL DESIGN

“The experimental design is the blueprint of the procedures that enable the researcher to test hypothesis by reaching valid conclusions about relationships between independent and dependent variables. Selection of a particular design is based on the purposes of the experiment, the type of variables to be manipulated, and the conditions or limiting factors under which it is conducted.” (Best and Kahn, 2009, p177)

In the present research, the researcher selected the **Single group pretest - posttest design**

X₁ O X₂

In this design the effects of the treatment are judged by the difference between the pretest and the posttest scores. In the present research, the effect of study habits programme was judged by

1. Difference between Pre study habits inventory and Post study habits inventory
2. Difference between Science achievement pretest and Science achievement posttest.

3.3.1 RATIONALE FOR SINGLE GROUP PRETEST-POSTTEST DESIGN

The reasons for single group design were as below-

1. In the present research various activities were comprised in the form study habits programme and it was not a specific teaching methodology to compare it with traditional method, so single group pretest-posttest design was found to be the most suitable design.
2. The selected school is having only one division of Semi English Medium per standard, so it was not possible for the researcher to select two classes of Semi English Medium from the same school.
3. School administration was of the opinion that whole class should be benefitted by the study habits programme, so to have two groups from the same class was also not possible for the researcher.
4. Researcher could select two classes of Semi English Medium from two different schools but to equate the two groups on the basis of various aspects (Age, Socioeconomic status, equal number of boys and girls etc.) was practically found to be not feasible.

3.4 POPULATION

“The population is the group of interest to the researcher, the group to which she or he would like the results of the study to be generalizable. The defined population has at least one characteristic that differentiates it from other groups” (Gay, 1996, p112)

“A population is any group of individuals that has one or more characteristics in common and that of interest to the researcher” (Best and Kahn, 2009, p13)

The targeted population of the present research was **all secondary level students of standard 9 of Semi English medium schools from Pune city.**

3.5 SAMPLING

As per the definition given by Gay L. R., “A sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the larger group from which they were selected.” (Gay, 1996, p111)

According to Gupta ”Sampling is a tool which enables us to draw conclusions about the characteristics of the population after studying only those objects or items that are included in the sample.” (Gupta, 2004, p15)

A sample is a small proportion of population selected for observation and analysis. A finite subject is called a sample and the number of individuals in a sample is called the sample size. (Best and Kahn, 2009, p13)

There are various methods of sampling.

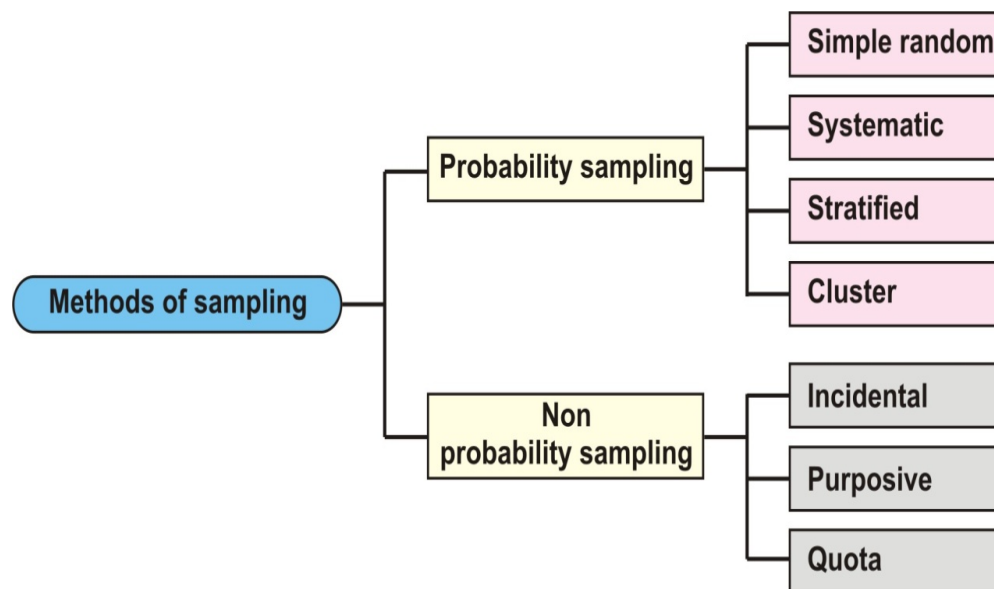


Figure 3.3 Methods of Sampling

3.5.1 SELECTION OF SAMPLE

Researcher selected the sample by **Non probability sampling**. Non probability sampling is done by the researcher as per his/her convenience, opinion and decision. It is based on research topic and its objectives.

In the present research, the researcher selected **incidental** and **purposive** sampling method from non-probability sampling method.

Purposive sampling was done by the researcher to select the sample from the population to fulfill research objectives. In the present research, researcher selected Granted Semi English Medium Secondary Level School. There was a need to guide the students to develop proper study habits and due to change in medium of instruction these students of Semi English Medium schools find it difficult to cope up with their studies. The rationale behind choosing the above mentioned school was –

1. The students in this school are mostly from lower middle class of the society. The average income of the selected sample was Rs. 66129/- (Refer appendix S)
2. They have less exposure to various activities related to study habits.
3. They have less facility for their study at home.
4. There is lack of personal attention to these students.
5. They are from Semi English Medium School.
6. Secondary level is very important for their future progress.

Here, the researcher purposefully decided to select Granted Semi English Medium schools, so that the study habits programme will give the students exposure to use various desirable study habits techniques. The students will get advantage of the study habits programme in the form of guidance about their study habits.

Then after by **Incidental Sampling** researcher had selected ‘H. B. Girme High School, Wanwadi, Pune’. The rationale behind choosing the above mentioned school was –

1. The above mentioned school gave permission to implement the programme by considering the need of the students.
2. The school extended cooperation for the research work.
3. As per the need of the research work it was convenient to conduct the programme in the school.

Thus the researcher did the sample selection by keeping the research objectives and need of the research in mind. During the review of related literature

researcher came to know that the students from lower middle class of the society are in more need of the guidance in their studies.

3.5.1.1 SAMPLE SIZE

Researcher chose 79 students of standard 9 from H.B. Girme High School. But out of 79 students only 70 students were regularly present for the programme and the tests. So the sample size was 70 students.

3.5.2 CHARACTERISTIC OF THE SELECTED SAMPLE

a) Semi English Medium School

In the present research, the school selected was Granted Semi English medium school. The school was basically of Marathi medium with one division per standard of semi English medium. The students from semi English division faced difficulties to cope with their studies due to change in medium of instruction.

b) Students of standard 9

In the present research, the students were from age group 14-15 years. This is a very crucial age group. It was essential to study their study habits in order to provide them proper guidance. Most of the students belonged to lower middle class of the society and worked in the morning to support their family income.

3.6 VARIABLES

Variables are the conditions or characteristics that the experimenter manipulates, controls or observes. (Best and Kahn, 2009, p167)

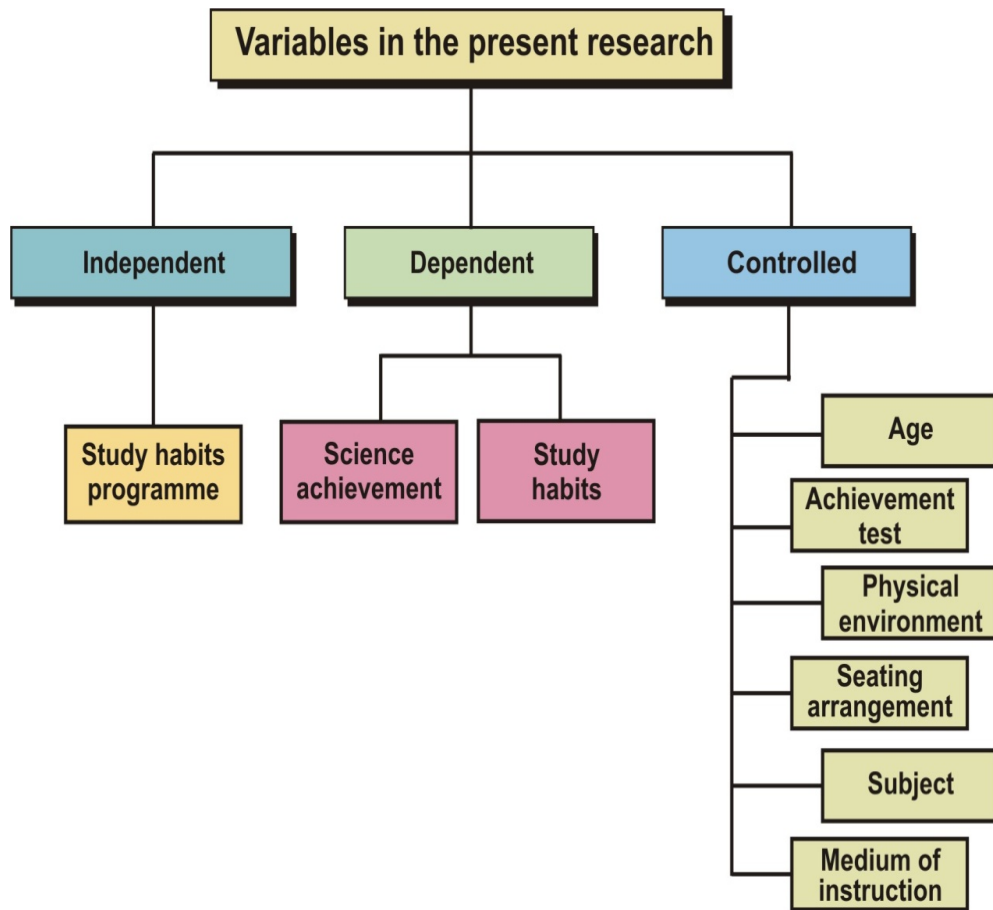


Figure 3.4 Variables in the present research

3.6.1 Independent variable

The independent variables are the conditions or characteristics that the experimenter manipulates or controls in his or her attempt to ascertain their relationship to observed phenomena. (Best and Kahn, 2009, p167-168)

In the present research **Independent variable was Study habits programme**

3.6.2 Dependent Variables

The dependent variables are the conditions or characteristics that appear, disappear, or change as the experimenter introduces, removes or changes independent variables. (Best and Kahn,2009, p168)

In the present research **Dependent variables were Science achievement (In terms of scores of the Science achievement test) and study habits of the students.**

3.6.3 Controlled variables

Variables that are of interest to the researcher can be controlled by building them into the study as independent variables. (Best and Kahn, 2009, p169)

In the present research **Controlled variables were age, achievement test, physical environment, seating arrangement, subject, medium of instruction.**

3.7 CONTROLLING THE THREATS TO INTERNAL VALIDITY

Any uncontrolled extraneous variables affecting performance on the dependent variable are threats to the validity of an experiment. An experiment is valid if results obtained are due to the manipulated independent variable, and if they are generalizable to situations outside of the experimental setting. (Gay, 1996, p345)

- **History**

As per the researcher's knowledge students did not undergo any other parallel programme, so the threat of history was not affected in the present research.

- **Maturation**

The duration of the experiment was small i.e. around 3 months. So this threat of maturation was not affected the results of the experiment.

- **Testing**

To minimize the threat of testing, researcher kept a long gap of about 82 days between Pre and Post Study habits inventory. Science achievement pretest was conducted 3 days prior to implementation of the programme. Thus threat of testing was overcome.

- **Instrumentation**

In the present research the same study habits inventory was used for pre testing and post testing. At the same time Science achievement pretest and posttest were based on same blue print and they were very similar to each other. Thus the threat of instrumentation was overcome.

- **Mortality**

All the students were motivated to attend all the classes regularly. Researcher also maintained the attendance record. The students with less attendance during the programme were eliminated during analysis. Hence effect of mortality was overcome.

3.8 TOOLS FOR DATA COLLECTION

In the present research, researcher had used the following tools.

- a) Study habits inventory by Dr. M .N. Palsane
- b) Achievement Test

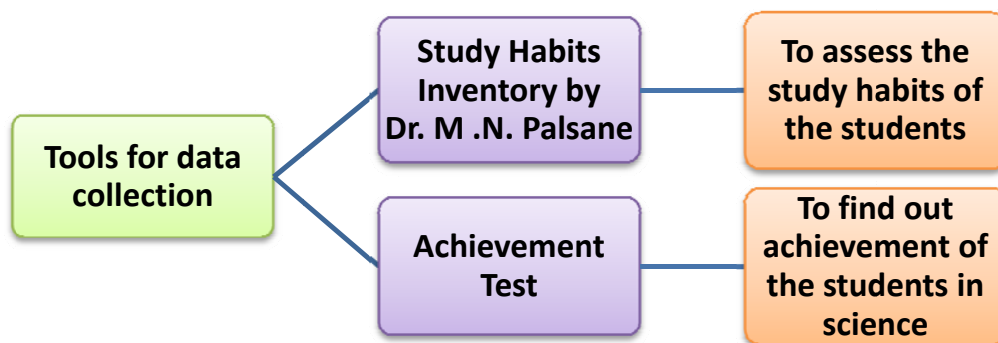


Figure 3.5 Tools for data collection

3.8.1 STUDY HABITS INVENTORY

As mentioned by Nagaraju, (2004) the first study habits inventory (SHI) was constructed by Wrenn in 1933 with a view to survey this feature among students. Locke constructed a self –rating scale for measuring study habits. Mary Esther did an analysis of study habits in 1945. Jammur’s (1958) study habits inventory aims at measuring students’ habits of concentration, note taking, time budgeting and social relationship. Patel B.V. (1975) also constructed and standardized the study habits inventory. (Nagaraju, 2004, p 56-57) Dr. M. N. Palsane constructed his inventory in 1977.

In the present research, researcher used the study habits inventory by Dr. M.N. Palsane, which was made available from Anand Agencies, Pune. Researcher used the Marathi version of the inventory as the students from std.9 of H. B. Girme High School were from semi English medium and the comprehension of the inventory was better in Marathi language for these students. This inventory was easily available and purpose of inventory was matching with the purpose of present study.

As mentioned by Dr. M. N. Palsane in his manual of study habits inventory purpose of the inventory were mentioned below-

1) When students want to know about their study habits they can use this inventory to find out whether they should make any improvements and if so in what direction.

2) This inventory can be used by the teachers and counselors for giving proper guidance to the students who should improve their study habits. They can help these students in the optimum use of their valuable time and energy.

3) Parents can also use this inventory to guide their children.

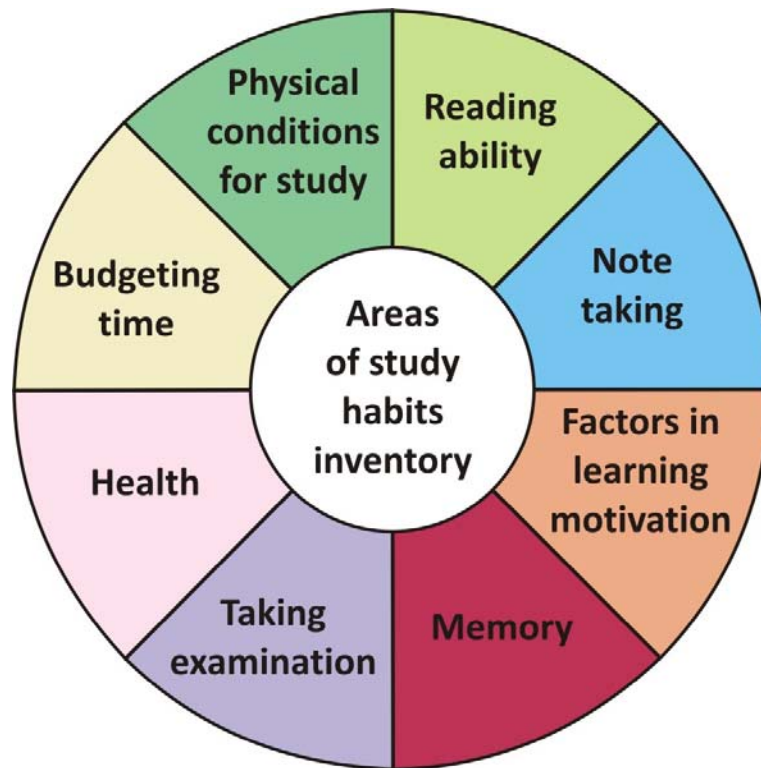


Figure 3.6 Areas of study habits inventory by Dr. M.N. Palsane

Description of each of Study habit

The study habits of the individual cover mainly the reading habits, learning techniques, memory, time–schedule, physical conditions, examination, evaluation etc. The items of the inventory roughly belong to the following areas.

1) Budgeting Time

It is very important to plan the time of study. Time schedule helps to adjust the study periods and other activities according to the needs of the individual. The best way to budget time is to keep the record of all activities throughout the day for one week. The analysis of this diary will help in budgeting the time. By budgeting time students can optimize their success in study as well as their extra-curricular activities.

2) Physical conditions for Study:

Physical conditions play an important part in study habits. The place for study should be calm and quiet. It should be clean and there should be proper illumination and

ventilation. Furniture should be comfortable. There should be sufficient light. One should use diffused light. Study table should be clean and contain only and all the necessary things e.g. papers, pen, books, rubber etc.

3) Reading Ability:

Reading is the basic skill in any kind of study. Reading ability includes various factors such as good vocabulary, speed of reading comprehension, independent selection of appropriate material for reading and locating information. One should be able to read at least 300 words per minute in his mother tongue, 75 to 100 words in any foreign language. Speed of reading is also an important factor. Silent reading is always faster than loud reading. It's necessary to adjust the speed of reading according to the importance of matter. Technical material requires more time than usual one. An individual should try to understand what he is reading. He should try to remember the ideas he has grasped while reading and should be able to summarize the main ideas.

4) Note Taking:

Taking notes in the classroom is an important learning activity. Taking notes from book also helps a great deal in study. There are different ways of taking notes. One may copy everything from text-book. One may take down only important paragraphs or one may take down the headings and sub-headings and important key paragraphs to make an outline. Paraphrasing in one's own words and summarizing is supposed to be the best way of making one's notes. It is a good practice to combine class notes to make a final note. With the help of regular practice note-taking can become a habit.

5) Factors in Learning Motivation:

Apart from ability to learn, desire to learn is an important consideration. If one is genuinely interested in learning he may learn quickly and retain it for a long time. There are individual differences in capacity to learn. Everybody can improve with extra efforts. Spirit of competition and co-operation helps in learning. One learns better in a group.

6) Memory:

Improving memory means learning better. Distributing learning periods is preferable to mass learning. The better we learn the longer we retain. Over-learning helps in remembering for a longer period.

7) Taking Examinations:-

Most of our examinations are essay type where a few questions are given and students are required to write long answers. It is good to prepare an outline and arrange the ideas properly, following a logical pattern of presentation. Use of simple language is advisable. Separate ideas should be discussed in paragraphs. Headings and sub-headings should be properly placed. Important words and phrases may be underlined.

Preparation for examination: One should devote more time and attention to his weak points. A time schedule for study should be prepared. If one is regular in his study habits he is already prepared for the examination calm, cool and relaxed attitude towards the examination is necessary and can be achieved only after a good preparation.

Use of Examination Results : From the results one can find out his strong and weak points. Knowledge of results can motivate an individual and direct his efforts.

8) Health:

Regular and healthy habits of eating, exercise, recreation and sleep help in maintaining good health and sound mental state which is necessary to achieve success in the examination.

Administration of the Inventory:

The inventory can be administered to individuals as well as in groups of 25 to 50. Still larger numbers can be handled with the help of assistant supervisors and the public address system (loud speakers). The subjects should be seated comfortably and as far as possible should not have a chance to talk to other students or glance at their answers. There should be good ventilators and light in the room. By explaining the purpose of the test the supervisor should try to get a full co-operation from the

students. The inventory is self-administering. All the instructions are printed on the front cover page of the inventory.

The supervisor should read these out to the students and explain to them whatever is necessary. The following points should be emphasized.

- The results are useful only if the subjects give honest answers
- The needed bio-data be filled in on the answer sheet. The supervisor should see this personally.
- There is no time-limit, but the subjects should work as fast as possible.
- The answers of the individuals will be kept confidential.
- If the subjects have any difficulty in understanding the meaning of the words or statements, the supervisor may be consulted.

After the test is over the test material of every subject should be collected. The subjects should not be allowed to walk away with the materials.

As mentioned in study habits inventory by Dr. M.N. Palsane

Reliability :

The reliability co-efficient is calculated by test-retest method on a sample of 200 students. The Inventory was administered twice to this sample with an interval of about 4 weeks. **The reliability co-efficient for this inventory is 0.88**

Validity:

The inventory is a kind of checklist and possesses only a face validity. Empirical studies of other types of validities are possible but yet not made.

Scoring:

Scoring was done with the help of scoring key given at the end of the manual. Each statement has 3 alternatives (always or mostly, sometimes, rarely or never). The subject has to choose any one as applicable to him. Score points 2,1,0 are awarded as per the alternative chosen by the subject. The sum of the score points is the Raw Score of the subject.

Norms:

For the norms study, the inventory was administered to the students of S.S.C. the pre-University and the F.Y., S.Y. and T.Y. students of the various faculties. They included boys and girls, rural and urban students and students from colleges of varying reputation. Thus it was attempted to obtain representative and adequate sample for norms study.

As the sex difference was small, separate norms for male and female students are not given.

The obtained raw score may be interpreted in the following manner.

Table 3.1 Interpretation of the scores of study habits inventory

Raw Score	Interpretation
Above 74	Excellent
64-74	Good
53-63	Average
42-52	Unsatisfactory
Below 42	Very Unsatisfactory

3.8.2 ACHIEVEMENT TESTS

Achievement tests attempt to measure what an individual has learned – his or her present level of performance. (Best and Kahn, 2009, p301)

Preparation of achievement tests - In the present research, researcher prepared Science achievement tests for the following lessons from standard 9 Science textbook of SSC board.

Lesson No. 4 - Counting Matter

Lesson No. 7 - Life around You

Lesson No.8 - Highway to Health

Lesson No. 9 - Quality Food and Quality Life

Lesson No. 13 - Why Bodies Float?

The 50 marks tests were prepared for pre and post testing of the students. The Science achievement pretest and Science achievement posttest were based on same blue print. Students were evaluated on the basis of knowledge, comprehension, application and skill based questions.

The details of Science achievement tests are given below.

Table 3.2 Distribution of marks as per the Objectives

Objectives	Marks
Knowledge	10
Comprehension	12
Application	18
Skill	10
Total	50

Table 3.3 Distribution of marks as per the Content

Unit	Marks
Lesson-4 Counting Matter	10
Lesson -7 Life around You	15
Lesson -8 Highway to Health	07
Lesson -9 Quality Food and Quality Life	07
Lesson -13 Why Bodies Float?	11
Total	50

Table 3.4 Distribution of marks according to the type of Question

Types of Questions	Marks
Fill in the blanks with appropriate word	4
State whether the following statements are 'True' or 'False'	4
Match the following	2
Answer the following questions in one sentence	4
Distinguish between the following	4
Find the molecular masses of the following compounds	4
Write short note on the following	4
Give scientific reasons	14
Solve the following	4
Draw well labeled diagrams of the following	6
Total	50

Science achievement tests :

After preparation of the blue print (Table 3.5), two parallel achievement tests were prepared and shown to Science teacher of the school.

(Refer appendix C and E)

Table 3.5 Blue Print of Science achievement tests

Lesson	Subunit	Objectives			Knowledge			Comprehension			Application			Skill			Total
		O	SA	LA	O	SA	LA	O	SA	LA	O	SA	LA				
L – 4	Laws of chemical combination					1										1	
	The atom, size, mass and symbol	1														1	
	Molecular mass and mole concept								4							4	
	Valency									2						2	
	Chemical formulae of compounds	2														2	
L – 7	Biodiversity and classification and hierarchy					1										1	
	Whittaker's five kingdom						2						2			4	
	Classification of plants	1											2			3	
	Traditional classification of animals	1					2			2			2			7	
L – 8	Health						2									2	
	Disease					1										1	

Lesson	Subunit	Objectives			Knowledge			Comprehension			Application			Skill			Total
		O	SA	LA	O	SA	LA	O	SA	LA	O	SA	LA				
	Prevention of a disease	1														1	
	Some infectious disease	1								2						3	
L - 9	Green and white revolution	1														1	
	Taking better care of the crop plants									2						2	
	Protection of crops before and after harvesting			1			2									3	
	Animal husbandry					1										1	
L - 13	Thrust									2		2				4	
	Buoyant force									2						2	
	Archimedes' principle									2						2	
	Relative Density			1								2				3	
	Total	8		2		4	8		4	14		4	6		50		

Note : O - Objective type question
SA - Short answer type question
LA - Long answer type question

3.9 PROCEDURE OF THE STUDY HABITS PROGRAMME

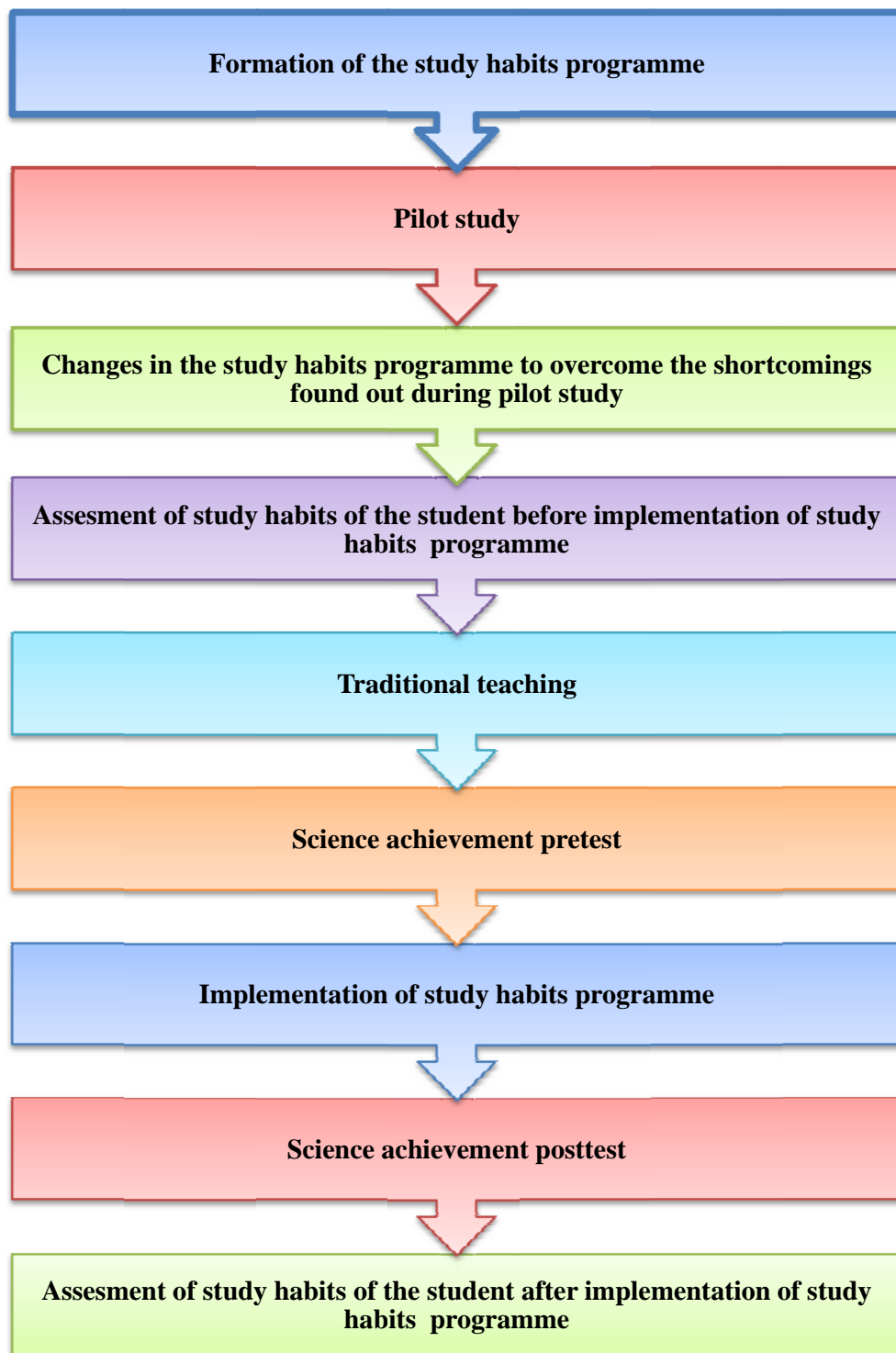


Figure 3.7 Procedure of the study habits programme

3.9.1 PLANNING OF THE STUDY HABITS PROGRAMME

The study habits programme was based on the following theories, laws, or techniques -

- Theories of learning (Mangal, 2010, p181)
- Theories of Motivation (Mangal, 2010, p138)
- Laws of organization explained by gestalt psychologist (Mangal, 2010, p201)
- Memory and training in memory (Mangal, 2010, p257-267)

After taking deep review of related literature, researcher followed following steps for formation of study habits programme.

1. Orientation lecture to motivate students to study.
2. To give general introduction about the programme.
3. Preparation of the manual containing study habits techniques.
4. Explanation of manual and various techniques step by step to the students.
5. Implementation of the programme in teaching using various techniques mentioned in the manual.

3.9.2 EXPERTS' OPINION ABOUT THE STUDY HABITS PROGRAMME

After preparation of the rough draft of the programme, it was discussed in detail with two experts in the field of Education, Dr. Neelima Mehata and Dr. Shobha Joshi. Both of them gave valuable suggestions about the programme which were incorporated during pilot study. Opinion of the Experts were as follows-

- Study habits manual should be given to the students so that they can use it in future.
- Sample chosen was appropriate for the study.
- Techniques selected were appropriate.

(Refer appendix – G1 and G2)

3.9.3 PILOT STUDY

Before implementing the study habits programme the researcher applied the programme on a small group of standard 9 students staying in the neighborhood. Eight Students were selected for pilot study. While conducting the pilot study the researcher realized that certain shortcomings were there in the programme and after discussing it with the students and the guide the researcher made the necessary changes in the study habits programme.

Changes made in the study habits programme after pilot study were as follows:-

- i) In the first plan of study habits programme researcher included various activities to increase motivation of the students but during pilot study considering time limit, researcher realized that it is was quite difficult to arrange all the activities in the school. Therefore researcher decided to organize a guest lecture on 'Motivation for study habit' by expert.
- ii) In the earlier planned programme, things like relaxation, diet, confidence, positive thoughts were not included but while conducting pilot study, researcher felt the need that these minute things should be informed to students to be confident and self-reliant in their studies. So, researcher added related instructions in the manual.

The researcher finalized the study habits programme, after solving problems which rose in the pilot study

3.9.4 SEQUENCE OF THE VARIOUS STEPS IN THE STUDY HABITS PROGRAMME

1. As motivation is requisite as a base for the new learning, Guest lecture on motivation was included as the first step in the programme to motivate the students.
2. General introduction and information about various aspects like diet, rest, introspection, hard work, confidence, positive thoughts etc. was considered as the second step of the programme.

3. Environment of the study plays significant role during study, so specifications about the area were given in the third step of the programme.
4. In the fourth step of the programme, preparation of charts, mnemonic devices, use of laws of organization by gestalt psychologist etc. was introduced to the students, as these activities lead the students in the direction of self-study.
5. Time management helps the learner to carry out daily activities effectively to achieve the goals easily. Therefore it was the fifth step in the present research work.
6. Reading skills were taught after time management as; it helps to manage the timings of various activities such as reading, recalling, repetition, use of SQ4R technique etc. By this step students were aware of various activities and can manage the time along with their reading.
7. After reading a lesson, it is essential for a student to prepare note on it. Note making technique require a base of all above mentioned activities, so it was kept as last activity of the programme.

3.9.5 ASSESSMENTS OF PRE STUDY HABITS INVENTORY

The study habits inventory was filled by the students on 2nd January 2013. The instructions were given to the students to fill the inventory as mentioned by Palsane. One student was seating on one bench during the activity.

3.9.6 TRADITIONAL TEACHING

The 5 chapters were selected after discussing with subject teacher of the school. They are as follows.

Lesson No. 4 - Counting Matter

Lesson No. 7 - Life around You

Lesson No.8 - Highway to Health

Lesson No. 9 - Quality Food and Quality Life

Lesson No. 13 - Why Bodies Float

As per the portion for school unit test, the lessons were taught traditionally to the students by following Herbert steps of lesson plan. (Refer appendix L1)

Charts were used during traditional teaching. Home work was also given to the students daily. Traditional teaching was done from 3rd January, 2013 to 21st January, 2013. Revision was done for two days before Science achievement pretest.

3.9.7 SCIENCE ACHIEVEMENT PRETEST

Science achievement pretest was conducted on 25th January, 2013.

The instructions were given to the students. The result of the test was declared on 29th January, 2013.

3.9.8 IMPLEMENTATION OF STUDY HABITS PROGRAMME

Researcher observed the following points from the study habits inventory filled by the students before implementation of the study habits programme.

- Students did not study at particular hours of the day.
- Students did not study with concentration.
- Before reading a chapter students did not overview it nor read the main points.
- Students did not make notes.
- Students did not take much effort for proper understanding.
- Students felt tensed at the beginning of the examination.
- Students were not aware of the time management techniques.
- Students felt that there is scope for improvement in their study habits.

Therefore in present research, Study habits programme included following things.

3.9.8.I. Guest lecture on ‘Motivation for Study Habits’

Researcher organized guest lecture on ‘Motivation for Study Habits’ on 28th January 2013. The guest speaker was Dr. Shobha Joshi. (Refer appendix H and I)

Dr. Joshi was requested by the researcher to conduct the lecture. Communication was done with her, and prior discussions were held between the researcher and Dr. Joshi. Then she gave her consent for the same.

The following points were discussed in the lecture

- Meaning of Motivation
- Two motivating stories
- Importance of motivation at secondary level.
- Inner motivation
- Importance of study
- Correlation of motivation and study.
- Importance of study habits
- Motivational quotes by eminent personalities.

Time allotted for the lecture was two hours. It was an interacting session more than a lecture. The students were attentive throughout the lecture as the guest speaker; Dr. Joshi took efforts to keep students alert and attentive. Students also showed enthusiasm, they were eager to listen and clarify their doubts. In short, students gave very good response and feedback for the lecture conducted by Dr. Joshi.

3.9.8.II General instructions

General instructions related to the study area were given to the students.

Some specifications about study area were also given to the students.

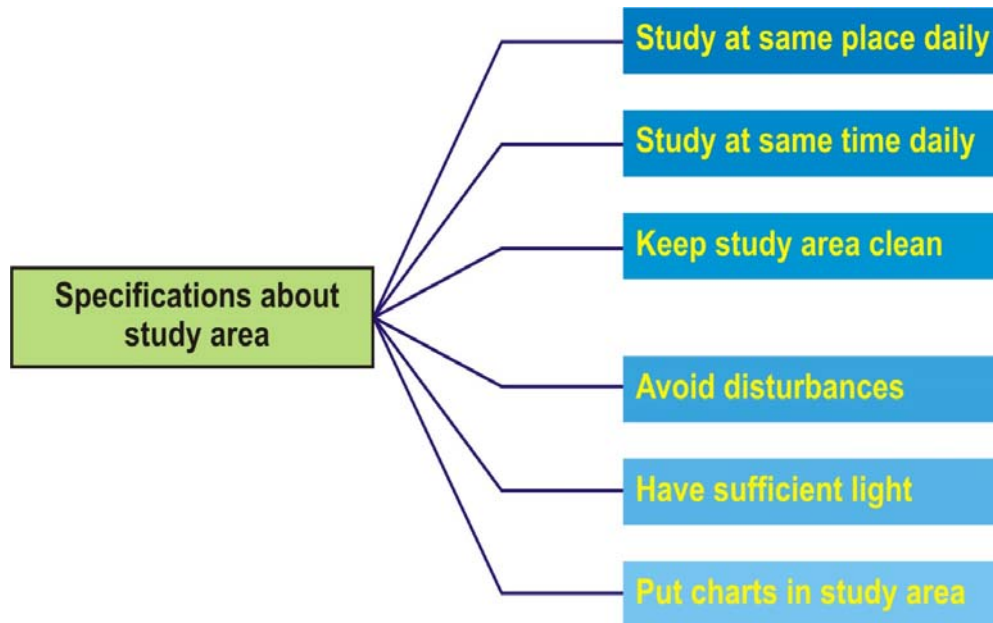


Figure : 3.8 Specifications about study area

Specifications about study area like

- Study at same place daily
- Study at the same time daily i.e. Fix the study timings.
- Keep study area clean free from dust and unwanted things.
- Avoid disturbances i.e. Select the area away from noise or any other disturbances.
- Have sufficient light while studying.
- Put charts in your study area.

3.9.8.III. Preparation of charts based on the manual

The charts were prepared and displayed in the classrooms based on the manual prepared by the researcher. (Refer appendix K)

- Chart 1 - Keep this in your mind
- Chart 2 - Few things to do

- Chart 3 - Manage your time
- Chart 4 - Read skill fully
- Chart 5 - Be particular about note making

3.9.8.IV Explanation of the chart ‘Keep this in your mind’

The chart – ‘Keep this in your mind’ was explained in detailed to the students. The chart was mainly based on following things.

- Confidence
- Positive thoughts
- Introspection
- Relaxation
- Importance of Education
- Hard work etc.

The chart ended with a quote ‘Nobody will help you, unless you first decide to help yourself.’ After the explanation, the chart was summarized in the form of Do’s and Don’ts. Students were asked to read the chart daily and also asked to promise self-check to follow the things.

3.9.8. V. Explanation of the chart ‘Few things to do’

The chart Few things to do was explained to the students. The chart was mainly based on following things

- a) Preparation of charts
- b) Mnemonic devices
- c) Use of laws of organization explained by gestalt psychologist

a) Preparation of Charts

- Researcher explained the importance of chart to the students as follows –

- Researcher explained the students the procedure to prepare the charts showing them various examples of charts.
- Researcher distributed two full sheets of chart papers to each student. Topic from Science was allotted and sufficient time was given to the students to prepare the charts.
- After correction of the charts students were asked to put the charts in their study area.
- Researcher asked the students to prepare the charts for other topics also and put them in their study area.

b) Mnemonic devices

Researcher explained the concept and importance of mnemonic devices to the students which was totally new for them. Researcher taught following techniques of mnemonics to the students.

- **Initial letter strategy** - in this, initial letters of the concepts/ideas are used to remember the things.

eg.- VIBGYOR

- V - Violet
- I - Indigo
- B - Blue
- G - Green
- Y - Yellow
- O - Orange
- R - Red

First the researcher gave general examples to the students followed by the examples from Science subject.

- **The key word method** – In this method the imagery words or figures can be used to remember the new words or concepts. eg.- Porifera – like sponges the organism of phylum porifera are with holes in the body.
 - Students were asked to prepare mnemonics from all the lessons on their own.
 - It was an interesting activity for the students.
 - Students prepared mnemonics for the definitions also.

eg. – 1) Definition of valency - Valency is the combining capacity of an element.

Mnemonic – Val is comb cap of ele.

2) Law of conservation of Matter – Matter is neither gained nor lost during a chemical reaction.

Mnemonic – LCM = Mat is neither gun nor lost in CR

c) Use of laws of organization explained by gestalt psychologist

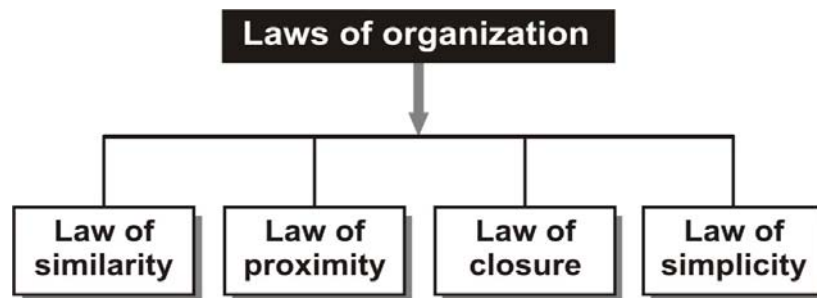


Figure : 3.9 Laws of organization

By considering above laws, researcher explained that

- The things which are similar in size, form quality or intensity can be grouped together for remembering.
- Learning similar things are easier than learning dissimilar things.
- Relate the things with the things that lie close together in space or in time for better remembering.

- Correlate the topic with other topics
- Examples were given to the students like-

The terms like 'Pisciculture' and 'Apiculture' can be remembered by their form and quality.

Fish ----- water ----- class 'Pisces' ----- Pisciculture ----- fish farming

Students were asked to -

- Relate the concepts from their lessons,
- Group the similar concepts, ideas or theories, together
- Make a list of concepts, ideas, theories which are similar in nature etc.

Students enthusiastically made and listed meaningful relations between the concepts. It helps the students to learn new words especially from 'Lesson – 7 Life around you'

3.9.8. VI. Explanation of the chart 'Manage your time'

The chart 'Manage your time' was explained to the students. This chart was about time management.

- Researcher explained importance of time to the students.

Researcher enquired about the general study schedule which was followed by the students, on the basis of which the 'Model time table' was prepared. It was explained to the students. Students were asked to do self-study apart from their daily home work. A Model Time Table was shown to the students.

Table 3.6 Model Time table for study

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
							Morn.	Eve.
7.00 -7.05	Meditation	Meditation	Meditation	Meditation	Meditation	Meditation	Meditation	Meditation
7.05 – 7.45	Science	Science	Science	Science	Science	Science	Science	Hindi
7.45 – 7.55	Break	Break	Break	Break	Break	Break	Break	Break
7.55 – 8.30	Algebra	Geometry	Algebra	Geometry	Algebra	Geometry	Algebra	History
8.30 – 8.40	Break	Break	Break	Break	Break	Break	Break	Break
8.40 – 9.15	English	Marathi	Hindi	History	Geography	English	Marathi	Geography

- Researcher explained the reasons of scheduling particular subject daily.

Researcher explained the following things-

- (a) Why there should be gap of 10 minutes after studying of every subject?
- (b) What kind of activities should be done during break time?
- (c) In the beginning 5 minutes were kept for meditation the importance of meditation and ‘How to do it?’ was also explained in detail.
- (d) Researcher explained that considering total days for study, weightage for the lesson and its difficulty level, the lesson should be divided in various parts for study.

Students showed interest in above activity and asked many questions considering their routine. As it was discussed earlier that most of the students work to support their family income, for them it was difficult to manage extra time for their studies. Still researcher took efforts to discuss individually with them and explained how they can manage it. These working students were also happy by time saving technique for their study.

Researcher asked the students to prepare weekly time table and checked the weekly schedule as well as time table for study and gave necessary suggestions. It was observed that students were preparing and following the time table for their study. (Refer appendix - N)

- **The Chart included following instructions**

- Plan properly for peak performance - In this, researcher asked the students to prepare ‘weekly schedule’, and ‘To-Do List’,
- At the end of the day organize and schedule for next day.
- For time management follow the things like –

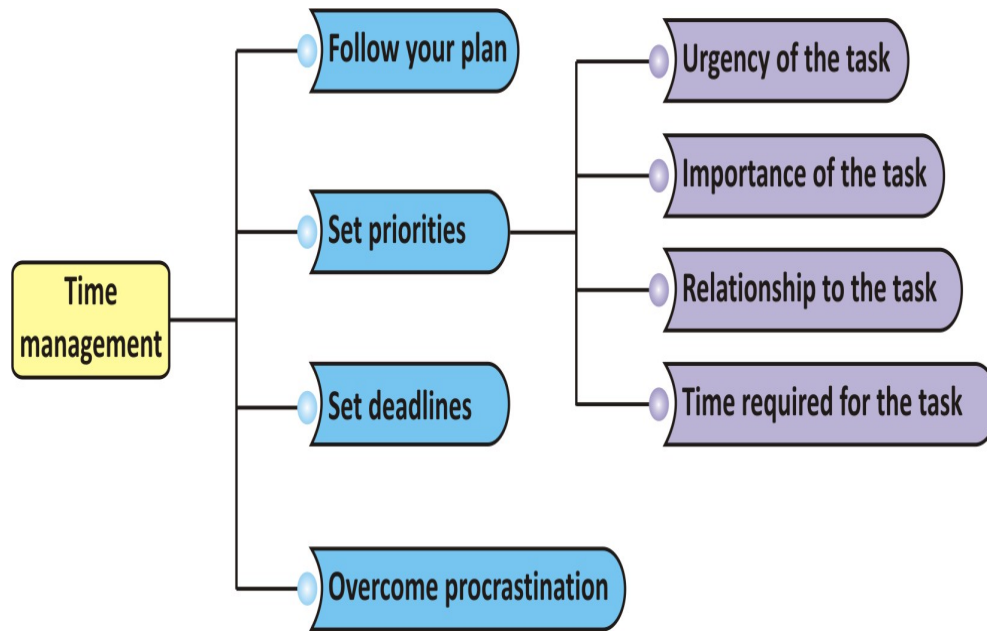


Figure : 3.10 Things to keep in mind for Time Management

- **Follow your plan** – Here, researcher told them to focus on the goals and keep the habit of following the plan.
- **Set priorities** – Researcher explained the importance of setting priorities and asked the students to list out the things they need to do during their working day and prioritize them accordingly by keeping the following things in mind.
 - Urgency of the task
 - Importance of the task
 - Relationship to the task
 - Time required for completing the task
- **Set deadlines** – Researcher asked the students to set achievable deadlines for each task and stick to it. Then only they would be able to finish the work.
- **Overcome procrastination-** The effects of procrastination were explained to the students. To keep the stress at minimum level and to finish the study on time procrastination may act as the hurdle in it.

The chart ended with the thought related to time.

3.9.8. VII. Explanation of the chart ‘Read skillfully’

The next chart explained was Read skillfully.

- i) Researcher explained the importance of reading in study.
- ii) After discussing the reading habits of students, the researcher suggested following activities to incorporate in their reading.

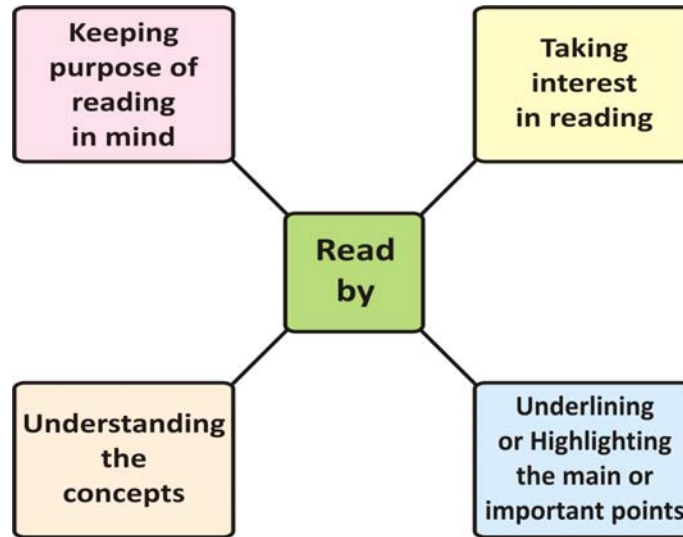


Figure 3.11 Activities to be incorporated in reading

- Take interest in reading –This helps them to concentrate on the reading.
- Underline or highlight the main or important points – This helps the students during their revision.
- Keep purpose of reading in mind – It helps to focus on the reading.
- Understand during reading – Efforts should be taken to understand the concepts otherwise it will be just waste of time.

iii) Use of 'SQ4R' techniques –

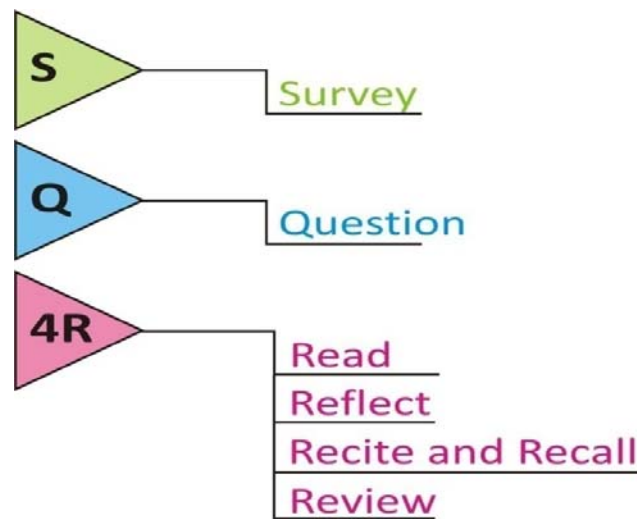


Figure 3.12 SQ4R Technique

Researcher explained the meaning, use and steps of 'SQ4R' technique.

- **Survey** – Researcher explained them the first step with suitable example including following points.
 - Read the title, introduction or summary to know the important points.
 - Notice the bold face or coloured headings, maps, graphs, charts, tables, figures and questions.
- **Question** – The questions like why? , What? , When? , Where?, How? , and Who? Should be asked to one self before actual reading of the lesson.
- **Read** – The first section with the question in mind should be read carefully and search for the answer.
- **Reflect** – Make the read content meaningful by linking it with previous knowledge, comparing and correlating with other topics, subjects etc.

- **Recite and Recall** – Remember the information given in the lesson and recall it, try to answer the questions by recalling.
- **Review** – Review the whole lesson again after evaluating the reading and recalling the answer. Review minutely each and every point.

iv) Researcher explained the steps in detail as mentioned in manual.

v) Researcher gave a demonstration of SQ4R technique by taking a Science ‘Lesson No -13 – Why bodies float?’

Researcher asked the students to develop the habit of reading lessons by using SQ4R technique and kept a follow up of the told activity. Students were interested and eager to use the technique. They revised the steps by asking their queries. The chart ended with a quote on ‘Self-confidence’.

3.9.8. VIII. Explanation of the chart ‘Be particular about note making’

The chart ‘Be particular about note making’ was discussed and explained in detail to the students. Researcher gave many examples of note making and note taking also.

i) **Consider following things in note making -**

- Notes should be concise, brief and accurate
- Organization of note should be done in your own way.
- Concentration is important in note making
- Use abbreviations during note making.
- Draw diagrams, flow chart, concept, maps in the notes as per the requirement.
- Underline, highlight the important points, concepts.
- Keep proper margins to both the sides of the page to write main points, formula, concepts etc.
- Review the notes very often.

- Can ask the teacher to correct the notes.
- Don't copy the full text from the lesson / book.
- Leave some space after finishing with one concept to add points in future.

ii) Researcher explained two types of note making.

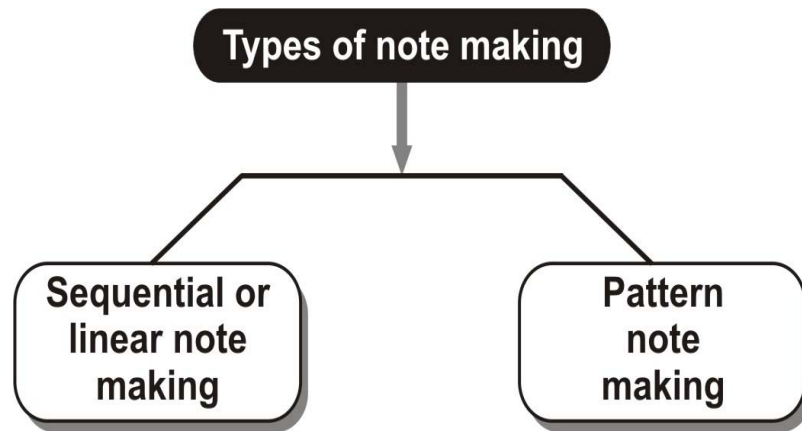


Figure 3.13 Types of Note making

A. Sequential or linear note making - In this form, notes are prepared in linear form. Main points are written one below the other. In this type diagrams, charts, abbreviations, symbols can be used to aid the notes.

B. Pattern note making - In this form, the central heading or concept is taken at the centre then it is surrounded by other related ideas or concepts. Symbols, images, arrows, can be used.

Researcher showed the examples of each type for 'Lesson - 4 Counting matters'. Researcher asked the students to prepare the notes for all the other chapters and checked it. Students were eager to prepare notes on their own; they came up with new ideas for pattern note making which were appreciable. (Refer appendix – O)

3.9.8. IX. Revision

Revision of all charts was done and the manual was distributed to the students.

3.9.8. X. Task given to the student

Researcher asked students to use the techniques from manual in their study and explained it by considering all the lessons.

Researcher discussed all the chapters one by one and asked the students to

- Prepare time table
- Read the lesson by using SQ4R technique
- Prepare mnemonic devices
- Prepare charts and stick them at the study area.
- Prepare notes

Each activity for each lesson was done in the class. Students used to share their mnemonics, charts with each other. Notes were discussed among themselves.

(Refer Appendix – O)

3.9.8. XI Follow up of the given task

As students started studying on their own, researcher did not teach the lessons which were already taught during traditional teaching but asked them follow the various techniques of study habits. Students also did not feel the need of revision before post Science achievement text. Researcher kept continuous follow up of all the activities.

3.9.9 SCIENCE ACHIEVEMENT POSTTEST

The Science achievement posttest was conducted on 8th March 2013. Same instructions similar to Science achievement pretest were given. The test was conducted in same classroom used during Science achievement pretest.

3.9.10 ASSESSMENT OF POST STUDY HABITS INVENTORY

The post study habits inventory was filled on 26th March 2013. To overcome the priming effect, a gap of 82 days was there in Pre and Post study habits inventory. Same instructions were given to students as mentioned by or Palsane.

3.9.11 WORKING HOURS OF TEACHING OF STUDY HABITS TECHNIQUES

The working hours devoted for teaching of various techniques are given below

Table 3.7 Techniques and hours of teaching

TECHNIQUE	HOURS
Motivation Meditation, Positive thinking, Introspection, Relaxation, Hard work, Confidence etc.	5
Specification about study area	1
Preparation of charts	7
Mnemonic devices	6
Use of laws of organization	3
Time management	5
Reading skill SQ4R technique	6
Note making	8

3.10 FEEDBACK ABOUT THE STUDY HABITS PROGRAMME

Researcher had prepared short open ended questionnaire to get feedback from students and their parents about the study habits programme. (Refer appendix – Q1 and Q2)

Though it was not the major objective of the present research, to know the reactions, queries and feedback from students and parents, the questionnaire was prepared and got filled by them. The qualitative analysis was mentioned in chapter four for the same.

3.11 STATISTICAL TOOLS

t-test

For the testing of all the hypotheses 't-test' was used and it is discussed in Chapter 4 in detailed.

3.12 PROGRAMME SCHEDULE

The programme schedule is given below.

Table 3.8 Programme schedule

Date	Task
2.1.13	Introduction about the programme was given. Pre-Study habits inventory was got filled .
3.1.13 to 21.1.13	Traditional teaching was done.
22.1.13 to 23.1.13	Revision was taken for all the lessons.
25.1.13	Science achievement pretest was conducted.
28.1.13	Guest lecture arranged on ‘Motivation For Study Habits’. Guest speaker – Dr. Shobha Joshi.
29.1.13	General instructions regarding the programme were given. Result of Science achievement pretest was declared.
30.1.13 to 7.3.13	Teaching of study habits techniques was done.
8.3.13	Science achievement posttest was conducted.
15.3.13	Result of Science achievement posttest was declared.
26.3.13	Post study habits inventory was got filled.

3.13 SCHEDULE OF THE RESEARCH WORK

The schedule of the research work is shown in the following figure. The task was started in the month of August 2012 and ended in December 2014.

Year	2012					2013											2014												
Month	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Review																													
Related reading																													
Preparation of programme																													
Pilot Study																													
Finalization of Programme																													
Implementation of Programme																													
Data Analysis																													
Writing of research report																													
Typing and Finalization of research report																													

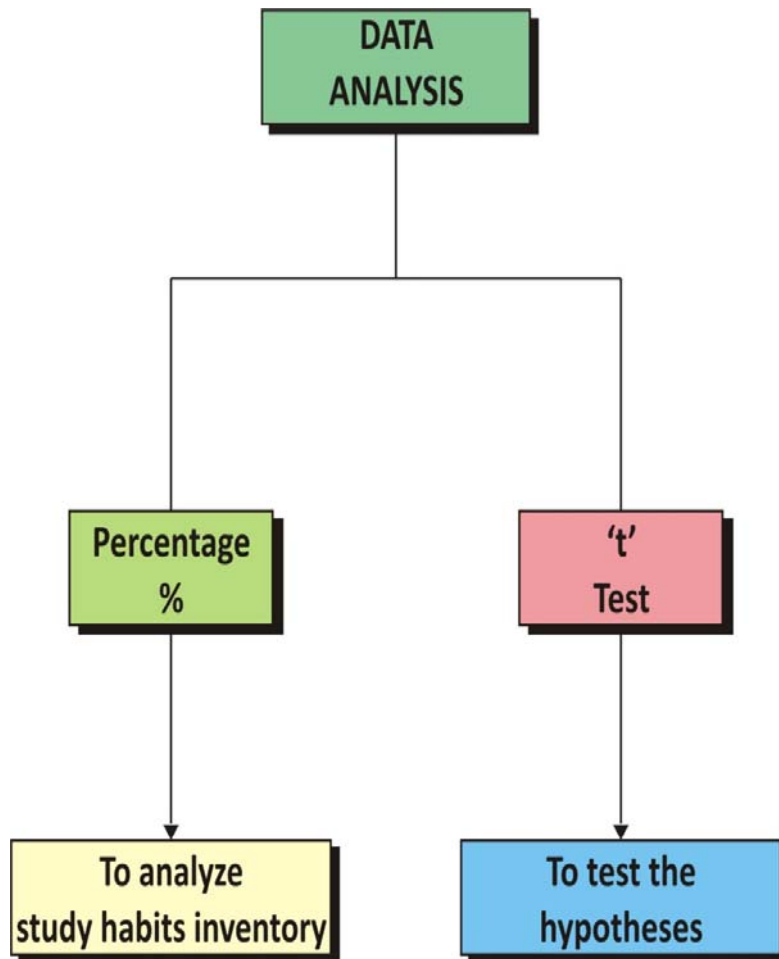
Figure 3.14 Schedule of the research work

To Conclude:

In this chapter researcher gave description of the study habits programme and schedule of the research work. The step that follows after data collection is data analysis. The details of data analysis and findings derived from them are presented in the next chapter.

CHAPTER FOUR
DATA COLLECTION,
ANALYSIS AND INTERPRETATION

At a Glance



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CHAPTER FOUR

DATA COLLECTION, ANALYSIS AND INTERPRETATION

4.0 INTRODUCTION

In the research work, data collection, tabulation, analysis and interpretation is very important. According to Gay, 'Analysis of the data is as important as any other component of the research process. Regardless of how well the study is conducted, inappropriate analyses can lead to inappropriate conclusions.'(Gay, 1996, p 416) For this purpose, analysis and interpretation should be done very carefully.

In the present research, the following tools were used to collect the data.

- Study habits inventory by Dr. M. N. Palsane, to assess the study habits of the students.
- Achievement test, to find out achievement of the students in Science.

4.1 STEPS OF DATA COLLECTION IN PRESENT RESEARCH

The head of the selected school was requested to allow the researcher for data collection in the school. The programme and the time schedule were communicated to the head of the school after permission was granted.

The Students of std. 9, Division 'A' were selected. Total Number of the students was 79 out of which 70 students were present regularly during the programme. The students were motivated and encouraged to respond genuinely to the inventory and achievement test and also to participate in the scheduled programme.

The Pre study habits inventory was filled by the students on 2nd Jan, 2013. Traditional teaching was done from 3rd Jan 2013 till 24th Jan, 2013, Science achievement pretest was conducted on 25th Jan, 2013.

The programme was implemented from 28th January, 2013 to 7th March 2013. Science achievement posttest was conducted on 8th March 2013.

At the end, after giving proper time span, the post study habits inventory was filled by the students on 26th March 2013.

In this way, for almost 3 months the researcher visited the school for one to one and half an hour daily except Sundays.

The steps are shown in the diagram 4.1.

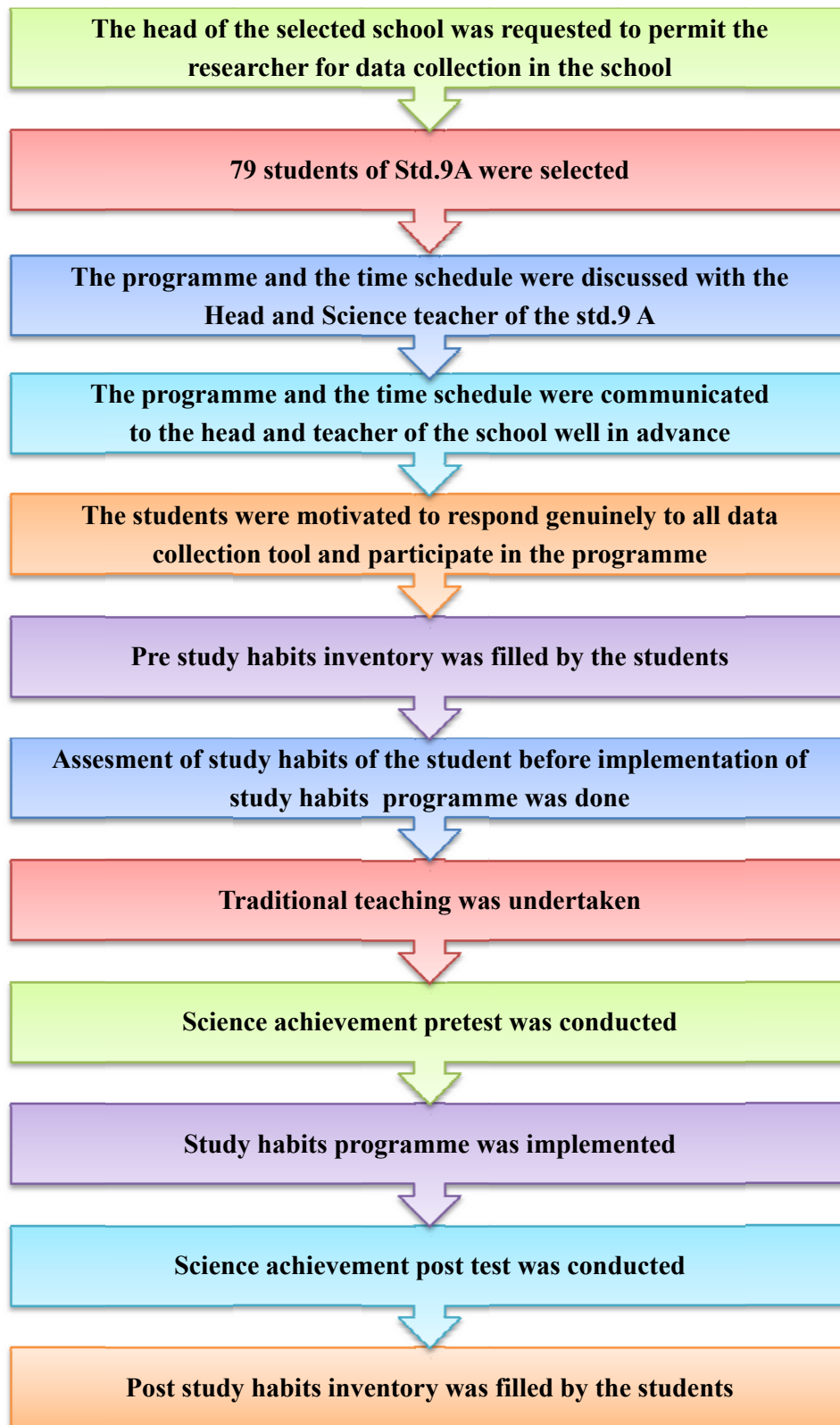


Figure 4.1. Steps in data collection

In the study 79 students of std.9 A were selected but scores of 9 students were not taken into consideration as they were not present for all the tests and also had less attendance during the programme .

Table 4.1 Details of students of std. 9 A from H.B. Girme High School selected for research work.

	Present	Absent	Total
Girls	25	1	26
Boys	45	8	53
Total	70	9	79

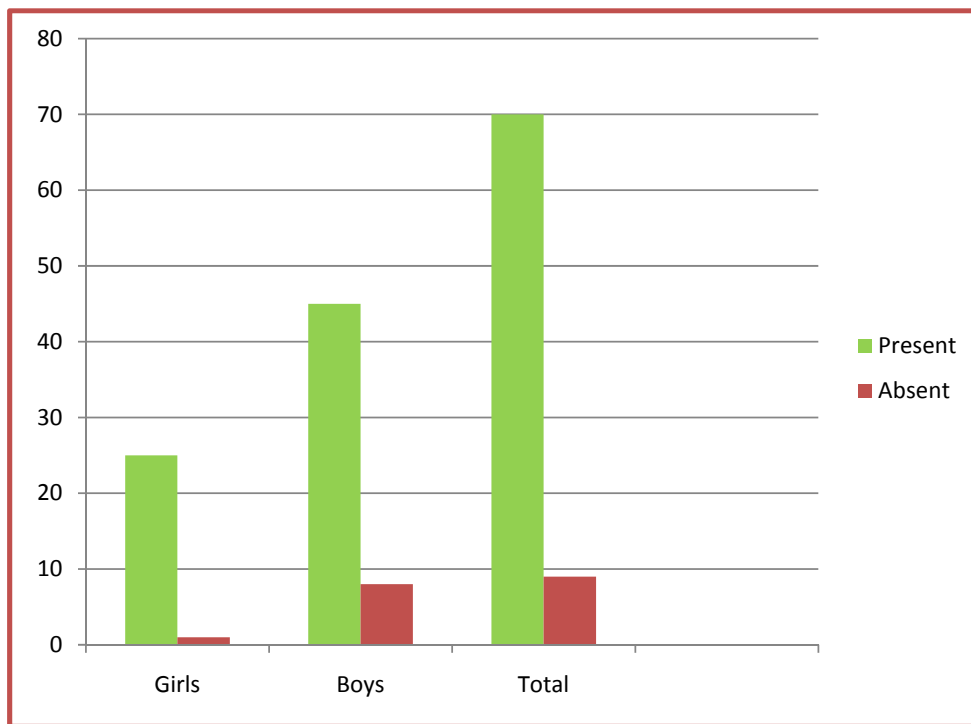


Figure 4.2 Present and absent students of std. 9 in H.B.Girme High School during implementation of the programme

4.2 TABULATION AND ANALYSIS OF THE DATA

According to Secrets, “Classification is the process of arranging data into sequences and groups according to their common characteristics, or separating them into different but related parts” (Gupta, 2004, p 31)

According to Tuttle A.A. “ A Classification is a set of parts called classes, according to some precisely defined differing characteristics possessed by all the elements of the category.” (Gupta, 2004, p 31)

It was very essential to process or administer the collected data accurately. To assess the study habits of the students, a standardized ‘Study habits inventory’ by Dr. M. N. Palsane was used. In its manual the steps to be followed in scoring answer sheet and a scoring key was provided. Due to this, the process of administration was facilitated. As per the instructions given in the manual the inventory was administered.

There were total 45 items in the inventory which cover the area like

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

The scores of the Science achievement test were also processed and analyzed. The analysis was carried out on the basis of objectives of the study and the hypotheses formulated employing appropriate statistical techniques. Tables and figures were used wherever necessary to present the data.

The statistical techniques used to analyze the data and test the hypotheses were mean, standard deviation, coefficient of correlation and ‘t’ test. For analysis of study habits inventory ‘percentage’ was used as a tool.

a) MEAN (M)

Mean is the sum of all the values of the items in a series divided by the number of items. It is represented by the symbol 'M' (Mangal, 2005, p41). The mean is calculated by the formula -

$$M = A.M. + \left(\frac{\sum fd}{N} \times i\right)$$

Where, A.M. = Assumed mean

$\sum fd$ = Sum total of frequency x deviation

i = Class interval

N = Total frequency

b) STANDARD DEVIATION (S.D. or σ)

Standard deviation is defined as the square root of the average of the squares of the deviation of each score from the mean. (Mangal, 2005, p41) The formula used to calculate standard deviation is -

$$\sigma = \left(\frac{i}{N}\right) \sqrt{N \sum fd^2 - (\sum fd)^2}$$

Where, f = frequency

d = Deviation of scores from assumed mean

N = Total number of students

i = Class interval

c) COEFFICIENT OF CORRELATION (r)

Coefficient of correlation is a ratio which expresses the extent to which changes in one variable are accompanied by changes in the other variable. (Mangal, 2005, p80) The formula used to calculate coefficient of correlation is –

$$r = \frac{\sum XY}{\sqrt{(\sum X^2)(\sum Y^2)}}$$

Where, $\sum XY$ = Sum of all the products of deviations (each x deviation multiplied by its corresponding y deviation)

d) 't' – TEST

The test of significance of the difference between two means known as t-test. It involves computation of ratio between experimental variance and error variance.

$$t = \frac{DM}{SEDM}$$

Where, DM = Difference between two means

SEDM = Standard error of difference between two means

4.3 CODING OF THE DATA COLLECTED

As in the present research, Science achievement test and study habits inventory were administered two times that is before and after implementation of the study habits programme. For the sake of convenience following codes were used.

- **Pre stage** - Before implementation of the study habits programme.
- **Post stage** - After implementation of the study habits programme.
- **Pre SHI** - Study habits inventory filled by the students before implementation of the study habits programme
- **Post SHI** - Study habits inventory filled by the students after implementation of the study habits programme.
- **Pre AT** - Science achievement test conducted before implementation of the study habits programme.
- **Post AT** - Science achievement test conducted after implementation of the study habits programme.

4.4 GRAPHICAL PRESENTATIONS OF THE COLLECTED DATA AT PRE AND POST STAGE

Graphical presentations of the collected data at Pre and Post stage are shown below.

4.4.1 Graphical presentation of raw scores of Science achievement pretest and posttest are shown below.

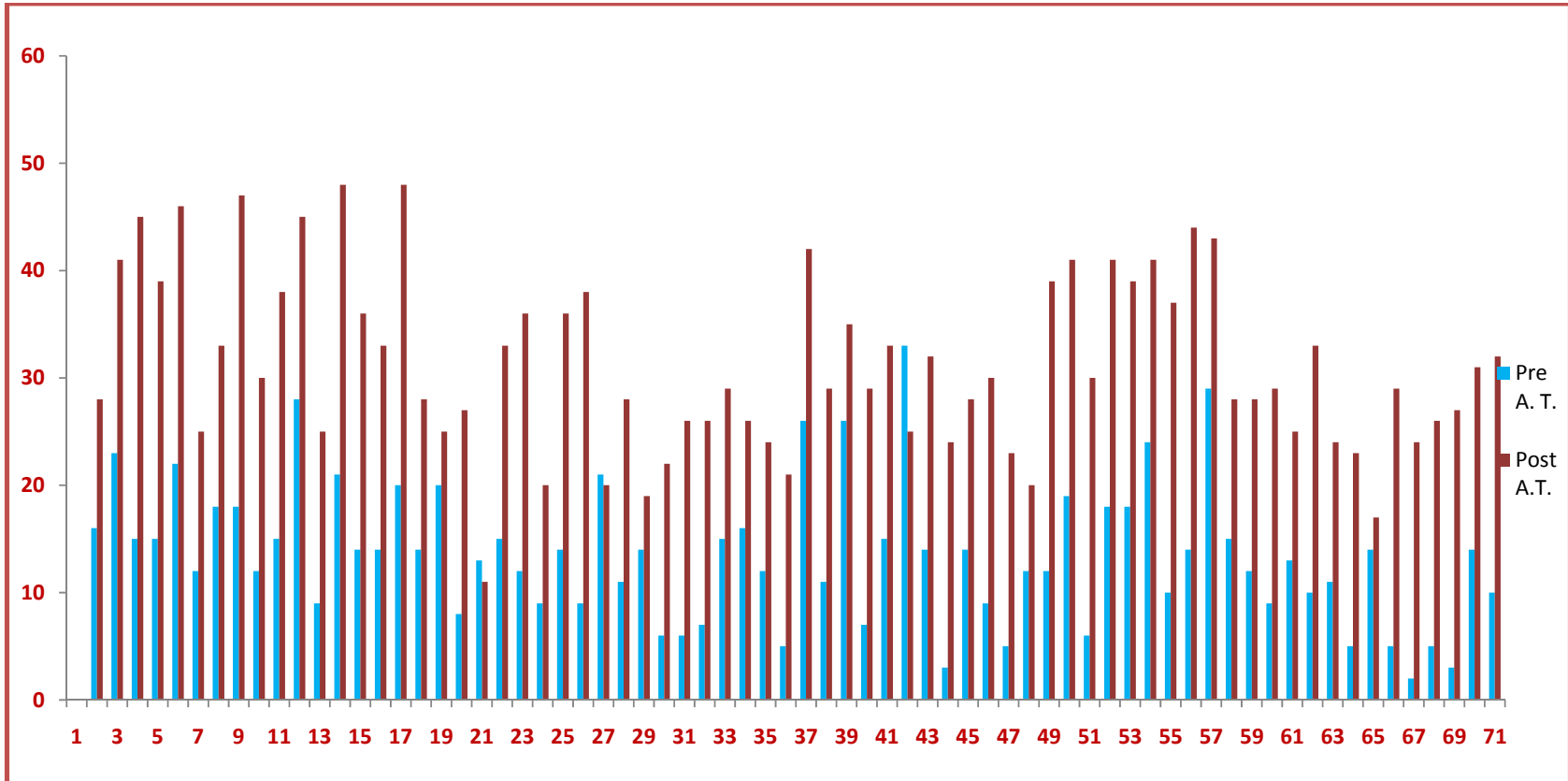


Figure 4.3 Raw scores of Science achievement pretest and posttest

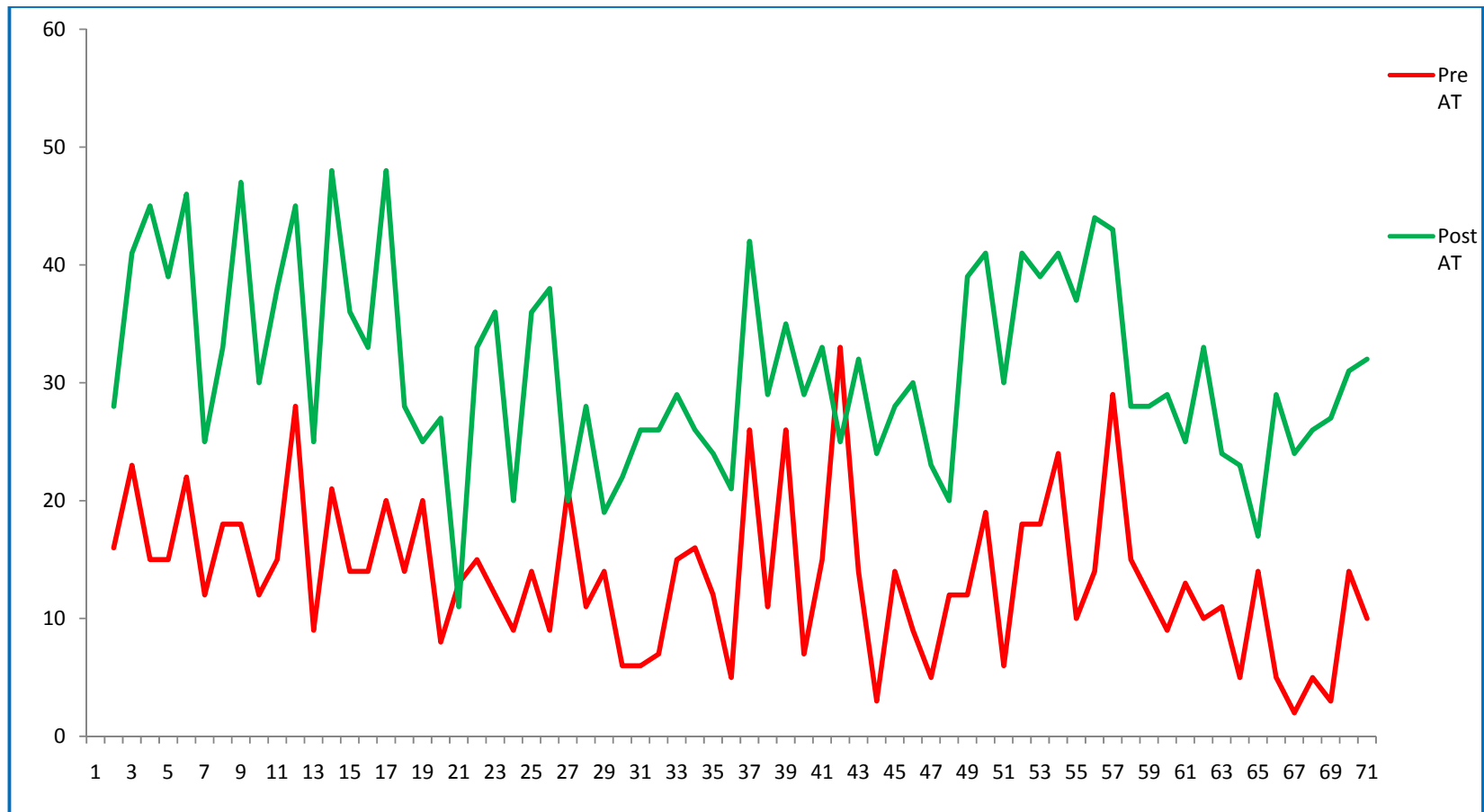


Figure 4.4 Raw scores of Science achievement pretest and posttest

4.4.2 Graphical presentation of raw scores of Pre and Post study habits inventory are shown below.

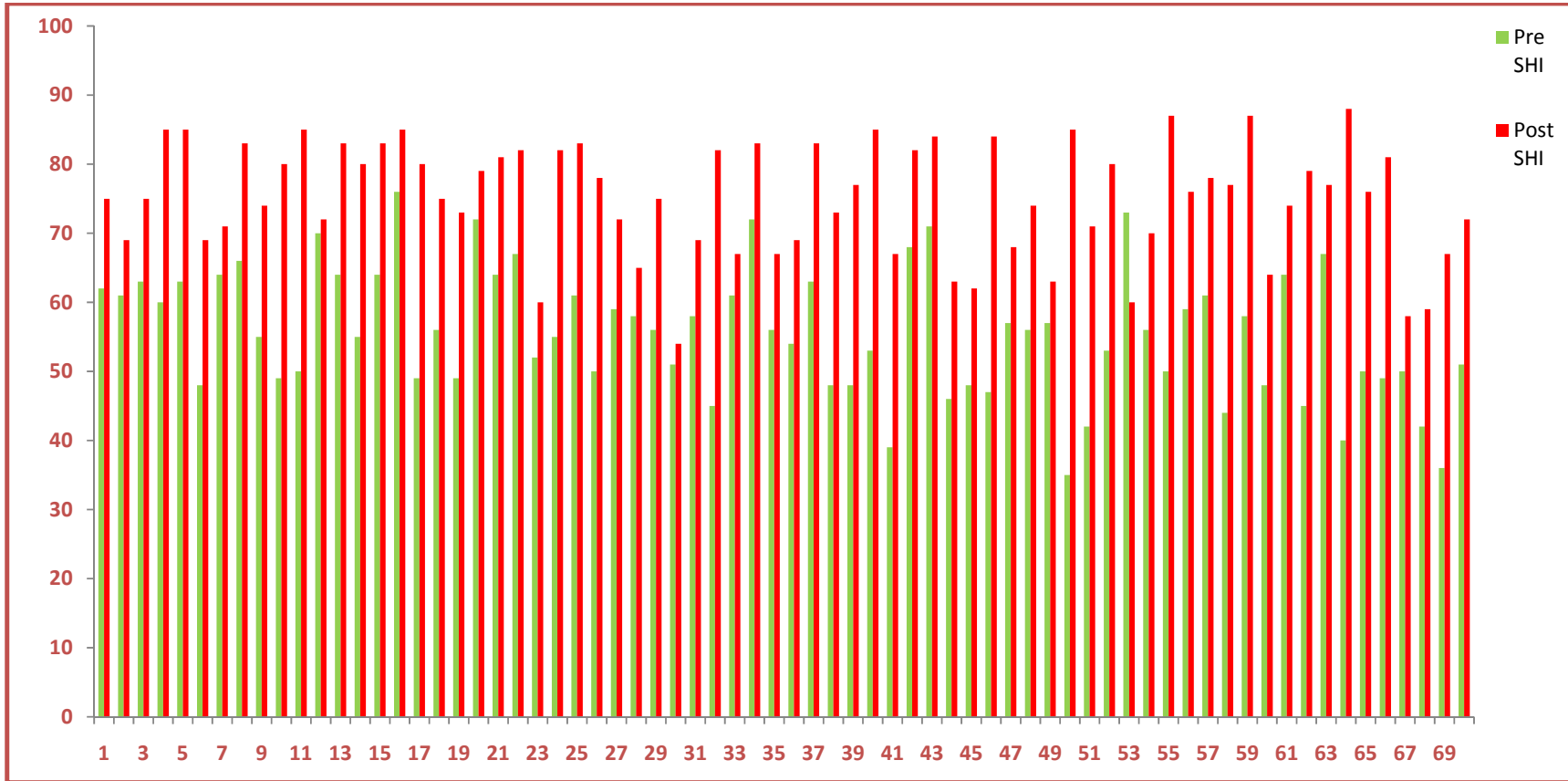


Figure 4.5 Raw scores of Pre and Post study habits inventory

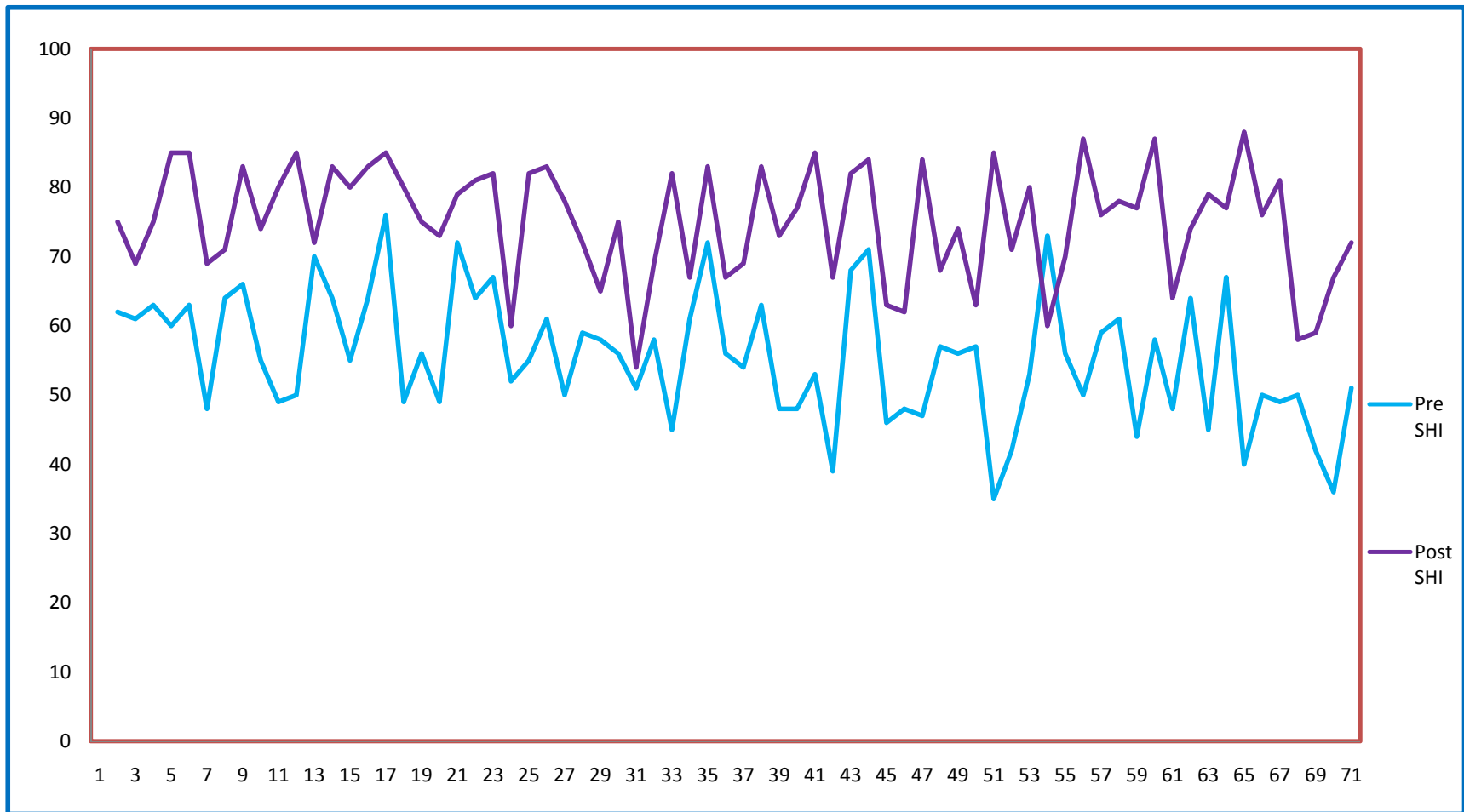


Figure 4.6 Raw scores of Pre and Post study habits inventory

4.4.3 - a) Smooth curve of classified data of Science achievement pretest

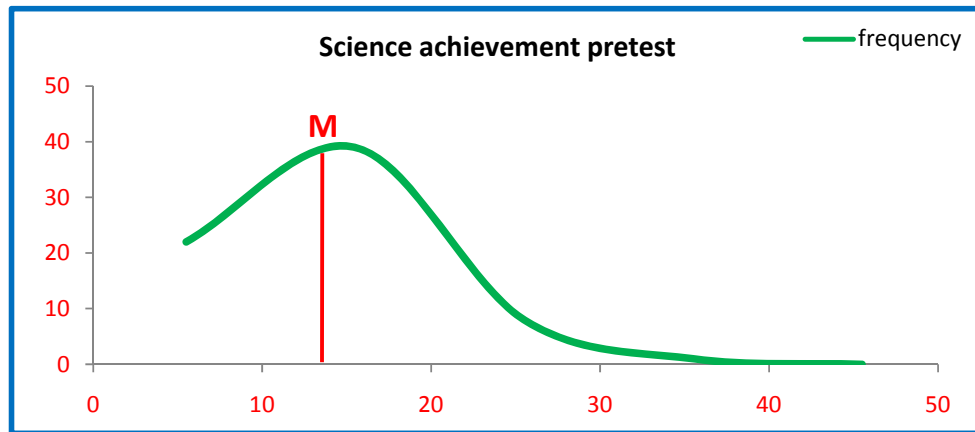


Figure 4.7 Frequency of Science achievement pretest

Mean = 13.6 Median = 14 Mode = 14

4.4.3 - b) Smooth curve of classified data of Science achievement posttest

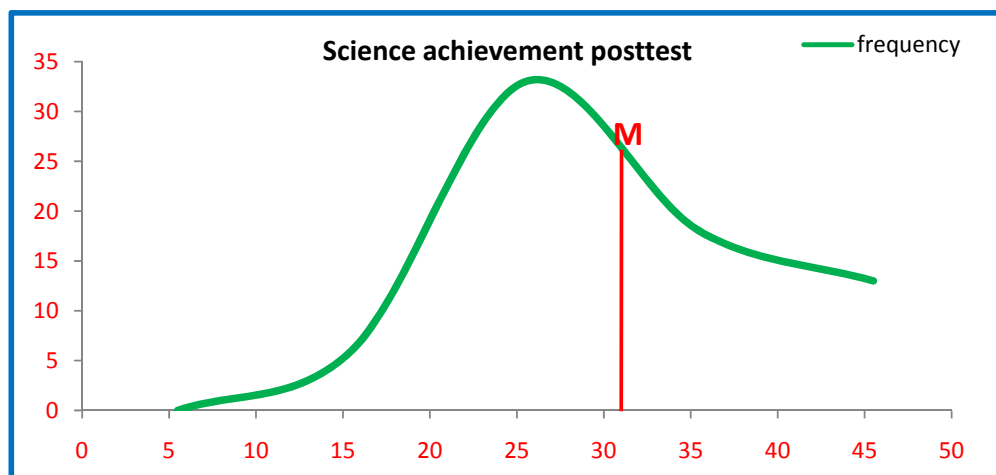


Figure 4.8 Frequency of Science achievement posttest

Mean = 31.18 Median = 29 Mode = 28

From the figures 4.4.3.a) and 4.4.3.b) it can be stated that, The value of Mean at Science achievement pretest was 13.6 which was shifted to 31.18 at Science achievement posttest. Also the values of Median and Mode were also shifted to positive side at Science achievement posttest. Though the value of Mean, Median and Mode shifted to the positive end of the graph, the normality of the group is observed to be maintained.

4.4.4 -a) Smooth curve of classified data of Pre study habits inventory

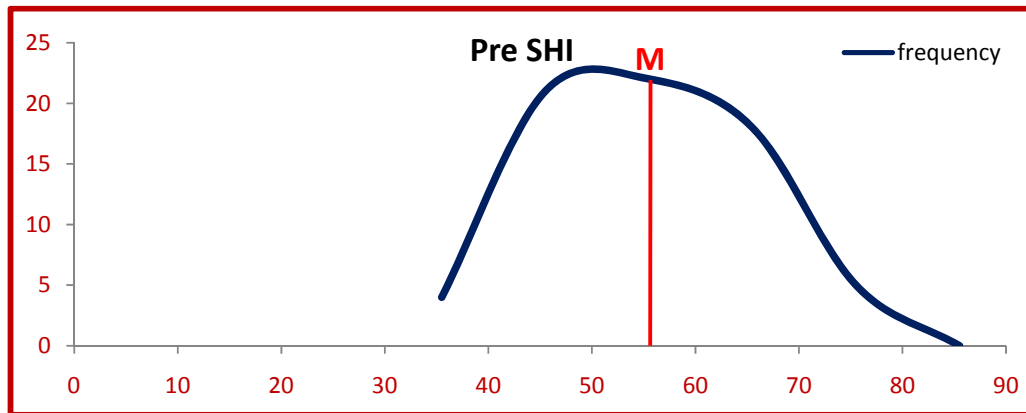


Figure 4.9 Frequency of Pre SHI

Mean = 55.56 Median = 56 Mode = 48

4.4.4 - b) Smooth curve of classified data of Post study habits inventory

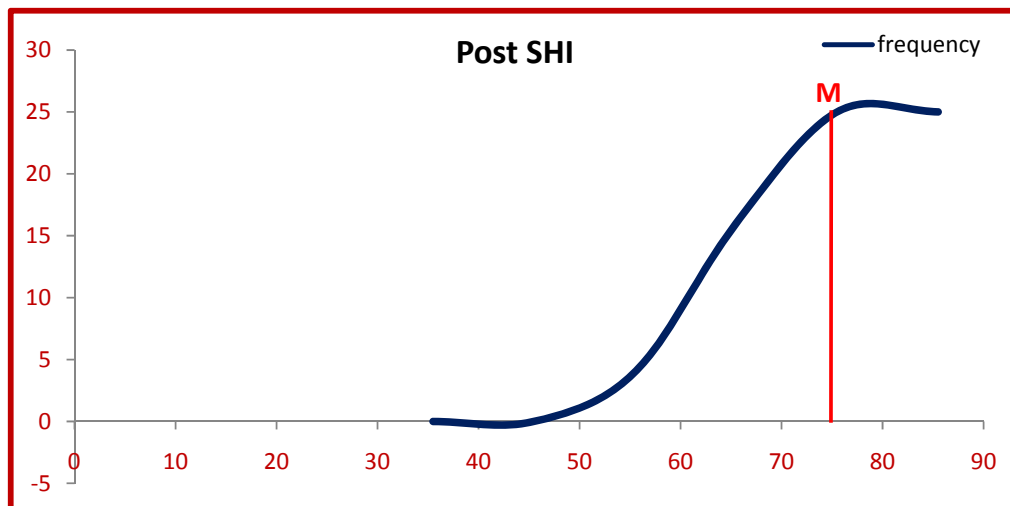


Figure 4.10 Frequency of Post SHI

Mean = 75.16 Median = 76 Mode = 85

From the figures 4.4.4.a) and 4.4.4.b) it can be stated that, the value of mean at Pre SHI was 55.66 which was shifted to 75.16 at Post study habits inventory. The values of Median and Mode were also shifted to positive side at Post study habits inventory. The graph became 'J' shaped, which indicates that maximum students improved their study habits to a large extent.

4.5 STASTICAL ANALYSIS AND HYPOTHESES TESTING OF THE COLLECTED DATA

In the present research, for hypothesis testing, researcher selected 0.01 level of significance level to minimize the risk of Type I error. As mentioned by Best and Kahn (2010, p 408-409), in educational research we should be particularly careful about Type I error i.e. we do not want to take a chance on rejecting null hypothesis when it is true.

4.5.1 ANALYSIS OF THE DATA COLLECTED FOR THE OBJECTIVE 1

Objective 1 – To assess the existing study habits of Semi English students

To fulfill the above mentioned objective the assessment of study habits of students was done at pre stage.

Table 4.2 Study habits of students at Pre SHI

Sr.No.	Categories of study habits	Total number of students	Percentage (%)
1.	Excellent	1	1.43
2.	Good	14	20
3.	Average	27	38.57
4.	Unsatisfactory	23	32.86
5.	Very unsatisfactory	5	7.14
Total		70	100

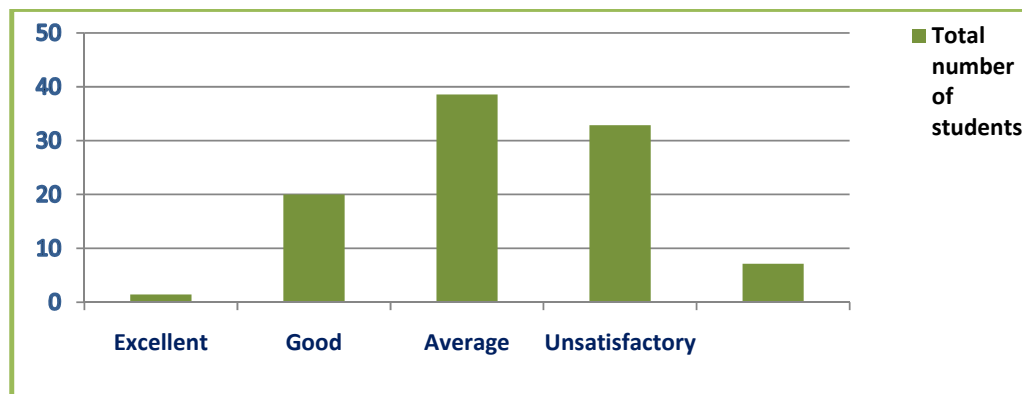


Figure 4.11 Percentage of the students at Pre SHI

It is revealed from Table 4.2 that

- At Pre SHI, very few (1.43%) students had excellent study habits.
- Only 20% of students had good study habits.
- Most of the students (38.57 %) had average study habits.
- The percentage of students, who had unsatisfactory study habits is also more (32.86%).
- Few students (7.14%) had very unsatisfactory study habits.
- So, it can be stated that the study habits of the students of Std. 9A from H.B. Girme high School were in average category.

4.5.2 – a) ANALYSIS OF THE DATA COLLECTED FOR THE OBJECTIVE 2

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

To fulfill the above mentioned objective the assessment of study habits of boys and girls was done at Pre stage.

Table 4.3 Percentage of the girls and boys at Pre SHI

Categories of study habits	Percentage of girls	Percentage of boys
Excellent	4 %	0 %
Good	32 %	13.33 %
Average	40 %	37.78 %
Unsatisfactory	24 %	37.78 %
Very unsatisfactory	0 %	11.11 %
Total	100 %	100 %

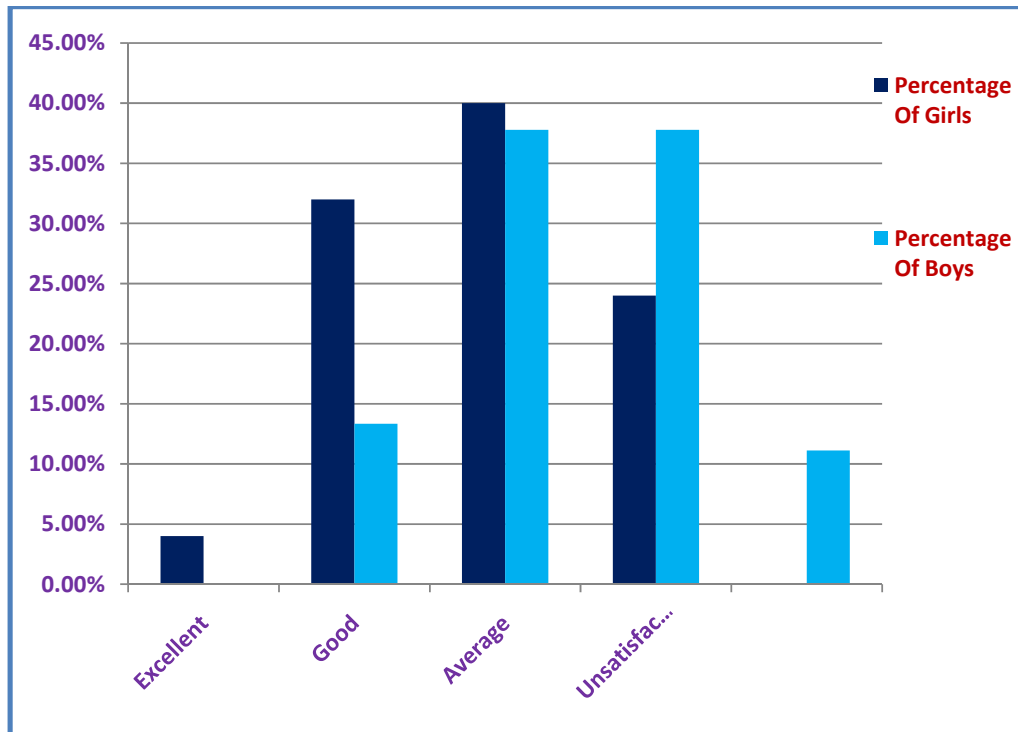


Figure 4.12 Percentage of the girls and boys at Pre SHI

It is revealed from the table 4.3 that,

- No girls (0 %) had very unsatisfactory study habits but very few boys (11.11%) had it.
- The percentage of girls (24%) is less than that of boys (37.78%) in unsatisfactory category.
- Most of the girls (40%) and boys (37.78) had average study habits.
- Few boys (13.33%) and more girls (32%) had good study habits.
- Very few girls (4%) had excellent study habits but none of the boys had it.

It shows, girls had better habits than boys at pre stage.

4.5.2 – b) TESTING OF HYPOTHESIS 1

The second objective of the present research was-

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

As per the above objective the research hypothesis was framed as follows.

Research hypothesis 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.

For statistical testing the related null hypothesis was framed as follows-

Null hypothesis 1

There will be no 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.

't' value was calculated to find the difference between study habits of Boys and Girls before implementation of study habits programme.

Table 4.4 Summary of 't' Testing to find out difference between the mean scores of study habits of boys and girls at pre stage

Test	Pre SHI of Boys	Pre SHI of Girls
N	45	25
M	53.2	59.80
σ	9.22	7.73
Degrees of Freedom	df = N1 + N2 - 2 = 68	
SEDM	2.07	
DM	6.60	
t = DM / SEDM	t = 3.19	Two-tailed test Table value at 0.01 level = 2.660

As per table 4.4, the obtained 't' value is 3.19. The table value for degrees of freedom 68 at 0.01 level is 2.660. As obtained 't' value exceeds the table value, null hypothesis is rejected. Therefore there is a significant difference between the mean scores of study habits of boys and girls before implementation of the study habits programme.

4.5.3 ANALYSIS OF THE DATA COLLECTED FOR THE

OBJECTIVE 4

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

To study the effectiveness of the study habits programme in terms of the study habits, analysis was done as follows by considering the categories of study habits in the manual of by Dr. M.N. Palsane at Pre stage and Post stage.

Table 4.5 Percentage of students at Pre SHI and Post SHI

Categories of study habits	Percentage of students at Pre SHI (%)	Percentage of students at Post SHI (%)
Excellent	1.43	61.43
Good	20	27.14
Average	38.57	11.43
Unsatisfactory	32.86	0
Very unsatisfactory	7.14	0
Total	100 %	100 %

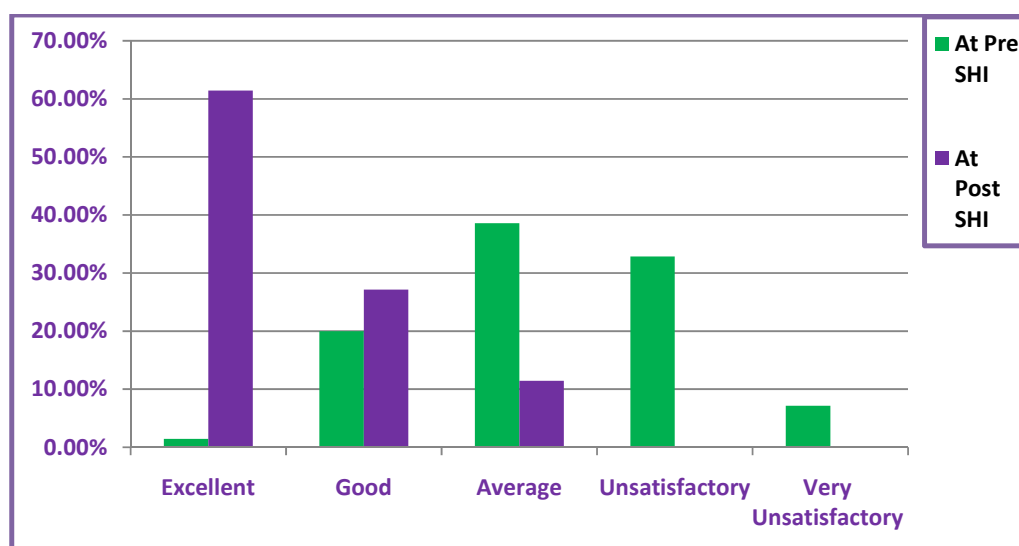


Figure 4.13 Percentage of students at Pre SHI and Post SHI

It is revealed from table 4.5 that,

- The percentage of student lies in various categories of study habits are different, at Pre SHI and Post SHI.
- At Pre stage few (1.43 %) students had excellent study habits but at Post stage it reached to 61.43 %
- At the Pre stage 20 % of students were in good category of study habits at Pre stage and at Post stage 27.14 % of students were found in the category of good study habits.
- At Pre stage, 38.57 % of students had average study habits and at Post stage level only 11.43 % had average study habits.
- At Pre stage 32.86% and 7.14 % of students belonged to the categories of ‘Unsatisfactory’ and ‘Very unsatisfactory’ respectively where - as after implementation of the programme no student belonged to these categories.

Therefore after assessing the study habits of the students at both stages, it can be stated that, most of the students had excellent study habits at Post stage, so the study habits programme was effective in improving the study habits of the students.

4.5.4 TESTING OF HYPOTHESIS 2

Research Hypothesis 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.

For statistical testing the related null hypothesis was framed as follows-

Null hypothesis 2

There will be no 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.

Table 4.6 Summary of ‘t’ testing to find out difference between the mean scores of Pre SHI and Post SHI

Test	Pre SHI	Post SHI
N	70	70
M	55.56	75.16
σ	9.23	8.25
r	0.1957	
Degrees of Freedom	N-1 = 70 – 1= 69	
SEDM	1.3275	
DM	19.60	
t = DM / SEDM	14.76	One-tailed test Table Value at 0.01 level = 2.390

As per table 4.6, the obtained ‘t’ value is 14.76 The table value of ‘t’ at degrees of freedom 69, at 0.01 level is 2.390. As the obtained value exceeds the table value, the null hypothesis is rejected.

Therefore there was a significant increase in the mean scores of study habits of students of std. 9 after implementation of the study habits programme.

4.5.5 TESTING OF HYPOTHESIS 3

Objective 4 was

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

To study the effectiveness of the study habits programme in terms of Science achievement, analysis was done as follows-

Research Hypothesis 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 study habits programme.

For statistical testing the related null hypothesis was framed as follows-

Null hypothesis 3

There will be no significant increase at 0.01 level in the mean scores of Science achievement of std. 9 students after implementation of study habits programme.

Table 4.7 Summary of ‘t’ testing to find out difference between the mean scores of Pre AT and Post AT

Test	Pre AT	Post AT
N	70	70
M	13.60	31.18
σ	6.51	8.27
r	0.50	
Degrees of Freedom	N-1 = 70 – 1 = 69	
SEDM	1.2579	
DM	17.5857	
t = DM / SEDM	13.98	One-tailed test Table Value at 0.01 level = 2.390

As mentioned in the table 4.7, the obtained table value of ‘t’ at 69 degrees of freedom is 13.98. The table value of ‘t’ at 0.01 level is 2.390. As, the obtained ‘t’ value exceeds the table value, the null hypothesis is rejected.

Therefore there was a significant increase in the mean scores of Science achievement of std. 9 students after implementation of study habits programme.

4.5.6- a) TESTING OF HYPOTHESIS 4

Objective 4 was

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

To study the effectiveness of the Study habits programme in terms of Gender, analysis was done as follows-

Hypothesis 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.

The percentage of boys at Pre stage and Post stage of the programme having different study habits was obtained as per the given categories in the manual by Dr. M.N. Palsane are as follows-

Table 4.8 Percentage of boys at Pre SHI and Post SHI

Categories of study habits	Percentage of boys at Pre SHI (%)	Percentage of boys at Post SHI (%)
Excellent	0	53.33
Good	13.34	31.12
Average	37.76	15.55
Unsatisfactory	37.78	0
Very unsatisfactory	11.12	0
Total	100 %	100 %



Figure 4.14 Percentage of boys at Pre SHI and Post SHI

It is revealed from Table 4.8, that

- Most of the boys (53.33%) had ‘excellent’ study habits at post stage.
- Percentage of boys in ‘good’ category was increased up to 31.12% from 13.34% at post stage.
- At the same time, the percentage of boys in ‘average’ category reduced to 15.55% from 37.76 % which means very few boys had ‘average’ study habits at post stage
- None of the boys belonged to ‘unsatisfactory’ and ‘very unsatisfactory’ category at post stage.

Therefore it was observed that there was improvement in study habits of boys after implementation of study habits programme. Most of boys had ‘good’ and ‘excellent’ study habits.

4.5.6 –b) TESTING OF HYPOTHESIS 4

Research Hypothesis – 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.

For statistical testing, the related null hypothesis was framed as –

Null Hypothesis – 4

There will be no 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.

Table 4.9 Summary of ‘t’ testing to find out difference between the mean scores of Pre SHI and Post SHI of boys

Test	Pre SHI of boys	Post SHI of boys
N	45	45
M	53.2	73.6
σ	9.22	8.79
r	0.0624	
Degrees of Freedom	44	
SEDM	1.84	
DM	20.4	
$t = DM / SEDM$	11.0941	One-tailed test Table value at 0.01 = 2.423

As per the table 4.9, obtained ‘t’ value is 11.0941 which is greater than the table value 2.423 at 0.01 level. As the obtained value exceeds the table value, the null hypothesis is rejected.

Therefore there is significant increase in the mean scores of study habits of boys of std. 9 after implementation of the study habits programme.

4.5.7– a) TESTING OF HYPOTHESIS 5

Research hypothesis 5 - There will be a significant increase in the mean scores of study habits of girls of std. 9 after implementation of the study habits programme.

The percentage of girls at Pre stage and Post stage of the programme having different study habits was obtained as per the given categories in the manual by Dr. M.N. Palsane as follows.

Table 4.10 Percentage of girls at Pre SHI and Post SHI

Categories of Study habits	Percentage of girls at Pre SHI (%)	Percentage of girls at Post SHI (%)
Excellent	4	76
Good	32	20
Average	40	4
Unsatisfactory	24	0
Very unsatisfactory	0	0
Total	100 %	100 %

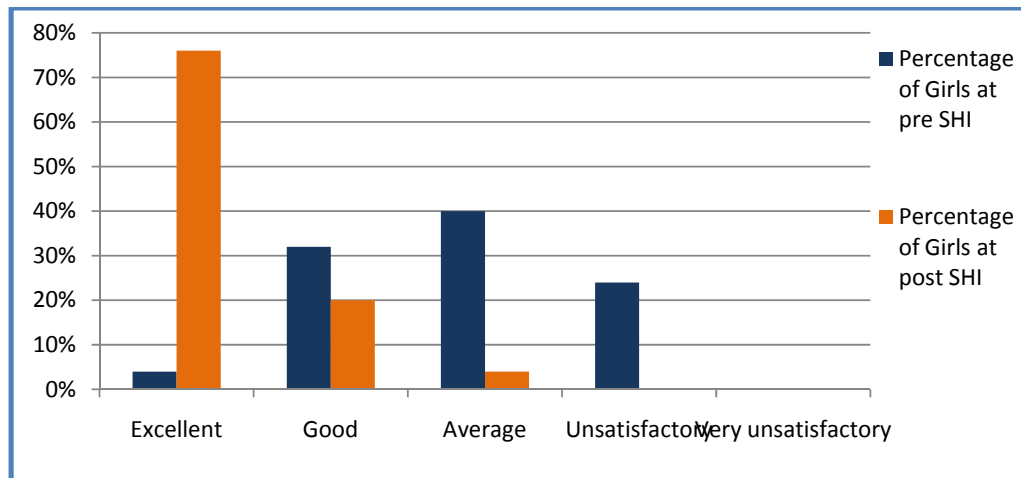


Figure 4.15 Percentage of girls at Pre SHI and Post SHI

Table 4.10 reveals that,

- Percentage of girls in ‘excellent’ category increased from 4% to 76% and it was decreased in ‘good’ and ‘average’ category.
- No girl was present in ‘unsatisfactory’ and ‘very unsatisfactory’ category at post stage.

Therefore, there was improvement in the study habits of girls after implementation of study habits programme.

4.5.7- b) TESTING OF HYPOTHESIS 5

Research Hypothesis 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.

For statistical testing, the related null hypothesis was framed as –

Null Hypothesis 5

There will be no 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.

Table 4.11 Summary of ‘t’ testing to find out difference between the mean scores of Pre SHI and Post SHI of girls

Test	Pre SHI of girls	Post SHI of girls
N	25	25
M	59.8	77.96
σ	7.73	6.42
r	0.288	
Degrees of Freedom	24	
SEDM	1.70	
DM	18.16	
$t = DM / SEDM$	10.67	One-tailed test Table value at 0.01 level = 2.492

As per the table 4.11, obtained ‘t’ value is 10.67 and the table value at 24 degrees of freedom at 0.01 level is 2.492. As obtained value exceeds the table value, the null hypothesis is rejected.

Therefore there was significant increase in the mean scores of study habits of girls of std. 9 after implementation of the study habits programme.

4.5.8 TESTING OF HYPOTHESIS –6

Research Hypothesis - 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.

For statistical testing, the related null hypothesis was framed as –

Null Hypothesis - 6

There will be no 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.

Table 4.12 Summary of ‘t’ testing to find out difference between the mean gain scores of SHI of girls and boys.

Test	Pre SHI of girls	Post SHI of boys
N	25	45
Mean gain score	18.16	20.4
σ	8.50	12.34
Degrees of Freedom	68	
SEDM	2.50	
DM	2.24	
$t = DM / SEDM$	0.894	Two-tailed test Table value at 0.01 level = 2.660 Table value at 0.05 level = 2.000

As per the table 4.12 obtained ‘t’ value is 0.894 and the table value at 68 degrees of freedom at 0.01 level is 2.660 and at 0.05 level is 2.000. As obtained ‘t’ value does not exceeds the table value at both the level, the null hypothesis is accepted.

Therefore there was no significant difference in the mean gain scores of study habits boys and girls of std. 9 due to the implementation of study habits programme.

4.5.9 TESTING OF HYPOTHESIS –7

Research Hypothesis – 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.

For statistical testing, the related null hypothesis was framed as –

Null Hypothesis – 7

There will be no 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.

Table 4.13 Summary of ‘t’ testing to find out difference between the mean scores of Pre AT and Post AT of boys.

Test	Pre AT of Boys	Post AT of Boys
N	45	45
σ	7.10	6.97
M	12.57	29.37
r	0.4554	
Degrees of Freedom	44	
SEDM	1.0947 = 1.095	
DM	16.8	
$t = DM / SEDM$	15.345	One-tailed test Table value at 0.01 level = 2.423

As per the table 4.13 obtained ‘t’ value is 15.345 and the table value at 44 degrees of freedom at 0.01 level is 2.423. As obtained ‘t’ value exceeds the table value, the null hypothesis is rejected.

Therefore there was significant increase in the mean scores of Science achievement of boys of std. 9 after implementation of the study habits programme.

4.5.10 TESTING OF HYPOTHESIS – 8

Research Hypothesis - 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.

For statistical testing, the related null hypothesis was framed as –

Null Hypothesis - 8

There will be no 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.

Table – 4.14 Summary of ‘t’ testing to find out difference between the mean scores of Pre AT and Post AT of girls.

Test	Pre AT of Girls	Post AT of Girls
N	25	25
M	15.44	34.44
σ	4.8911	9.5047
r	0.5934	
Degrees of Freedom	24	
SEDM	1.5373	
DM	19	
‘t’ value	12.3592	One-tailed test Table value at 0.01 level = 2.492

As per the table 4.14, obtained ‘t’ value is 12.3592 and the table value at 24 degrees of freedom at 0.01 level is 2.492. As obtained ‘t’ value exceeds the table value, the null hypothesis is rejected.

Therefore there was significant increase in the mean scores of Science achievement of the girls of Std. 9 after implementation of the study habits programme.

4.5.11 TESTING OF HYPOTHESIS –9

Research Hypothesis - 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.

For statistical testing, the related null hypothesis was framed as –

Null Hypothesis - 9

There will be no significant difference at 0.01 level in the mean gain scores of the Science achievement of boys and girls of Std. 9 due to the implementation of study habits programme.

Table 4.15 Summary of ‘t’ testing to find out difference between the mean gain scores of AT of girls and boys.

Test	AT of Girls	AT of Boys
N	25	45
Mean gain score	19	16.8
σ	7.686	16.8
Degrees of Freedom	68	
SEDM	1.8873	
DM	2.2	
‘t’ value	1.165	Two-tailed test Table value at 0.01 level = 2.660 Table value at 0.05 level = 2.000

As per the table 4.15, obtained ‘t’ value is 1.165 and the table value at 68 degrees of freedom at 0.01 level is 2.660 and at 0.05 level is 2.000. As obtained ‘t’ value does not exceed the table value at both the levels, null hypothesis is accepted.

Therefore there was no significant difference in the mean gain scores of the Science achievement of boys and girls of std. 9 due to the implementation of study habits programme.

4.5.12 TESTING OF HYPOTHESIS 10

Research Hypothesis 10

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

For statistical testing, the related null hypothesis was framed as

Null Hypothesis 10

There will be no significant difference at 0.01 level between study habits of boys and girls of Std. 9 after implementation of the study habits programme.

Table 4.16 Summary of 't' testing to find out difference between the mean scores of study habits of boys and girls at Post stage

Test	Post SHI of boys	Post SHI of girls
N	45	25
M	73.6	77.96
σ	8.786	6.419
Degrees of Freedom	68	
SEDM	1.8340	
DM	4.36	
't' value	2.377	Two-tailed test Table value at 0.01 level = 2.660 Table value at 0.05 level = 2.000

As per table 4.16 the obtained 't' value is 2.377. The table value of 't' for degrees of freedom 68 at 0.01 level is 2.660 and at 0.05 level is 2.000.

As obtained 't' value exceeds the table value at 0.05 level the null hypothesis is rejected and related research hypothesis is accepted. But at 0.01 level the obtained value does not exceed the table value, so null hypothesis is accepted at 0.01 level.

Therefore there is no significant difference at 0.01 level between study habits of boys and girls after implementation of study habits programme.

And there is significant difference at 0.05. level between study habits of boys and girls after implementation of the study habits programme.

4.6 SUMMARY OF PRE AND POST SHI DATA OF THE STUDENTS

a) The following table shows detailed information about data of Pre SHI of student

Table 4.17 Summary of study habits of students at Pre SHI

Categories of study habits	Gender	Number	Percentage	Total number of students	Total percentage of students
Excellent	Girls	1	1.43	1	1.43
	Boys	0	0		
Good	Girls	8	11.43	14	20
	Boys	6	8.71		
Average	Girls	10	14.28	27	38.57
	Boys	17	24.28		
Unsatisfactory	Girls	6	8.57	23	32.85
	Boys	17	24.28		
Very unsatisfactory	Girls	0	0	5	7.14
	Boys	5	7.14		
			Total	70	100

- b) The following table shows detailed information about data of Post SHI of student

Table 4.18 Summary of study habits of students at Post SHI

Categories of study habits	Gender	Number	Percentage	Total number of students	Total percentage of students
Excellent	Girls	19	27.14	43	61.42
	Boys	24	34.28		
Good	Girls	5	7.14	19	27.14
	Boys	14	20.00		
Average	Girls	1	1.43	8	11.43
	Boys	7	10.00		
Unsatisfactory	Girls	0	0	0	0
	Boys	0	0		
Very unsatisfactory	Girls	0	0	0	0
	Boys	0	0		
			Total	70	100

4.7 SUMMARY OF HYPOTHESES TESTING

Table 4.19 Summary of Hypotheses testing

Sr. No.	Null Hypotheses	Acceptance /Rejection of Null Hypothesis and its significance	Interpretation
1.	There will be no 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	Significant at 0.01 level Rejection of Null hypothesis	There was difference 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 no significant increase at 0.01 level in the mean scores of study habits of the students of std. 9 after implementation of the study habits programme	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of study habits of the students of std. 9 after implementation of the study habits programme.
3.	There will be no significant increase at 0.01 level in the mean scores of Science achievement of std. 9 students after implementation of study habits programme	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of Science achievement of std. 9 students after implementation of study habits programme
4.	There will be no significant increase at 0.01 level in the mean scores of study habits boys of std. 9 after implementation of the study habits programme	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of study habits of boys of std. 9 after implementation of the study habits programme.
5.	There will be no 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.	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of girls of std. 9 after implementation of the Study habits programme.

Sr. No.	Null Hypotheses	Acceptance /Rejection of Null Hypothesis and its significance	Interpretation
6.	There will be no 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	Not significant at 0.01 and 0.05 level. Null hypothesis is accepted	There was no difference 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 no 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	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of Science achievement of boys of std. 9 after implementation of the study habits programme.
8.	There will be no significant increase at 0.01 level in the mean scores of Science achievement of girls std. 9 after implementation of the study habits programme	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of Science achievement of girls std. 9 after implementation of the study habits programme.
9.	There will be no 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	Not Significant at 0.01 and 0.05 level. Null hypothesis is accepted	There was no difference 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 no significant difference at 0.01 level between mean scores of study habits of boys and girls of std. 9 after implementation of the study habits programme	Not Significant at 0.01 level. Null hypothesis is accepted at 0.01 level. Significant at 0.05 level, so null hypothesis is rejected at 0.05 level.	There was no difference at 0.01 level in the mean scores of study habits of boys and girls of std. 9 after implementation of the study habits programme. There was difference at 0.05 level in the mean scores of the study habits of boys and girls of std. 9 after implementation of the study habits programme.

4.8 QUALITATIVE ANALYSIS OF THE FEEDBACK FORMS

4.8.1 Findings from the qualitative analysis of the feedback forms filled by the students -

1. Students were motivated to study.
2. Students learnt various techniques to study.
3. Students received proper direction to study.
4. Students started studying in a disciplined manner regularly.
5. Students used various Study habits techniques taught by the researcher like –
 - Preparation of charts
 - Preparation of mnemonic devices
 - Preparation of time table and To-Do List
 - Use of reading skills
 - Preparation of notes
 - Correlating the topics
 - Meditation
 - Time Management

4.8.2 Findings from the qualitative analysis of the feedback forms filled by the parents -

1. Parents observed positive change in the study habits of the students.
2. Parents agreed that the programme helped the students to increase their Science achievement in following way –
 - Students started studying regularly.
 - Students began to study with concentration.
 - Students started using various techniques to study.
 - Students observed to be seated at one place during study time.

3. Parents also suggested that such kind of programme should be arranged in the schools to help the students.
4. Parents opined that the programme will help the students in their future.

4.9 OBSERVATIONS

1. Students showed enthusiasm during all sessions of the programme.
2. Students were eager to learn new study habit techniques.
3. They were eager to listen and clarify their doubts.
4. Students gave very good response and feedback for the guest lecture conducted by Dr. Shobha Joshi on 'Motivation for study habits'.
5. Students showed interest in preparation of mnemonic devices.
6. Students shared the mnemonics and concept maps prepared by them with their friends.
7. Students prepared very good charts.
8. Students came up with new ideas for pattern note making.
9. It was easy for the students to understand and remember the various concepts due to note making techniques.
10. Students realized the importance of study habit techniques in learning Science.
11. Teacher student interaction in the classroom was improved.
12. If students received the proper guidance in the class they can improve in their studies.
13. The study habit techniques are student friendly because students themselves can prepare simple concept maps, mnemonic devices, notes and charts on their own.

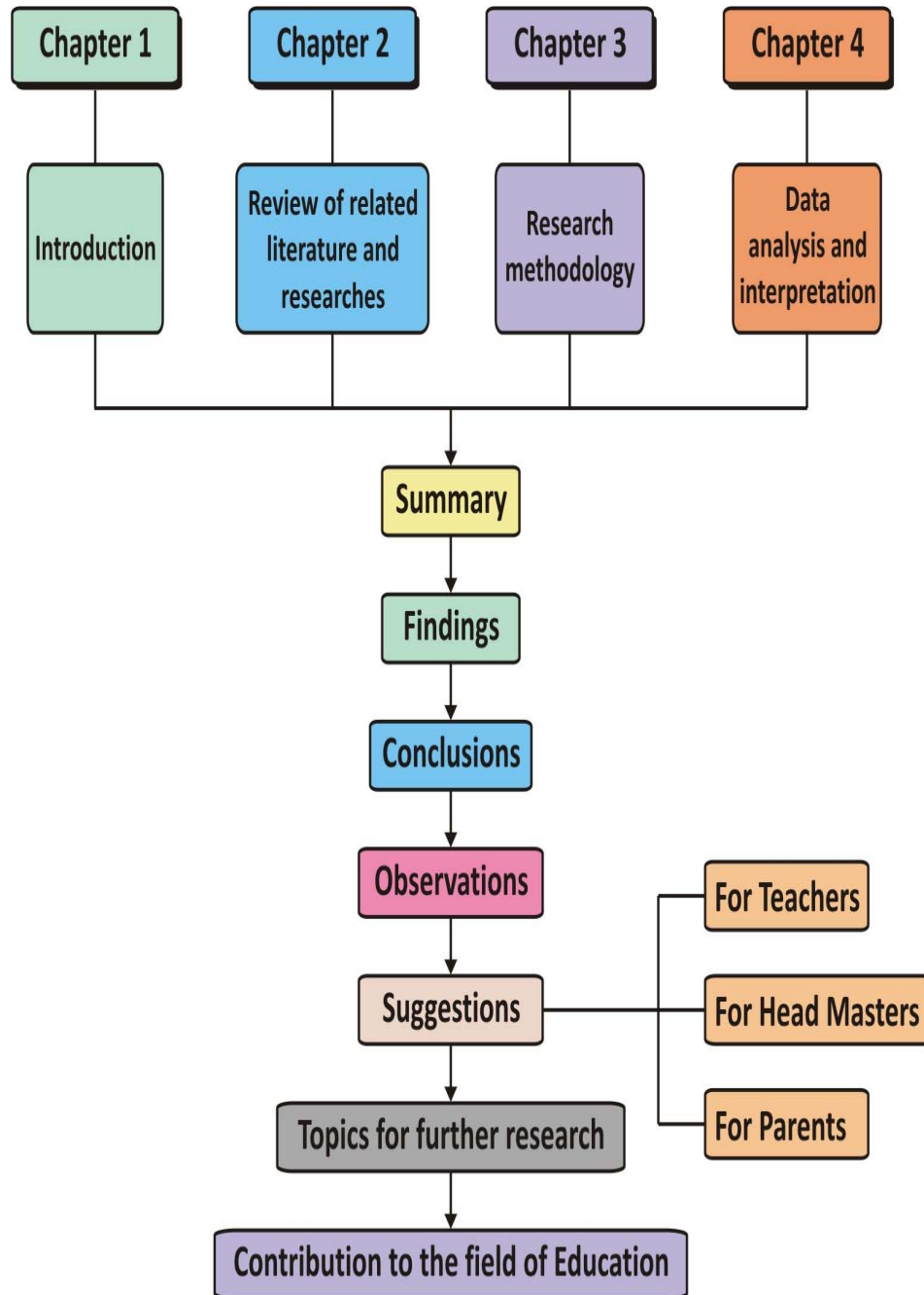
To Conclude:

Data analysis follows by findings, conclusions and suggestions. The findings, conclusions and suggestions are presented in the next chapter.

CHAPTER FIVE

SUMMARY, FINDINGS AND CONCLUSIONS

At a Glance



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CHAPTER FIVE

SUMMARY, FINDINGS AND CONCLUSIONS

5.0 INTRODUCTION

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)

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.

5.1 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?

5.2 MEANING AND IMPORTANCE OF STUDY HABITS

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

Study habit is defined as “The complex 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)

“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)

Study habit is one such important strategy that 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.

Learning occupies a very important place in our life. Teacher can create the situations that help the student to learn quickly and to retain it. Most of the things which we do or 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 student 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 the meaningful learning so that they are 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 behaviour.” (Ogbodo, 2010, p 229)

A student must know learning method and study habits, which helps him to achieve the goals of education. Learning through good study habits is the key process in human behavior. Parents and teachers always show concerns for child learning, 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 have proper attitude towards study so they hardly care for developing good study habits. Many students learned things for longer time, hours together, continuously without understanding. During examination if they failed to remember a word in the beginning, they would forget everything. Therefore students should develop proper study habit, 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 practices points of view. Theoretically, efficient learning depends upon the development of efficient study habits and skills.” (Nadeem, Puja, Bhat, 2014, p91)

It is 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 habit 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 proverb ‘Practice makes man perfect’ but we can say that ‘Perfect practice makes man perfect’. For students to be achievers the way of ‘perfect practice’ should be shown to make them ‘perfect in the studies’.

5.3 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.

5.4 STATEMENT OF THE PROBLEM

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

5.5 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.

5.6 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.

Habits – 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 subjects 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.

5.7 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.

5.8 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)

5.9 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.

5.10 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 and Physical environment of the school.

5.11 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.

5.12 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.

5.13 REVIEW OF RELATED RSEARCHES

In the present research researcher had taken comprehensive review of related literature and researches. During the process researcher could find 33 related researches out of which 27 studies were from India and 6 studies were from out of India. Researcher could find only 4 experimental studies done in India in study habits area. The closely related researches were as follows.

Ghalsasi, P.G. (1988)

Rathod, Sarika (2009)

Bandavane, Sharda (2012)

Ghalsasi done an experimental study in the field of study habits/skills of students in secondary school. The major findings of the study were -

1. The majority of the students had no clear idea about the purpose of studying and the objectives of schooling
2. Not more than 50% of the students got guidance from parents. In the above study,

Bandavane and Rathod had developed a study habits programme and studied its effectiveness on the academic achievement. The present research is also similar to it but in present research, the programme implemented was different and was conducted on IX standard students. In addition to the techniques used by Bandavane

and Rathod many other techniques were included in the present research. Both of them found a positive effect of study habit techniques on the academic achievement.

The review also reveals that though many of surveys are done, there was a big gap of experimental studies in study habit area i.e. After Ghalsasi (1988) the experimental study was made by Rathod in 2009.

Therefore the researcher felt the need to do research by experimental method considering various aspects and suggestions given through reviewed surveys, correlational and experimental studies.

5.14 RESEARCH METHOD

The researcher chose **Experimental method** as in the present research, researcher wanted to find out the effect of study habits programme on the Science achievement of the students.

5.15 RESEARCH DESIGN

Single group pretest-posttest design.

X₁ O X₂

5.16 POPULATION

The targeted population of the present study was all secondary level students of std. 9 of Pune city from Semi-English Medium schools.

5.17 SAMPLE

The researcher selected students of std. 9 from Semi-English Medium schools. A sample of 79 students was selected.

5.18 METHOD OF SAMPLING

Purposive and Incidental sampling

5.19 TOOLS

5.19.1 Tools of data collection

- 1) Study habits inventory by Dr. N.M. Palsane – To assess the existing study habits of the students.
- 2) Achievement Test – To find out achievement of the students in science.

5.19.2 Statistical tools

- 1) t-test.

5.20 PROCEDURE OF THE STUDY HABITS PROGRAMME

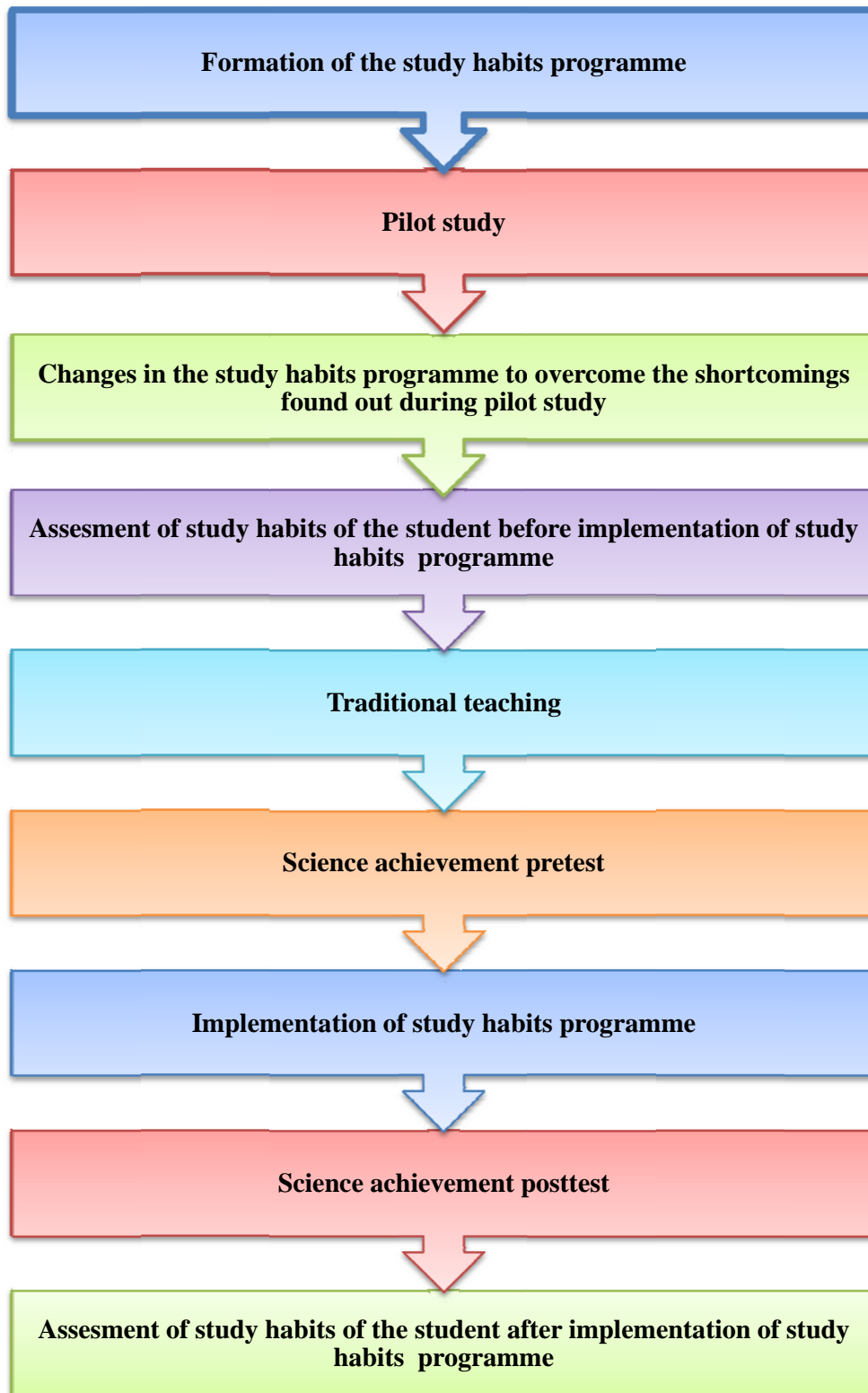


Figure 5.1 Procedure of the study habits programme

5.21 PLANNING OF THE STUDY HABITS PROGRAMME

The study habits programme was based on the following theories, laws, or techniques -

- Theories of learning (Mangal, 2010, p181)
- Theories of Motivation (Mangal, 2010, p138)
- Laws of organization explained by gestalt psychologist (Mangal, 2010, p201)
- Memory and training in memory (Mangal, 2010, p257-267)

After taking deep review of related literature, researcher followed following steps for formation of study habits programme.

1. Orientation lecture to motivate students to study.
2. To give general introduction about the programme.
3. Preparation of the manual containing study habits techniques.
4. Explanation of manual and various techniques step by step to the students.
5. Implementation of the programme in teaching using various techniques mentioned in the manual.

5.22 IMPLEMENTATION OF STUDY HABITS PROGRAMME

In this present research study habits programme included following things.

- I. Guest lecture on 'Motivation for Study Habits' was delivered.
- II. General instructions regarding the study habits programme were given to the students.
- III. The charts were prepared and displayed in the classrooms based on the manual prepared by the researcher.

Chart 1 - Keep this in your mind

Chart 2 - Few things to do

Chart 3 - Manage your time

Chart 4 - Read skill fully

Chart 5 - Be particular about note making

- IV.** Explanation of each chart and technique included in the manual by giving examples from Science.

5.23 ANALYSIS OF THE DATA

1. The collected data regarding the study habits inventory were assessed by the researcher as per the instructions given in the manual by Dr. M.N. Palsane
2. The effectiveness of the study habits programme was studied by applying 't-test'. The 't-test' was used to study the significant difference between pretest and posttest scores of Science achievement test.

5.24 FINDINGS

a) Findings for Objective 1 - To assess the existing study habits of Semi English Medium students

1. Before implementation of the study habits programme, very few (1.43%) students had excellent study habits.
2. Only 20% of students had good study habits.
3. Most of the students (38.57 %) had average study habits.
4. The percentage of students, who had unsatisfactory study habits was also more (32.86%) .
5. Few students (7.14%) had very unsatisfactory study habits.

b) Findings for Objective 2 - To find out the difference between study habits of boys and girls.

1. None of the girls (0 %) had very unsatisfactory study habits but very few boys (11.11%) had it.
2. The percentage of girls (24%) is less than that of boys (37.78%) in unsatisfactory category.
3. Most of the girls (40%) and boys (37.78) had average study habits.
4. Few boys (13.33%) and more girls (32%) had good study habits.
5. Very few girls (4%) had excellent study habits but none of the boys had it.

c) Findings for Objective 4 - To study the effectiveness of the study habit programme in terms of study habits, Science achievement and gender of the students.

• Effectiveness of study habits programme in terms of study habits -

1. The percentage of students lie in various categories of study habits was different at Pre SHI and Post SHI.
2. At Pre stage, few (1.43 %) students had excellent study habits but at Post stage it reached to 61.43 %
3. 20 % of students were in 'good' category of study habits at Pre stage and at Post stage 27.14 % of students were found in the category of 'good' study habits.
4. At Pre stage, 38.57 % of students had 'average' study habits and at Post stage level only 11.43 % had 'average' study habits.
5. At Pre stage 32.86% and 7.14 % of students belonged to the categories of 'Unsatisfactory' and 'Very unsatisfactory' respectively where - as after implementation of the study habits programme no student belonged to these categories.

- **Effectiveness of study habits programme in terms of Science achievement -**

6. There is a significant increase at 0.0.1 level in the mean scores of the Science achievement of std. 9 students after implementation of study habits programme.

- **Effectiveness of study habits programme in terms of genders –**

7. Most of the boys (53.33%) had excellent study habits at Post stage

8. Percentage of boys in ‘good’ category was increased up to 31.11% at Post stage from 13.34% .

9. At the same time, the percentage of boys in average category reduced to 15.55% from 37.76 % which means very few boys had average study habits at Post stage .

10. None of the boys belonged to ‘unsatisfactory’ and ‘very unsatisfactory’ category at Post stage.

11. Percentage of girls in excellent category increased from 4% to 76% and it was decreased in ‘good’ and ‘average’ category.

12. No girl was present in ‘unsatisfactory’ and ‘very unsatisfactory’ category at Post stage.

d) Findings as per the hypotheses testing

Table 5.1 Summary of hypotheses testing

Sr. No.	Null Hypotheses	Acceptance /Rejection of Null Hypothesis and its significance	Interpretation
1.	There will be no 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	Significant at 0.01 level Rejection of Null hypothesis	There was difference 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 no significant increase at 0.01 level in the mean scores of study habits of the students of std. 9 after implementation of the study habits programme	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of study habits of the students of std. 9 after implementation of the study habits programme.
3.	There will be no significant increase at 0.01 level in the mean scores of Science achievement of std. 9 students after implementation of study habits programme	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of Science achievement of std. 9 students after implementation of study habits programme
4.	There will be no significant increase at 0.01 level in the mean scores of study habits boys of std. 9 after implementation of the study habits programme	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of study habits of boys of std. 9 after implementation of the study habits programme.
5.	There will be no 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.	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of girls of std. 9 after implementation of the Study habits programme.
6.	There will be no significant	Not significant at	There was no difference

Sr. No.	Null Hypotheses	Acceptance /Rejection of Null Hypothesis and its significance	Interpretation
	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	0.01 and 0.05 level. Null hypothesis is accepted	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 no 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	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of Science achievement of boys of std. 9 after implementation of the study habits programme.
8.	There will be no significant increase at 0.01 level in the mean scores of Science achievement of girls std. 9 after implementation of the study habits programme	Significant at 0.01 level Rejection of Null hypothesis	There was increase in the mean scores of Science achievement of girls std. 9 after implementation of the study habits programme.
9.	There will be no 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	Not Significant at 0.01 and 0.05 level. Null hypothesis is accepted	There was no difference 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 no significant difference at 0.01 level between mean scores of study habits of boys and girls of std. 9 after implementation of the study habits programme	Not Significant at 0.01 level. Null hypothesis is accepted at 0.01 level. Significant at 0.05 level, so null hypothesis is rejected at 0.05 level.	There was no difference at 0.01 level in the mean scores of study habits of boys and girls of std. 9 after implementation of the study habits programme. There was difference at 0.05 level in the mean scores of the study habits of boys and girls of std. 9 after implementation of the study habits programme.

e) Findings from the qualitative analysis of the feedback forms filled by the students –

1. Students were motivated to study.
2. Students learnt various techniques to study.
3. Students received proper direction to study.
4. Students started studying in a disciplined manner regularly.
5. Students used various Study habits techniques taught by the researcher like –
 - Preparation of charts
 - Preparation of mnemonic devices
 - Preparation of time table and To-Do List
 - Use of reading skills
 - Preparation of notes
 - Correlating the topics
 - Meditation
 - Time Management

f) Findings from the qualitative analysis of the feedback forms filled by the parents -

1. Parents observed positive change in the study habits of the students.
2. Parents agreed that the programme helped the students to increase their Science achievement in following way –
 - Students started studying regularly.
 - Students began to study with concentration.
 - Students started using various techniques to study.
 - Students observed to be seated at one place during study time.

3. Parents also suggested that such kind of programme should be arranged in the schools to help the students.
4. Parents opined that the programme will help the students in their future.

5.25 CONCLUSIONS

a) The following conclusions were drawn from the data collected through study habits inventory.

1. Before implementation of the study habits programme, study habits of the students from std. 9 A from H.B. Girme High School were in average category.
2. Girls had better habits than boys before implementation of the study habits programme
3. There was a significant difference between study habits of boys and girls before implementation of the study habits programme.
4. Most of the students had excellent study habits after implementation of the study habits programme.

b) The following conclusions were drawn from hypotheses testing of the collected data.

5. There was significant increase at 0.01 level in the mean scores of study habits of std. 9 students after implementation of the study habits programme.
6. There was a significant increase at 0.01 level in the mean scores of the Science achievement of std. 9 students after implementation of study habits programme.
7. There was improvement in study habits of boys and girls after implementation of study habits programme
8. There was 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.
9. There was 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.

10. There was no significant difference at 0.01 level in the mean gain scores of study habits boys and girls of std. 9 due to the implementation of study habits programme.
11. There was significant increase at 0.01 level in the mean scores of the Science achievement of boys of std. 9 after implementation of the study habits programme.
12. There was significant increase at 0.01 level in the mean scores of the Science achievement of girls of std. 9 after implementation of the study habits programme.
13. There was no 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.
14. There was no significant difference at 0.01 level between study habits of boys and girls of std. 9 after implementation of the study habits programme.
15. There was significant difference at 0.05 level in the mean scores of the study habits of boys and girls of std. 9 after implementation of the study habits programme.

c) The following conclusion was drawn from qualitative analysis of the feedback form filled by parents and students.

16. Students started studying regularly by following various study habits techniques taught by the researcher.

d) Conclusions about the effectiveness of the study habits programme

17. Science achievement of the students was increased and study habits of the students were improved significantly therefore the study habits programme was proved to be effective for std. 9 students.

18. The conclusion can be generalized to other students from various classes of the society depending on the facilities or exposure available to them, but when the study habits programme will be introduced to them as a whole, effectiveness of it may remain the same.

5.26 OBSERVATIONS

1. Students showed enthusiasm during all sessions of the programme.
2. Students were eager to learn new study habit techniques.
3. They were eager to listen and clarify their doubts.
4. Students gave very good response and feedback for the guest lecture conducted by Dr. Shobha Joshi on 'Motivation for study habits'.
5. Students showed interest in preparation of mnemonic devices.
6. Students shared the mnemonics and concept maps prepared by them with their friends.
7. Students prepared very good charts.
8. Students came up with new ideas for pattern note making.
9. It was easy for the students to understand and remember the various concepts due to note making techniques.
10. Students realized the importance of study habit techniques in learning Science.
11. Teacher student interaction in the classroom was improved.
12. If students received the proper guidance in the class they can improve in their studies.
13. The study habit techniques are student friendly because students themselves can prepare simple concept maps, mnemonic devices, notes and charts on their own.

5.27 SUGGESTIONS

A) FOR THE TEACHERS

- Primary, Secondary as well as higher secondary teachers can practice regularly the study habit techniques through classroom for betterment of teaching learning process.
- Primary, Secondary as well as higher secondary teachers can apply the study habit techniques for remedial teaching
- Primary school teachers can inculcate proper study habits among the students so that students find easy to learn on higher level.
- The teachers at all level can use study habit techniques for the preparation and planning of their lessons.
- Teachers can motivate the students to follow the study habit techniques in their study.
- Classroom interactions can be improved during teaching learning process by using study habit techniques.

B) FOR THE HEAD MASTERS

- Head masters can motivate the different subject teachers to practice novel ideas related to study habits in the classroom situation.
- Head masters can guide the teachers and students about the study habit techniques and its effect on achievement.
- To develop good study habits various programmes can be arranged in the school.
- Head masters can organize orientation programmes in their schools for parents on study habits in the schools

C) FOR THE PARENTS

- Parents can attend the orientation programme on the study habits.

- Parents can motivate the students to follow study habit techniques in their study.
- Parents can guide the students about study habit techniques and its effect on the achievement.

5.28 TOPICS FOR FURTHER RESEARCH

- Effectiveness of study habits programme on the academic achievement of Geography, History, English (any other subject) for Secondary level students.
- Survey of difficulties faced by students in learning concepts, terms, laws from different subjects and to suggest the remedies through the application of different study habits technique.
- Effectiveness of study habits programme on the academic achievement of the Primary level students
- Effectiveness of study habits programme on the academic achievement of the Higher Secondary level students.
- Survey of study habits of night school / college students.
- Effectiveness of study habits programme on the academic achievement of the night school / college students.
- Survey of study habits of higher economic class students.
- Survey of study habits of gifted students.
- Effectiveness of study habits programme on the academic achievement of gifted students.
- Preparation of study habits programme for special students.
- Effectiveness of study habits programme on the achievement of special students.
- Effectiveness of study habits programme on the academic achievement of the students from rural area.
- Same research can be applied on large scale by considering large geographical area.

5.29 CONTRIBUTION TO THE FIELD OF EDUCATION

The study habit techniques are useful tools in leading students towards meaningful learning. In earlier chapters we have seen the importance of study habit techniques, some of the major contribution to the field of education are as follows-

- The study habits programme from the present research will help students to develop proper study habits.
- Teachers can directly implement the programme in their schools.
- The same programme can be used for other subjects in the schools by teachers.
- The manual from the present research work will work as a guideline for the students, teachers and parents.
- Head masters can orient teachers to run study habits programmes in their schools.
- The study habits programme provide a method of self learning to the students.
- Teachers can do their lesson planning for Science as well as other subjects by using the techniques from study habits programme.
- If the same programme will be implemented in schools it will be a good step towards child centered Education.

5.30 EPILOGUE

The review taken for the research work put forth the importance of study habits for students. In our world of competition, it is the need of time that students should know proper, efficient and systematic way of learning. Study habits lead students towards achievement. Not only this, it develops interest, confidence and ability to work hard for their betterment. All these qualities and more are essential for all round development of the student. Here researcher feels happy and satisfied as this research work contributed for the same.

BIBLIOGRAPHY

- Acharya, Sunita (2012). Study habits and its effect on academic achievement of tribal and non-tribal students at secondary level, *International Multidisciplinary e-Journal/ Sunita Acharya*, 128-145.
- Agarwal, J.C. (1981). *Philosophical and Sociological Bases of Education*, New Delhi, Vikas publishing house, Pvt. Ltd.
- Anwar, Ehtesham (2013). A Correlational Study of Academic Achievement And Study Habits : Issues and Concerns, *Excellence International Journal of Education and Research* (Multi-subject journal).
- Armstrong, W.H. (1956). Study is Hard Work, *Psychological abstracts*, No.30.
- Ayodele, C.S., and Adebija, D.R. (2013). Study Habits as Influence of Academic Performance of University Undergraduates in Nigeria. *Research Journal in Organizational Psychology & Educational Studies*, 2(3) 72-75, Emerging Academy Resources (2013) (ISSN: 2276-8475).
- Best, J.W., and Khan, J. V. (2006). *Research in education* (9th ed.) New Delhi, Prentice Hall.
- Bhalla, Prem (n.d.), *Steps to Success*, New Delhi, Goodwill Publishing House.
- Bhatia, K. and Bhatia, B.D. (2004). *Theory and Principle of Education*, Delhi, Doaba House.
- Bhatia, Kamala and Bhatia, B.D. (2004). *Theory of Principles of Education*, Delhi, Doba House.
- Bhattacharya N. (2012). *Key to Success*, Mumbai, Vile Parle (W), Buzzingstock Publishing House.
- Bray, Margrret R. (1978). A Comparison of Counselor Attention, Counselor Attention Plus Modeling, and Supervised Study Control Treatments in Changing, Study Habits, Attitudes, Behaviors, and Grades, Greensboro.

- Brown, W.F. and Holtzman, W. (1955). A study attitude questionnaire for predicting Academic success, *Journal of Education Psychology*, Vol – 46.
- Chand, Suresh (2013). Study Habits of Secondary School Students in Relation to Type of School and Type of Family, *International Journal of Science & Interdisciplinary Research*, ISSN 2277 3630, HSSIR, Vol.2 (7).
- Chodhury, Biswaroop Roy (2010). *Dynamic Memory Methods*, New Delhi, Fusion Books.
- Chow, Zee Lisu (1980). Effectiveness of a Study Skills Programme in Relation to Study Habits and Attitudes and Academic Achievement for Students in a Secondary School in Hong Kong.
- Dahiya, Neelam (2013). Parental involvement, Residence and Sex as the predictors of study habits of adolescent students, *International journal of Engineering, applied and management sciences paradigms*, ISSN (online) – 2320-6608. Vol-07, issue -01. www.ijeam.com.
- Das, R.C. (2005). *Science Teaching in Schools*, New Delhi, Sterling Publishers Pvt. Ltd.
- Garrette, H.E. (1973). *Statistics in Psychology and Education*, Bombay, Vakils, Feffer and Simon Pvt. Ltd.
- Ghalsasi, P.G. (1988). *A descriptive and experimental study in the field of study habits/skills of students in secondary school*, Pune University.
- Goods and Scates (1979). *Introduction in Research in Education*, New York., Halt Rinehart and Winston.
- Jamuar, K.K. (1961). *Some psychological factors underlying the study habits of college students*, Pune university.
- Kalaskar, Pallavi B. (2004-05). *Study of effect of memory training techniques on the students of 9th class while teaching science*, Pune University.

- Kanta, Nirmal (1972). *A comparative Study of study habits of high school students*, Pune, Indian Institute of Education.
- Kaul, Lokesh (1993). *Methodology of Educational Research*, (2nd revised edition), New Delhi, Vikas Publishing House Pvt. Ltd.
- Kaushar, Mehnaz (2013). Study of Impact of Time Management of Academic Performance of College Students, *IOSR Journal of Business and Management* (IOSR-JBM) e-ISSN:2278-487X, p-ISSN:2319-7668. Volume 9.
- Kim, Chanmin (2007). *Effects of Motivation, Volition and Belief change strategies on attitudes, study habits and achievement in Mathematics Education*, Internet
- Kulshetra, Pradeep Kumar (1992). *The effect of school environment on adjustment study habit and achievement of high school student*, M.B. Buch 5th Survey.
- Malhotra, M.M. (1980). *Effect of systematic approach to instruction in mechanics of structures on achievement, Transfer of learning, motivation, study habits and attitude of poly technique students*, M.B. Buch, 3rd Suvey.
- Mangal, S. K. (2005). *Statistics in Psychology and Education*, New Delhi, (2nd Ed.), Prentice Hall of India Private Limited.
- Mangal, S. K. (2010). *Advanced Educational Psychology*, New Delhi, (2nd ed.), PHI Learning Private Limited.
- Nadeem, N.A., Puja, Javeed Ahamd., Bhat, Shabir Ahmad (2014). Study habits and academic achievements of Kashmiri and Ladakhi adolescent girls : a comparative study, *Turkish online journal of Distance Education* ISSN-1302-6488, Vol-2.
- Nagaraju, M.T.V. (2004), *Study habits of secondary school students*, New Delhi, Discovery publishing House.
- Ngailiankim, Caraline (1988). *An investigation into the attitude and study habits related to achievement in mathematics of class IX students in Shillong*, M.B. Buch 5th Survey.

- Ochanya, Rosemary OGBODO, (nd). *Effective Study Habits in Educational Sector: Counselling Implications*, Zuba, Abuja, Continuous Education FCT College of Education.
- Oriahi, Christiana (2009). Influence of Motivation on Student's Academic Performance, *The Social Sciences* 4 (1) : 30-36-2009 ISSN : 1818-5800, Medwell Journals.
- Osa,-Edoh, G.I. and Alutu, A.N.G. (2012). A Survey of Students Study Habits in Selected Secondary Schools: Implication for Counseling, *Current Research Journal of Social Sciences* 4(3) : 228-234, 2012 ISSN:2041-3246, Maxwell Scientific Organization, 2012.
- Ozsoy, Gokhan., Memis, Aysel., Temur, Turan (2009). Metacognition, Study habits and attitudes, *International Electronic Journal of Elementary Education* Vol. 2 IEJEE-journal ISSN -1307-9298, www.iejee.com.
- Patil, Eknath Bhansingh (1993). *The problems of night school students and their study habits*, Pune, Indian Institute of Education.
- Prasad, Janardhan (2006). *Practical aspects in Teaching of Science*, New Delhi, Kanishka Publishers.
- Rathod, Sarika (2009). *A study of effectiveness of study habit programme on the academic achievement of VIII std. students*, Pune University.
- Roa, D. Bhaskara, Latha, D. Pushpa (2011). *Achievement in Science*, New Delhi, Darya Ganj, Discovery Publishing House.
- Sandhu, Sukhdev Singh (2014). Academic Achievement of Adolescents in Relation to Achievement Motivation and Study Habits, *Sanshodhan kranti*, Vol-11, issue-I, ISSN 2321-0397.
- Sarode, V.B. (1995). *A study of impact of socio-economic status, study habits, and academic motivation on academic achievement of higher secondary student of rural area*, Pune University.

- Saxena, S.K.(1981). *Self concept, study habit and school attitude as correlates of socio economics status and cultural setting in different divisioner and failures of high school students of Kanpur district*, M.B. Buch, 3rd survey.
- Sen, Barat Kalpana (1992). *A investigation into the personality makeup, intelligence and study habit of high and low achievers*, Pune, SNDT Women's University Library.
- Sharma, Bhandula (1999). *Teaching of Sicence*, Ludhiana, Tandon Publications.
- Sharma, R.C. (2005).*Modern Science Teaching*, New Delhi, Dhanpat Rai Publishing Company (P) Ltd.
- Sharma, Sonia (2012). Effect of Concept Mapping Strategy on the Learning outcome in Relation to Intelligence and study habits, *International Multidisciplinary e-Journal*, ISSN 2277-4262.
- Shejwal, B.R. (1980). Ph.D., *Investigation into study habits of college students* M.B. Buch, 3rd Survey.
- Siddiqui, N. N. and Siddiqui, M.N.(2005).*Teaching of Science today and Tomorrow*, (7th Revised Edition), New Delhi, Doaba House.
- Sidhu, Kulbir Singh, (1995). *Methodology of Research in Education*, New Delhi, Sterling Publishers, Pvt. Ltd.
- Singh Suneeta, Muktesh S., Snehlata C. (2010). Study habits in relation to academic performance in high school students, www.indianjournals.com.
- Yadav, V.S., Ansari, M.R., and Savant, P.A. (1999). A Critical Analysis of Study Habits and Academic Achievement of College Students , *Karnataka J. Agril. Sci.* 13(4): (914-918) 2000.

- बंदावणे, शारदा (२०१२). *इयत्ता सातवीच्या विद्यार्थ्यांच्या विज्ञान विषयाच्या काही घटकांसाठी अभ्यास सवयी कार्यक्रमांचे विकसन व त्याच्या परिणामकारतेचा अभ्यास*, पुणे, एस.एन.डी.टी महाविद्यालय
- बोदांडे, ए.एम., कदम, चा.प. (२००४). *शास्त्र अध्यापन पध्दती व आशययुक्त अध्यापन* (नविन सुधारित आवृत्ती) पुणे, नूतन प्रकाशन
- सोनार, विजया (२००९). *माध्यमिक शाळेतील इयत्ता नववीच्या विद्यार्थ्यांच्या अभ्यास सवयी व त्यांचे संपादन यांच्या सहसंबंधाचा अभ्यास*, पुणे, एस.एन.डी.टी महाविद्यालय
- पाटील, मिनाक्षी (२००४). *इयत्ता ९ वी च्या विद्यार्थ्यांच्या अभ्याससवयी व इतिहास विषय यातील संपादन यांच्या सहसंबंधाचा अभ्यास*, पुणे, एस.एन.डी.टी महाविद्यालय
- पाटील, दिपा (२०१३). *इयत्ता १२ वी कलाशाखेतील विद्यार्थ्यांच्या अभ्यास सवयी आणि शालेय संपादन यांतील सहसंबंधाचा अभ्यास, शिक्षण तरंग*
- पाटील, सुहास (२००७). *सदाशिवराव माने विद्यालय अकलूज मधील इयत्ता नववीच्या विद्यार्थ्यांची विज्ञान अभिरूची विज्ञानातील संपादन व अभ्यास सवयी यांमधील परस्पर संबंधाचा अभ्यास*, पुणे विद्यापीठ

Websites :

<http://www.ibe.unesco.org>

<http://www.ncert.nic.in>

[mhrd.gov.in/sites/upload file](http://mhrd.gov.in/sites/upload_file)

Wikipedia

www.quotations page.com/quotes/862.html

www.sil.org/lingualinks/literacy/.../whatarereadingskills.htm

<http://www.edu-nova.com/>

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APPENDIX A

Mark List for Study habits inventory

Sr. No.	Name of the student	Pre SHI	Post SHI
1	Aarondekar Siddhesh Tukarm	48	73
2	Bade Alka Dynanoba	48	69
3	Badgular Vaibhav Vinayak	71	84
4	Badhe Adiya Rajendra	49	81
5	Badhekar Megha Smbhaji	76	85
6	Barkade Udy Sanjay	54	69
7	Bhagale Sachin malappa	50	78
8	Bhagat Rahul Dattatraya	46	63
9	Bhalekar Prachi Ashok	64	81
10	BhalShankar Rohit Anand	59	72
11	Bhattachaud Ruru Chenappa	48	62
12	Bhirud Deepesh Anil	47	84
13	Bhujbal Prajakta Gorakh	64	71
14	Biradar Karuna Dyaneshwar	52	60
15	Chavan Aniket Chandrakant	67	77
16	Chavan Tushar Shyam	50	76
17	Dalvi Neha Deepak	66	83
18	Deshmukh Aadinath Suresh	57	68
19	Devasi Prakash Bhaguram	56	74
20	Gangadhare Rohan Suresh	63	83
21	Hasnale Ashwini Dattatraya	62	75

22	Hole Kunal Somnath	48	77
23	Inamdar Fija Shiraj	64	83
24	Jadhav Ashutosh Hanumant	57	63
25	Jambhulkar Shraddha Sunil	55	74
26	Kadam Mahesh Vijay	35	85
27	Kakade Ajay Ravindra	58	65
28	Kambale Aashlesha Tukaram	61	69
29	Kambale Shubham Vijay	56	75
30	Karne Snehal Dasharath	49	80
31	Kedari Pratik Anil	50	58
32	Khade Shivani Eknath	49	73
33	Kokare Ganesh Avinash	53	85
34	Kumbhaz Tejaswini Kiran	50	85
35	Marne Pooja Sandeep	49	80
36	Momin Akib Sayyad	36	67
37	More Omkar Satish	42	71
38	Naik Sagar Suryakant	53	80
39	Naik Shrihari Laxman	40	88
40	Navale Shivani Balasaheb	70	72
41	Nerlekar Pooja Maruti	55	82
42	Pandagale Mukul Madhav	58	69
43	Patil Omkar Vishwas	73	60
44	Patil Shushan Tulashiram	51	72
45	Patil Yash Bhau	56	70
46	Pawar Jayashree Bhanudas	63	85

47	Pawar Sandesh Santosh	50	87
48	Pawar Tanay Waman	51	54
49	Ranshing Snehal Tanhu	72	79
50	Raut Rohan Shankar	39	67
51	Rokade Krushnaraj Jaysing	59	76
52	Sapkal Rohan Sampat	68	82
53	Sarwade Amol Tatyaba	72	83
54	Sayyad Muskan Tajuddhin	61	83
55	Shaikh Nadeem Gafur	45	79
56	Shewate Rutuja Nitin	64	83
57	Shinde Mayur Dattatrya	56	67
58	Shinde Neha Ganesh	63	75
59	Shinde Santosh Vijay	58	87
60	Shinde Shubham Shambhusinh	44	77
61	Shingate Prasad Dattatraya	61	78
62	Sonar Neeraj Hemant	42	59
63	Taide Rashmi Rajesh	67	82
64	Tamangol Dhanashree Datta	56	75
65	Temgire Rohit Somnath	48	64
66	Tgombare Ganesh Saudagar	64	74
67	Thorat Rahul Anil	45	82
68	Tilekar Pratiksha	55	80
69	Waghmare Shubham Shivaji	61	67
70	Waghmare Shubhangi B.	60	85

APPENDIX B

Mark List for Science Achievement Test

Sr. No.	Name of the student	Pre AT	Post AT
1	Aarondekar Siddhesh Tukarm	26	35
2	Bade Alka Dynanoba	12	25
3	Badgujar Vaibhav Vinayak	3	24
4	Badhe Adiya Rajendra	2	24
5	Badhekar Megha Smbhaji	20	48
6	Barkade Udy Sanjay	26	42
7	Bhagale Sachin malappa	21	20
8	Bhagat Rahul Dattatraya	14	28
9	Bhalekar Prachi Ashok	15	33
10	BhalShankar Rohit Anand	11	28
11	Bhattagaud Ruru Chenappa	9	30
12	Bhirud Deepesh Anil	5	23
13	Bhujbal Prajakta Gorakh	18	33
14	Biradar Karuna Dyaneshwar	9	20
15	Chavan Aniket Chandrakant	5	23
16	Chavan Tushar Shyam	5	29
17	Dalvi Neha Deepak	18	47
18	Deshmukh Aadinath Suresh	12	20
19	Devasi Prakash Bhaguram	12	39
20	Gangadhare Rohan Suresh	11	29
21	Hasnale Ashwini Dattatraya	16	28

22	Hole Kunal Somnath	7	29
23	Inamdar Fija Shiraj	14	33
24	Jadhav Ashutosh Hanumant	19	41
25	Jambhulkar Shraddha Sunil	12	30
26	Kadam Mahesh Vijay	6	30
27	Kakade Ajay Ravindra	14	19
28	Kambale Aashlesha Tukaram	23	41
29	Kambale Shubham Vijay	6	22
30	Karne Snehal Dasharath	15	38
31	Kedari Pratik Anil	5	26
32	Khade Shivani Eknath	8	27
33	Kokare Ganesh Avinash	15	33
34	Kumbhaz Tejaswini Kiran	28	45
35	Marne Pooja Sandeep	14	28
36	Momin Akib Sayyad	14	31
37	More Omkar Satish	18	41
38	Naik Sagar Suryakant	18	39
39	Naik Shrihari Laxman	14	17
40	Navale Shivani Balasaheb	9	25
41	Nerlekar Pooja Maruti	14	36
42	Pandagale Mukul Madhav	7	26
43	Patil Omkar Vishwas	24	41
44	Patil Shushan Tulashiram	10	32
45	Patil Yash Bhau	10	37
46	Pawar Jayashree Bhanudas	22	46

47	Pawar Sandesh Santosh	14	44
48	Pawar Tanay Waman	6	26
49	Ranshing Snehal Tanhu	13	11
50	Raut Rohan Shankar	33	25
51	Rokade Krushnaraj Jaysing	29	43
52	Sapkal Rohan Sampat	14	32
53	Sarwade Amol Tatyaba	12	24
54	Sayyad Muskan Tajuddhin	9	38
55	Shaikh Nadeem Gafur	11	24
56	Shewate Rutuja Nitin	21	48
57	Shinde Mayur Dattatrya	5	21
58	Shinde Neha Ganesh	15	45
59	Shinde Santosh Vijay	9	29
60	Shinde Shubham Shambhusinh	12	28
61	Shingate Prasad Dattatraya	15	28
62	Sonar Neeraj Hemant	3	27
63	Taide Rashmi Rajesh	12	36
64	Tamangol Dhanashree Datta	20	25
65	Temgire Rohit Somnath	13	25
66	Tgombare Ganesh Saudagar	10	33
67	Thorat Rahul Anil	15	29
68	Tilekar Pratiksha	14	36
69	Waghmare Shubham Shivaji	16	26
70	Waghmare Shubhangi B.	15	39

APPENDIX C

Science achievement pretest

Science and Technology

Std. IX

Total Marks : 50

Test

Time : 90 Minutes

Note : Figures to the right indicate marks

Que.1 A) Fill in the blanks with appropriate word. 4

1. The symbol of cadmium is _____.
2. Science of classification and nomenclature of organisms is called _____.
3. BCG vaccine gives immunity against the _____.
4. Chemicals used to protect the crops are known as _____.

Que. 1 B) State whether the following statements are 'True' or 'False'. 4

1. Relative density of a substance = density of the substance / volume of water
2. Arthropods are vertebrate animals.
3. Rabies is a bacterial disease.
4. Anand Milk Union Limited (AMUL) was the driving force behind White Revolution.

Que. 1 C) Match the following. 2

- | A | B |
|-----------------------|---------------|
| 1. Nitric acid | a. MgO |
| 2. Magnesium oxide | b. KCl |
| 3. Sodium sulphate | c. $AlPO_4$ |
| 4. Potassium Chloride | d. Na_2SO_4 |
| | e. HNO_3 |
| | f. $MgCl_2$ |

Que. 2 A) Answer the following questions in one sentence. 4

1. What is Law of constant proportion ?
2. What do you mean by Hierarchy of characteristics ?
3. What are the means of spread of disease ?
4. What is Pisciculture ?

- Que. 2 B) Distinguish between the following .** **4**
1. Pisces and Amphibia
 2. Manures and Fertilizers
- Que. 2 C) Find the molecular masses of the following compounds.** **4**
1. Hydrogen sulphide (H_2S)
 2. Calcium Oxide (CaO)
- (Atomic Masses : $H = 1$, $S = 32$, $Ca = 40$, $O = 16$)
- Que. 3 A) Write short note on the following.** **4**
1. Factors essential for good health
 2. Characteristics of Kingdom 'Monera'
- Que. 3 B) Give scientific reasons.** **14**
1. ORS should be immediately given to infants when they are sick with diarrhoea.
 2. A piece of iron sinks in water but floats on mercury.
 3. Frogs can live on land as well as in water.
 4. Use of manure should be preferred to chemical fertilizers.
 5. The valency of oxygen is 2.
 6. The holding belts of a schoolbag are wide.
 7. Hydrometer is used to determine density of a liquid.
- Que. 4 A) Solve the following.** **4**
1. If density of water is 10^3 kg/m^3 and density of copper is $8.9 \times 10^3 \text{ kg/m}^3$
Calculate relative density of copper.
 2. A force of 1000 N is applied over an area 50 cm X 20 cm. What is the pressure acting at the bottom ?
- Que. 4 B) Draw well labeled diagrams of the following.** **6**
1. Structure of Bacteria
 2. Funaria
 3. Earthworm

APPENDIX D

Model answers for Science achievement pretest

(Space was provided to the students for writing the answers in the question paper itself)

SCIENCE AND TECHNOLOGY

Std. IX

Total Marks : 50

Test

Time :90 minutes

Name _____ Roll No. _____ Date _____

Note : Figures to the right indicate marks

Que. 1 A) Fill in the blanks with appropriate words (1 X 4 = 4)

1. The symbol of cadmium is Cd.
2. Science of classification and nomenclature of organisms is called Taxonomy.
3. BCG vaccine gives immunity against the Tuberculosis.
4. Chemicals used to protect the crops are known as Pesticides.

Que. 1 B) State whether the following statements are 'True' or 'False'(1 X 4 =4)

1. Relative density of a substance = density of the substance / volume of Water.
- **False**
2. Arthropods are vertebrate animals. - **False**
3. Rabies is a bacterial disease. - **True**
4. Anand Milk Union Limited (AMUL) was the driving force behind White Revolution. – **True**

Que. 1 C) Match the following

(0.5 X 4 = 2)

A	Answer	B
1. Nitric acid	HNO₃	a. MgO
2. Magnesium oxide	MgO	b. KCl
3. Sodium sulphate	Na₂SO₄	c. AlPO ₄
4. Potassium Chloride	KCl	d. Na ₂ SO ₄
		e. HNO ₃
		f. MgCl ₂

Que. 2 A) Answer the following questions in one sentence.

(1 X 4 = 4)

1. What is Law of constant proportion ? **(1)**

In a compound, the constituent elements are always present in a definite proportion of weight.

2. What do you mean by Hierarchy of characteristics ? **(1)**

To study various forms, main broad groups of organism is divided into smaller subgroups which have less important characteristics. This is called as Hierarchy of characteristics.

3. What are the means of spread of disease ? **(1)**

The means of spread of disease are air, water, vector (mosquitoes, flies, rats, dogs etc.), sexual contact.

4. What is Pisciculture ? **(1)**

Pisciculture is fish farming, i.e. rearing of fish on a large scale.

Que. 2 B) Distinguish between the following .

(2 X 2 = 4)

1. Pisces and Amphibia

(0.5 X 4 points = 2)

Pisces	Amphibia
<ol style="list-style-type: none">1. Animals belonging to class Pisces are aquatic.2. The body of fishes is streamlined.3. Locomotory organs are fins.4. Heart is two chambered.5. Respiration by means gills. Eg. – Fishes such as Rohu, Bombay duck, shark, etc.	<ol style="list-style-type: none">1. Animals belonging to Amphibia are terrestrial as well as aquatic.2. The body of amphibians is not streamlined.3. Locomotory organs are limbs.4. Heart is three chambered.5. Respiration by means of skin and lungs. Eg. – Frogs, Salamander etc.

2. Manures and Fertilizers

(0.5 X 4 points = 2)

Manures	Fertilizers
<ol style="list-style-type: none">1. Manures obtained from decaying and de-composing organic matter.2. Manures add humus to the soil.3. Manures do not cause soil pollution.4. Manures increase the organic matter of the soil.5. Cow dung, human waste and plant residues form manures.	<ol style="list-style-type: none">1. Fertilizers are prepared by chemical process.2. Fertilizers do not add humus to the soil.3. Fertilizers cause soil pollution.4. After repeated use decreases organic matter of the soil.5. Nitrogenous, phosphatic compounds form fertilizers.

Que. 2 C) Find the molecular masses of the following compounds (2 X 2 = 4)

(Atomic Masses : H = 1, S = 32, Ca = 40, O = 16)

1. Hydrogen sulphide (H₂S) (2)

Element	Atomic Mass	No. of atoms / Molecule	Atomic Mass X No. of Atoms	Total Molecular Masses
Hydrogen	1	2	1 X 2	2
Sulphur	32	1	32 X 1	32

Molecular Mass of H₂S = Sum of atomic Masses of H and S

= (Atomic Mass of H) X 2 + (Atomic Mass of S) X 1

= (1) X 2 + (32) X 1

= 2 + 32 = 34

Molecular Mass of H₂S = 34

2. Calcium Oxide (CaO) (2)

Element	Atomic Mass	No. of atoms / Molecule	Atomic Mass X No. of Atoms	Total Molecular Masses
Calcium	40	1	40 X 1	40
Oxygen	16	1	16 X 1	16

Molecular Mass of CaO = Sum of atomic Masses of Ca and O

= (Atomic Mass of Ca) X 1 + (Atomic Mass of O) X 1

= (40) X 1 + (16) X 1

= 40 + 16 = 56

Molecular Mass of CaO = 56

Que. 3 A) Write short note on the following

(2 X 2 = 4)

1. Factors essential for good health

(1 X 2 points = 2)

- Personal health and Public cleanliness –Each person should take care and efforts for good personal health by following good and hygienic habits, good and nourishing food and regular exercise .Civic bodies run by government and efforts of person maintain the public cleanliness, which is essential for good health
- Economical and Social factors – Clean drinking water, exercise, adequate amount of balanced diet, hygienic surroundings, need good economic conditions. Social equality and harmony in society is also essential for good health

2. Characteristics of Kingdom 'Monera

(0.5 X 4 points = 2)

- Monera is the most primitive kingdom among all five kingdoms of living organisms.
- All organism belonging to Monera are unicellular.
- They are prokaryotic without distinct nucleus and cell organelles.
- Some of them are autotrophic while some are heterotrophic.
Example - Bacteria.

Que. 3 B) Give scientific reasons

(2 X 7 = 14)

1. ORS should be immediately given to infants when they are sick with diarrhoea.

(0.5 X 4 points = 2)

ORS should be immediately given to infants when they are sick with diarrhoea because -

- When Infant is sick with diarrhoea he gets frequent watery loose motions, due to which, water and electrolyte content in the body is lost.
- This may be dangerous for the infants.
- ORS – Oral Rehydration Solution contains Glucose and combination of Electrolytes. It helps to save the life of the infants.
- It also manages the dehydration caused by diarrhoea.

2. A piece of iron sinks in water but floats on mercury. **(0.5 X 4 points = 2)**
- The Buoyant force due to a liquid is proportional to the density of the liquid. Hence, the volume of the liquid displaced by a floating body is inversely proportional to the density of the liquid.
 - The density of iron is more than that of water.
 - But density of iron is less than that of mercury.
 - Hence a piece of iron sinks in water but floats on mercury.
3. Frogs can live on land as well as in water. **(0.5 X 4 points = 2)**
- Frogs belong to the class Amphibia.
 - Amphibians can respire in water through their skin.
 - When on land they respire through lungs.
 - Therefore frog can survive on land as well as in water.
4. Use of manure should be preferred to chemical fertilizers. **(0.5 X 4 points = 2)**
- Manure is formed by Cow dung, human waste and plant residue, It increases fertility of the soil.
 - Manure adds humus and essential elements to the soil. It is nonpolluting.
 - Chemical fertilizers on the contrary can cause pollution of the soil.
 - Continuous use of chemical fertilizers makes the soil infertile.
 - Therefore use of manure should be preferred to chemical fertilizers.
5. The valency of oxygen is 2. **(0.5 X 4 points = 2)**
- The number of electrons that the atom of an element gives or takes to make its outermost orbit stable determines the valency of that element,
 - The electronic configuration of oxygen is 2,6. Thus there are 6 electrons in the outermost orbit of oxygen.
 - Oxygen needs 2 more electrons to complete the octet of its outermost orbit to be stable.
 - Hence, the valency of oxygen is 2.

6. The holding belts of a schoolbag are wide. (0.5 X 4 points = 2)

- Pressure is thrust per unit area.
- If area is more on which the force acts, the pressure will be less.
- The holding belts of a schoolbag are made so wide so that the pressure due to the weight of the schoolbag is reduced by it.
- It is then easier to bear the load of the schoolbag.
- Therefore, the holding belts of a schoolbag are wide.

7. Hydrometer is used to determine density of a liquid. (0.5 X 4 points = 2)

- The working of Hydrometer is based on Archimedes' principle.
- The extent to which hydrometer floats/sinks depends on the density.
- The greater the density of a liquid, the less is the extent to which a body sinks in it.
- Therefore Hydrometer is used to determine density of a liquid.

Que. 4 A) Solve the following (2 X 2 = 4)

1. If a density of water is 10^3 kg/m^3 and density of copper is $8.9 \times 10^3 \text{ kg/m}^3$ Calculate relative density of copper. (2)

- Given – Density of water = 10^3 kg/m^3
Density of Copper = $8.9 \times 10^3 \text{ kg/m}^3$
- To find – Relative density of Copper = ?
- Formula – Relative density of Copper = Density of Copper / Density of Water
$$= 8.9 \times 10^3 \text{ kg/m}^3 / 10^3 \text{ kg/m}^3$$
$$= 8.9$$

2. A force of 1000 N is applied over an area 50 cm X 20 cm. What is the pressure acting at the bottom ? (2)

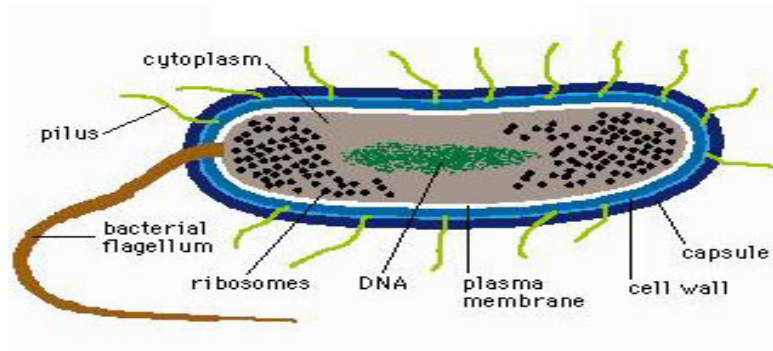
- Given – $F = 1000 \text{ N}$
 $A = 50 \text{ cm} \times 20 \text{ cm} = 0.5 \text{ m} \times 0.2 \text{ m} = 0.1 \text{ m}^2$
- To find – Pressure = $P = ?$
- Formula – $P = F / A$
$$= 1000 \text{ N} / 0.1 \text{ m}^2$$
$$= 10^4 \text{ N} / \text{m}^2$$

Que. 4 B) Draw well labeled diagrams of the following.

(2 X 3 = 6)

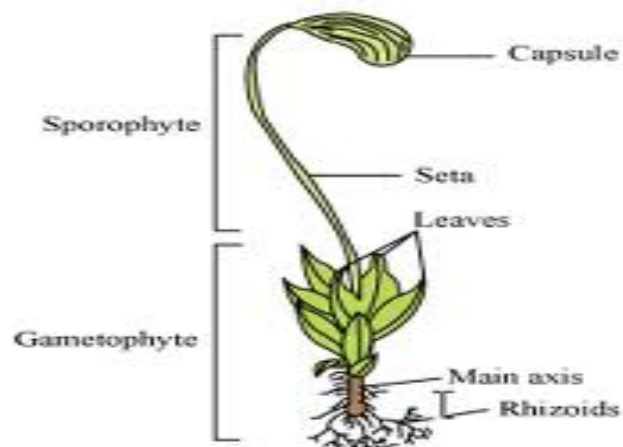
1. Structure of Bacteria

(2)



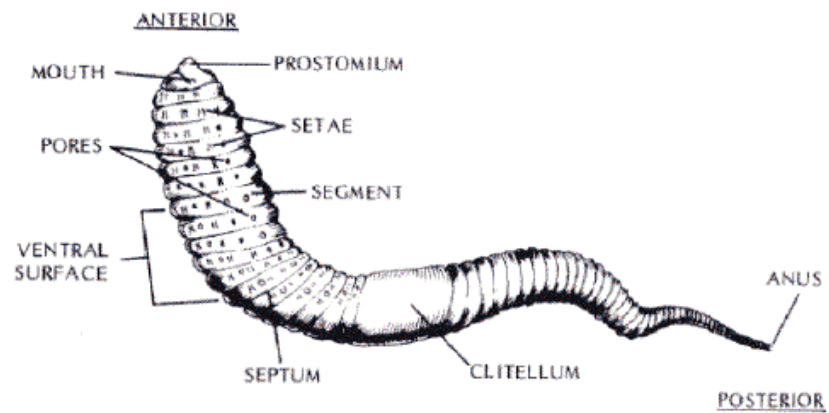
2. Funaria

(2)



3. Earthworm

(2)



APPENDIX E

Science achievement posttest

Science and Technology

Std. IX

Total Marks : 50

Test

Time :90 minutes

Note : Figures to the right indicate carries marks

Que. 1 A) Fill in the blanks with appropriate words **4**

1. The mass of 'H' atom is _____ u.
2. Plant cell wall is made up of _____.
3. Ability of an organism to resist disease is called _____.
4. _____ and _____ are other two methods of using pesticides.

Que. 1 B) State whether the following statements are 'True' or 'False' **4**

1. Density = mass / volume
2. Heart of mammals is three chambered.
3. There is no vaccine available against AIDS.
4. By using better fertilizers, better methods of irrigation and introduction of HYV seeds to improve food production is known as Green Revolution.

Que. 1 C) Match the following **2**

- | A | B |
|------------------------|-----------------------------|
| 1. Sulphuric Acid | a. KNO_3 |
| 2. Potassium Nitrate | b. H_2S |
| 3. Hydrogen Sulphide | c. Al PO_4 |
| 4. Aluminium Phosphate | d. H_2SO_4 |
| | e. Na_2SO_4 |
| | f. MgO |

Que. 2 A) Answer the following questions in one sentence. **4**

1. What is law of conservation of matter ?
2. What is taxonomy ?
3. What is meant by disease ?
4. What is Apiculture ?

Que. 2 B) Distinguish between the following . **4**

1. Amphibia and Reptilia
2. Chemical control for protection of crops and Biological control for protection of crops

Que. 2 C) Find the molecular masses of the following compounds **4**

1. Sodium Chloride (NaCl)
 2. Potassium chloride (KCl)
- (Atomic Masses : Na = 23, Cl = 35.5, K = 39)

Que. 3 A) Write short note on the following **4**

1. Health and interrelation of health with social and economic issues.
2. Characteristics of Kingdom 'Fungi'

Que. 3 B) Give scientific reasons **14**

1. Anti rabies vaccination of our pets is a must.
2. It is easier to pull a bucket full of water while it is in water than when it is out of water.
3. Birds are adapted to aerial mode of life.
4. Manures and fertilizers are required to be supplied to the soil on regular basis.
5. The valency of neon is zero.
6. The cutting edges of tools like knives, blades etc. are provided with sharp edges.
7. Lactometers were used to determine the purity of a sample of a milk.

Que. 4 A) Solve the following **4**

1. Calculate relative density of a metal having density $10.8 \times 10^3 \text{ kg/m}^3$ if density of water is 10^3 kg/m^3 .
2. Calculate pressure exerted by a screw on the wooden plank if area of contact of the screw is 0.5 mm^2 and its weight is 50 N.

Que. 4 B) Draw well labeled diagrams of the following **6**

1. Amoeba
2. Maize
3. Hydra

APPENDIX F

Model answers for Science achievement posttest

(Space was provided to the students for
writing the answers in the question paper itself)

SCIENCE AND TECHNOLOGY

Std. IX

Total Marks : 50

Test

Time :90 minutes

Name _____ Roll No. _____ Date _____

Note : Figures to the right indicate marks

Que. 1 A) Fill in the blanks with appropriate words. (1 X 4 = 4)

1. The mass of 'H' atom is 1u.
2. Plant cell wall is made up of Cellulose.
3. Ability of an organism to resist disease is called Immunity.
4. Fumigation and Dusting are other two methods of using pesticides.

Que. 1 B) State whether the following statements are 'True' or 'False'(1 X 4 =4)

1. Density = mass / volume - **True**
2. Heart of mammals is three chambered. - **False**
3. There is no vaccine available against AIDS. - **True**
4. By using better fertilizers, better methods of irrigation and introduction of HYV seeds to improve food production is known as Green Revolution. – **True**

Que. 1 C) Match the following.

(0.5 X 4 = 2)

A	Answer	B
1. Sulphuric acid	H_2SO_4	a. KNO_3
2. Potassium nitrate	KNO_3	b. H_2S
3. Hydrogen sulphide	H_2S	c. Al PO_4
4. Aluminium phosphate	Al PO_4	d. H_2SO_4
		e. Na_2SO_4
		f. MgO

Que. 2 A) Answer the following questions in one sentence.

(1 X 4 = 4)

1. What is law of conservation of matter ? (1)

The law of conservation of matter is 'Matter is neither gained nor lost during a chemical reaction.

2. What is taxonomy ? (1)

The method of biological classification in which identification of differences among the living things and their placement into groups having significant similar characteristics is called Taxonomy.

3. What is meant by disease ? (1)

Disease is the condition of the body when the vital functions of the body are disturbed physiologically or psychologically.

4. What is Apiculture ? (1)

The technique of rearing honeybees on the commercial level to obtain honey and bees wax is called apiculture.

Que. 2 B) Distinguish between the following.

(2 X 2 = 4)

1. Amphibia and Reptilia

(0.5 X 4 points = 2)

Amphibia	Reptilia
<ol style="list-style-type: none">1. All animals belonging to Amphibia are terrestrial as well as aquatic.2. The exoskeleton is absent and hence the skin looks slimy with mucous.3. The hind limbs are powerful.4. Respiration by means of skin and lungs.	<ol style="list-style-type: none">1. Reptiles are mostly terrestrial and few are aquatic. But they cannot breathe in water.2. The exoskeleton is rough with scales.3. The limbs are weak and short.4. Respiration by lungs only.

2. Chemical control for protection of crops and Biological control for protection of crops

(0.5 X 4 points = 2)

Chemical control for protection of crops	Biological control for protection of crops
<ol style="list-style-type: none">1. In chemical control, chemical pesticides are used to control the pest species that harm the crops.2. The method is very rapid as pests are killed within no time.3. Due to this environment becomes polluted.4. This is done by hand operated machines or sprayers.	<ol style="list-style-type: none">1. In biological control, birds, insects and other living organism are used to control the pest species that harm the crops.2. This method is very slow, as it takes time to kill the pests.3. This does not cause pollution.4. For this, predator organisms are deliberately released in the fields.

Que. 2 C) Find the molecular masses of the following compounds (2 X 2 = 4)

(Atomic Masses : Na = 23, Cl = 35.5, K = 39)

1. Sodium Chloride (NaCl) (2)

Element	Atomic Mass	No. of atoms / Molecule	Atomic Mass X No. of Atoms	Total Molecular Masses
Sodium	23	1	23 X 1	23
Clorine	35.5	1	35.5 X 1	35.5

Molecular Mass of NaCl = Sum of atomic Masses of Na and Cl

= (Atomic Mass of Na) X 1 + (Atomic Mass of Cl) X 1

= (23) X 1 + (35.5) X 1

= 23 + 35.5 = 58.5

Molecular Mass of CaO = 58.5

2. Potassium chloride (KCl) (2)

Element	Atomic Mass	No. of atoms / Molecule	Atomic Mass X No. of Atoms	Total Molecular Masses
Potassium	39	1	39 X 1	39
Clorine	35.5	1	35.5 X 1	35.5

Molecular Mass of KCl = Sum of atomic Masses of K and Cl

= (Atomic Mass of K) X 1 + (Atomic Mass of Cl) X 1

= (39) X 1 + (35.5) X 1

= 39 + 35.5 = 74.5

Molecular Mass of CaO = 74.5

Que. 3 A) Write short note on the following. (2 X 2 = 4)

1. Health and interrelation of health with social and economic issues.

(1 X 2 points = 2)

- Health is defined as a state of complete physical, mental and social well being of a person and not just absence of disease.
- Economical and Social factors – For clean drinking water, exercise, adequate amount of balanced diet, hygienic surrounding, good economic conditions are necessary. Social equality and harmony in society is also essential for good health

2. Characteristics of Kingdom 'Fungi' (0.5 X 4 points = 2)

- Fungi include non green eukaryotic organism.
- Mostly saprophytes as they obtain their food from dead and decaying organic matter.
- Their cell wall is made up of tough and complex sugar called chitin.
- The body of a fungus is made up of thread-like structure called hyphae.

Ex : Yeasts, Mushrooms

Que. 3 B) Give scientific reasons. (7 X 2 = 14)

1. Anti rabies vaccination of our pets is a must. (0.5 X 4 points = 2)

- Virus causing rabies affects domestic animals.
- This virus can make the pets sick.
- Once they contract the infection of rabies, they are called rabid.
- The bite by a rabid animal can cause rabies in humans also. It is a dangerous and fatal disease. Thus in order to prevent our pets from getting infected with rabies and also to protect ourselves, vaccination of our pets is a must.

2. It is easier to pull a bucket full of water while it is in water than when it is out of water. (0.5 X 4 points = 2)

- The buoyant force due to a fluid is proportional to the density of the fluid.
- The density of water is much greater than that of air.
- Therefore , the buoyant force acting on a bucket full of water while it is in water is much greater than that when it is out of water i.e. in air.

- Hence it is easier to pull a bucket full of water while it is in water than when it is out of water.

3. Birds are adapted to aerial mode of life. **(0.5 X 4 points = 2)**

- Bird belong to the class 'Aves'. The forelimbs of all birds are modified to form wings which are used for flying.
- Birds have hollow bones which reduce the weight of the bird during flight.
- They have streamlined and spindle shaped body which reduces the resistance while flying.
- Their exoskeleton is of feathers which make them lighter in weight. There are air sacs in their body which give buoyancy. Therefore birds are adapted to aerial mode of life.

4. Manures and fertilizers are required to be supplied to the soil on regular basis.

(0.5 X 4 points = 2)

- When crops are repeatedly cultivated in the soil, the primary nutrients in the soil are depleted.
- This cause deficiency in the soil.
- It is essential to enrich the soil again.
- So in order to enrich the soil again, manures and fertilizers are required to be supplied to the soil on regular basis.

5. The valency of neon is zero. **(0.5 X 4 points = 2)**

- The number of electrons that the atom of an element gives or takes to make its outermost orbit stable determines the valency of that element,
- The electronic configuration of neon is 2,8. Thus there are 8 electrons in the outermost orbit of oxygen.
- In neon, the outermost orbit is stable.
- Hence, the valency of neon is zero.

6. The cutting edges of tools like knives, blades etc. are provided with sharp edges.

(0.5 X 4 points = 2)

- Pressure is thrust per unit area.

- The pressure due to a force is inversely proportional to the area on which the force acts.
- The cutting edges of tools like knives, blades, etc. are provided with sharp edges so that a large pressure can be produced easily
- Hence the object can be cut with less force.

7. Lactometers were used to determine the purity of a sample of a milk.

(0.5 X 4 points = 2)

- The working of Hydrometer is based on Archimedes' principle.
- The extent to which hydrometer floats/sinks depends on the density.
- The greater the density of a liquid, the less is the extent to which a body sinks in it.
- Therefore Hydrometer is used to determine density of a liquid.

Que. 4 A) Solve the following.

(2 X 2 = 4)

1. Calculate relative density of a metal having density $10.8 \times 10^3 \text{ kg/m}^3$ if density of water is 10^3 kg/m^3 . (2)

- Given – Density of water = 10^3 kg/m^3
Density of a metal = $10.8 \times 10^3 \text{ kg/m}^3$
- To find – Relative density of a metal = ?
- Formula – Relative density of a metal = Density of metal / Density of water
= $10.8 \times 10^3 \text{ kg/m}^3 / 10^3 \text{ kg/m}^3$
= 10.8

2. Calculate pressure exerted by a screw on the wooden plank if area of contact of the screw is 0.5 mm^2 and its weight is 50 N. (2)

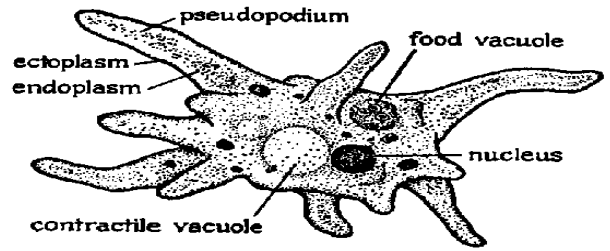
- Given – Area = $0.5 \text{ mm}^2 = 0.5 \times 10^{-6} \text{ m}^2$
Weight of the screw = Thrust = 50 N
- To find – Pressure = ?
- Formula – Pressure = Thrust / Area
= $50 / 0.5 \times 10^{-6}$
= $100 \times 10^6 \text{ N/m}^2$

Que. 4 B) Draw well labeled diagrams of the following.

(2 X 3 = 6)

1. Amoeba

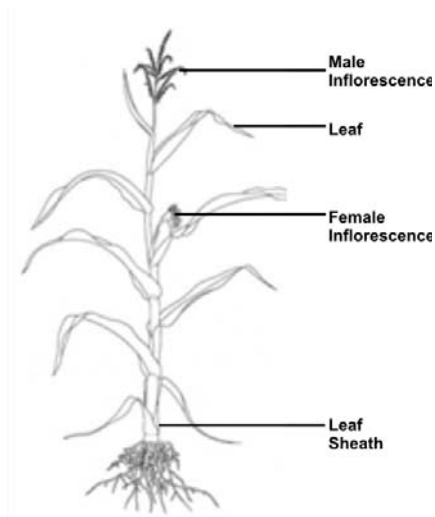
(2)



Structure of *Amoeba* (Class SARCODINA).

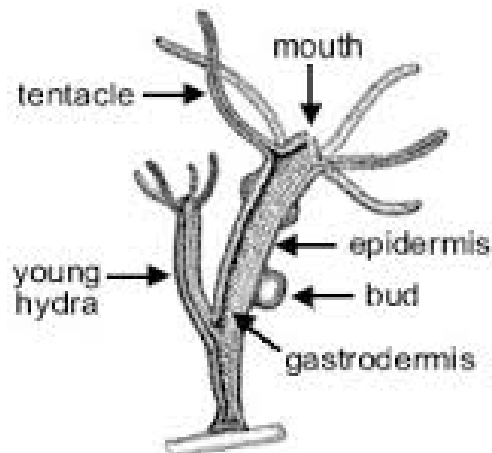
2. Maize

(2)



3. Hydra

(2)



APPENDIX G 1

Expert's opinion about study habits programme

Expert's Opinion about the Study Habits Programme

Plan of Study Habits Programme :

1. To create / develop Motivation in the students to study.
2. To give general introduction about the programme.
3. Preparation of the manual of various study habit techniques like time management, note making, mnemonics etc..
4. Explanation of manual and various techniques step by step to the student.
5. Teaching with various techniques included in the manual.

The above points were discussed in detail with the expert.

Opinion of the expert :

During the discussion I was impressed by the chosen topic and the decision to work with students studying in aided schools. Experimentation on the chosen sample will benefit and improve their way of learning.

• The Researcher wants to use techniques of study habits, so it would be useful if the Researcher can observe the application of the technique taught

• The students will benefit if the Researcher can provide the details of study technique to the students in the form of a Manual. This will help them in their self-study and its application to other subjects

S. S. Joshi 15.11.12
Dr Shobha. S. Joshi

Name and Signature of the Expert

APPENDIX G 2

Expert's opinion about study habits programme

Expert's Opinion about the Study Habits Programme

Plan of Study Habits Programme :

1. To create / develop Motivation in the students to study.
2. To give general introduction about the programme.
3. Preparation of the manual of various study habit techniques like time management, note making, mnemonics etc..
4. Explanation of manual and various techniques step by step to the student.
5. Teaching with various techniques included in the manual.

The above points were discussed in detail with the expert.

Opinion of the expert :

The steps and procedures for "Study Habits Programme" are planned logically and methodically by the researcher, hence can be implemented accordingly.

Mrs. N. Melha
Dr. Neelima Melha

Name and Signature of the Expert

Principal
Department of Education
Tilak Maharashtra Vidyapeeth
Pune - 411 037.

APPENDIX H

Information of the Guest speaker



Name: Dr. Shobha.Shrinivas. Joshi [B.Sc., M.Ed., Ph.D.]

Address: `Govind`, Cental Bank Housing Soc',
Patwardhan Baug, Pune-411004

Contact no's: Resi'-25441523, Mo'-9561084322

AWARDS:

- “Woman Achiever of the Year”,2002, Awarded by Ladies Circle No 45, of Hubli, Karnataka, India.
- “Veer Rani Kittur Chennamma” , Awarded by Vishwa Manu Seva Charitable Trust of Hubli, Karnataka.2003
- Honoured by Kavi Balaga of Hubli for service rendered in the field of Education.

EXPERIENCE:

- Presently working as Guest Lecturer for M.Ed course (subject- Psychology) at Tilak Maharashtra Vidyapeeth, Pune, India.
- Research Co-ordinator (2004-2005),`Shikshan Prabhodini Maharashtra Education Society, Pune, Maharashtra, India.
- Member of Advisory Board (2010-2011) of ‘Sri Sri Ravi Shankar English Medium School’, Pune.
- Head Mistress, (1994-2004), Rotary School of Hubli,
[Pre. Primary, Primary, Secondary Schools] Karnataka, India.

- Member of State Bank of India High School, [1992-2004] of Hubli, Karnataka, India.
- Member of Advisory Board[2002-2004] of Woman's Organisation Cancer Research Center of Hubli, Karnataka, India.
- Member of Advisory Board [1996-2004] of Chinmaya Vidyalaya of Hubli, Karnataka, India.
- Director of Vijnana Anaveshana , a Science Club of Chinmaya Seva Samithi Trust of Hubli, Karnataka, India, and various activities conducted by the School.
- Asst Teacher, [1983-1991] Maharashtra Education Society's, Bal Shikshan Mandir English Medium School, Pune, Maharashtra, India.

EDUCATIONAL PROGRAMS:

- Presented a paper for the National Conference held on 3rd November 2012, 'A study to find the creative urge of trainee teachers enrolled for B.Ed course in the Department of Education, Tilak Maharashtra Vidyapeeth,Pune'.
- Conducted workshop on 'Developing Creativity' for trainee teachers enrolled for B.Ed course in the Department of Education, Tilak Maharashtra Vidyapeeth,Pune'. [2009-2012]
- Conducted workshop on 'Emotional Intelligence and Stress Management Model Of Teaching' for trainee teachers enrolled for B.Ed course in the Department of Education, Tilak Maharashtra Vidyapeeth,Pune'-2013
- All India Radio Dharwad , Karnataka, India----Written and directed a play, ' Educational tours are essential for students'. Also gave talks on Education.
- Directed a script on ' Importance of Eye Donation', presented on World's Eye Blindness Eradication Day-2003, Hubli, Karnataka, India.
- Conducted Workshop-for Teachers, ' How to reduce stress due to exams in students'-2001.

- Conducted Workshop-for Teachers and Parents, 'Learning should not be a burden', 2001, Rotary School of Hubli.
- Conducted Summer camp for students of std VII to std X, Dr. Jayant Narlaikar, Dr. Ajit Kembhavi and their team from 'I.U.C.A.A', Pune-to create awareness of Astrophysics[1996-2004] as Director of Vijnana Anaveshana .
- Wrote an article based on the survey of ' Adolescent behavior and influence of family status' at A.C.C.E.R. Pune.
- Participated in Country-wide Class-room program, E.M.R.C., Pune. Lesson demonstration in Science through ' Model's of Teaching' guided by Dr.Kamalesh Chaudhary[1986-1988].

AREAS OF INTEREST:

- To guide Research students.
- To participate in Teacher training Programmes.
- To participate in workshops conducted for improvement in any field.
- To guide and counsel students and parents.

APPENDIX I

Acceptance Letter By Guest Speaker

Date: 19th January 2013

To,

Dr. Shobha Joshi

Dear Madam,

I, Mrs. Sarika Rathod, am pursuing my Ph.D. Course from Tilak Maharashtra Vidyapeeth in the faculty of Education.

I have undertaken experimental research for which I am implementing a programme on study habit techniques, on 9th std. students of Girme High School, Wanwadi, Pune. As a feature of this programme, I would like to request you to deliver a lecture on 'Motivation for Study Habits' to the students to develop preferable study habits. Your expertise and knowledge will prove beneficial to my students and the research work as well.

I am conveying the suitable Date and Time to you which can be rescheduled according to your convenience.

Date : 28th January 2013

Time : 2.00 p.m. to 4.00 p.m.

Looking forward for your acceptance.

Thanking You.

Yours Sincerely



Mrs. Sarika Rathod

*Recd
with thanks,
would be delighted to
be a part of your program.
Joshi*

APPENDIX J

Manual for Study habits techniques

A Manual for

Study habits techniques

By

Mrs. Sarika Rathod

KEEP THIS IN YOUR MIND

- Believe in yourself and start working from today itself.
- Be positive always –Ban negative thoughts.
- Don't compare yourself with others.
- Decide your short range goal and work accordingly to achieve it.
- Keep the time spent on T.V. watching as limited as possible.
- Have proper rest and sleep.
- Have proper diet.
- Relax everyday and use techniques to reduce stress.
- Study for your own knowledge, progress, good thoughts
- Study happily, by enjoying and without stress.
- Don't think of excuses for not studying.
- Make your study a part of daily routine.
- For knowledge and progress, continuous and hard work is a must.
- Link your feelings, thoughts, actions and work accordingly.
- To be successful discipline is must.
- To have name and fame, Education is must.
- Don't be nervous for your weakness but try to overcome it.
- Be Confident always but never be overconfident.
- Don't try to mix work and play.
- Ask yourself-
 1. Why am I not getting success?
 2. Am I working really hard?
 3. Why do I not concentrate on my studies?
 4. Am I acting as per my goal?Honestly find answers of these questions and work hard to overcome all problems.
- If you can remember other things like stories of the movies, scores of cricket match, then why not studies? For this, pay attention towards your studies.
- School represents a time in your life that may have a major impact on how the rest of your life turn out. Keep that in perspective so that the daily decisions you make are wise ones.

Nobody will help you, unless you first decide to help yourself

FEW THINGS TO DO

- Get motivated to study.
- Prepare charts and display it.
- Use mnemonics to provide useful associations and connections for remembering the required material.eg.- ‘BODMAS’ is the mnemonic for remembering the steps to simplify mathematical expression.
- The things which are similar in size, form, quality or intensity can be grouped together for remembering. eg.- The terms like ‘Pisciculture’ and ‘Apiculture’ can be remembered by their form and quality.
- Learning similar things are easier than learning dissimilar things.
- Relate the things with the things that lie close together in space or in time for better remembering eg.- Fish - water - Class ‘Pisces’- Pisciculture - Fish farming.
- Make meaningful relations between the things. eg.- Phylum ‘Porifera’ like sponges and the organisms are with holes in the body.
- Prepare proper time schedule for studying and other activities.
- Use various techniques of note taking.
- Review the notes when study of the chapter is completed.
- Correlate the topic with other topics to remember it in a better way.
- Organize the things properly.
- Use proper resources to get information.
- Use good reading skills.
- Set short range, academic and personal goals.
- Take full interest in your studies.
- Do practice to raise confidence.
- Take more efforts for proper understanding.
- Develop strong listening skills.
- Study at the same time daily.
- Avoid things in your study area that disturb your concentration.
- Have sufficient light while studying.

Whatever the mind of a man conceives and believes, it can be achieved

MANAGE YOUR TIME

- Study at the same time each day so that it becomes a habit.
- Plan for weekly reviews.
- Set aside blocks of study time (about 45 minutes each)
- Keep your study area just for studying and get rid of distractions.
- Take up a task and ensure its completion. Switching over from one task to another will delay the completion of the task.
- Do not get irritated by interruptions and keep some time for it in your schedule.
- Do not handle too many things at a time as it leads to stress and confusion.
- Group similar task together to save time.
- Organize things properly and do not let unnecessary things get collected on your table.

Plan properly for peak performance

1. Schedule your fixed commitments. Block out time for papers, projects, reading, meetings, scheduled exams, holidays, breaks, presentations etc.
2. Make a weekly schedule.
3. Make a daily To-Do List. At the end of each day organize and schedule your next day. Include routines and study time.

Follow your plan

1. Focus on the goals you have set for yourself and follow up on your true top priorities.
2. Align your priorities with your long-term values and goals.

Set priorities

1. List out the things that you need to do during your working day. Then prioritize them on the following factors
 - Urgency of the task
 - Importance of the task
 - Relationship to other task
 - Time required for completing the task

Set deadlines

1. Set achievable work deadlines for each task
2. Set a deadline to complete the task and stick with it.

Overcome procrastination

1. Set a goal for when you are going to start it so you can finish without a last minute panic. Without a fixed date of completion, you will procrastinate.
2. Keep stress at a minimum level. Start early to avoid a hectic finish.
3. Instead of making your goal to finish on time, make your goal to finish early.

If you are not able to complete a work in time, accept the consequences and take necessary action to complete it on time, the next time

READ SKILLFULLY

- Consider your style of reading.
- Be active and take interest in reading.
- Always make notes to keep up your concentration and understanding during reading.
- Underline or highlight the points that you think are the most important parts of what you are reading.
- Note key words i.e. Record the main headings as you read. Use one or two keywords for each point.
- Always remember the purpose for reading.
- Write what you have read into your own words.
- If you read without understanding, that means you are wasting your time.
- Use ‘**SQ4R techniques**’
 - S - Survey
 - Q - Question
 - 4R - Read, Reflect, Recall, Review

1. Survey

- Read the title, introduction or summary to know the important key points
- Notice the boldface headings.
- Notice any maps, graphs or Charts.
- Notice the reading aids, italics, bold face, questions at the end of the chapter.

2. Question

- Ask yourself questions like why?, what?, when?, where? and who? concerning the material surveyed. It helps to engaged mind in learning when it is actively looking for answers to questions.

3. Read

- Read the first sections with your questions in mind and look for the answers.

4. Reflect

- Make the information meaningful by linking it with previous knowledge, comparing and correlating the facts.

5. Recite and Recall

- After each section, stop and think back to your questions. See if you can answer them from memory. If not, take a look back at the text. Do this as often as you need to. Recite or recall orally or in writing.

6. Review

- Once you have finished the whole chapter, go back over all the questions from all the headings. See whether you can answer them. If not, look back and refresh your memory.

Believe in yourself and you can do it

BE PARTICULAR ABOUT NOTE MAKING

- Make good, concise, brief and accurate notes.
- Think to make decisions about what to write.
- Pay attention to what you are reading or listening to.
- Organize the notes in your own way and in your own words.
- Concentrate on the task.
- Keep a permanent record.
- Use particular abbreviations to aid note making
- Use of diagrams will not only make your notes much easier to read and more presentable but also help you to memorize the subject material
- Underline the important points, ideas or concepts
- Highlight the text by using light-coloured felt markers or highlighting pens.
- Make brief notes in the margins of the page in order to explain or comment upon the content.
- Summarize your notes accurately.
- Organize your notes : Keep all notes on the same subject or topic together
- Use colour coded files, one for each subject and use dividers / tabs to divide into sections
- Number the pages and create an index or contents page in your storage file.
- Always review your notes
- Don't write full sentences, they must however be in your own words and clear enough for you to read them when you come back to them.
- Don't simply copy out of workbooks or textbooks
- Use lots of space, this will let you add points later and will make it quicker and easier to re-read your notes

Sequential or linear note making

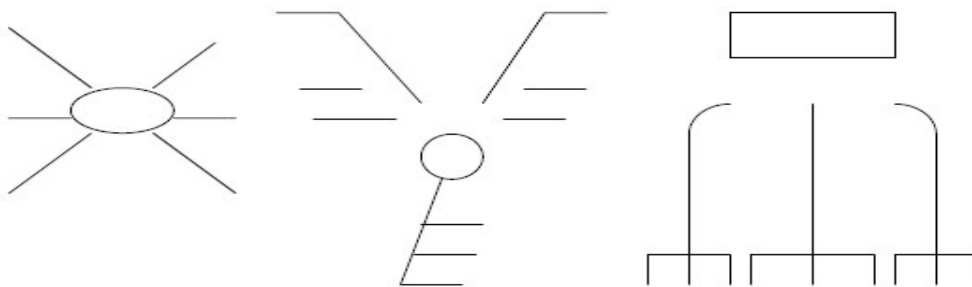
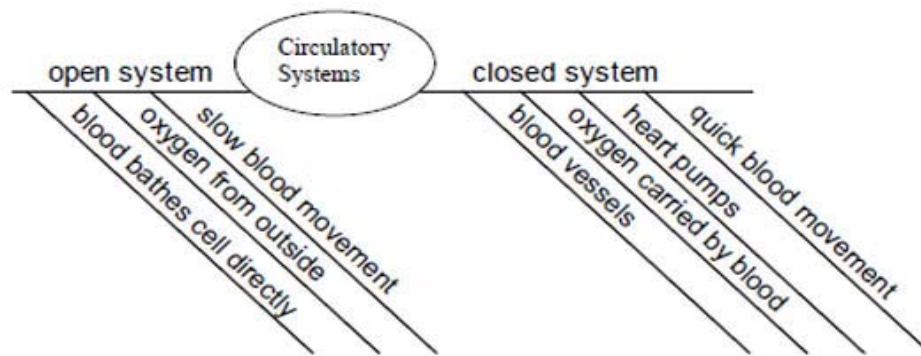
1. Make notes in the form of lists or phrases.
2. Include more or less details as required.
3. Highlight the points like Key words and phrases.
4. Give headings and subheadings.

5. Include diagrams flow charts and colours if suitable or appropriate.
6. Leave space in between the notes for comments or future additional notes.

Pattern note making or mind mapping

1. Start with a central heading or concept in the centre of the page
2. Note key words , ideas and / or concepts which surround the idea / concept
3. Give headings and subheadings and highlight it with boxes / circles
4. Underline or highlight key points
5. Be concise
6. Use symbols, images and colour as necessary
7. Use arrows / lines to link key words, ideas or concepts to show development

Eg:



Success in life depends on the hard work, the struggle, your experience, to reach your goal with a concrete plan.

APPENDIX – K
Charts used during the programme

KEEP THIS IN YOUR MIND

- Believe in yourself and start working from today itself.
- Be positive always – Ban negative thoughts.
- Don't compare yourself with others.
- Decide your short range goal and work accordingly to achieve it.



- Keep the place of T.V. for entertainment as limited as possible.
- Have proper rest and sleep.
- Have proper diet food.
- Relax everyday and use techniques to reduce stress.



- Study for your own knowledge, progress, good thoughts.
- Study happily, by enjoying and without stress.
- Don't think of excuses for not studying.
- Make your study a part of daily routine.
- For knowledge and progress, continuous and hard work is a must.



- Link your feelings, thoughts and actions and work accordingly.
- To be successful, discipline is must.
- To have name and fame, Education is must.
- Don't be nervous for your weakness but try to overcome it.
- Be Confident always but never be overconfident.
- Don't try to mix work and play.



- Ask yourself-
 1. Why am I not getting success?
 2. Am I working really hard?
 3. Why do not I concentrate on my studies?
 4. Am I acting as per the my goal?



Honestly find answers of these questions and work hard to overcome all problems.

- If you can remember other things like stories of the movies, scores of cricket match, then why not studies?
For this, pay attention towards your studies.
- School represents a time in your life that may have a major impact on how the rest of your life turn out.
Keep that in perspective so that the daily decisions you make are wise ones.

NOBODY WILL HELP YOU, UNLESS YOU FIRST DECIDE TO HELP YOURSELF

FEW THINGS TO DO

- Get motivated to study.
- Prepare charts and display it.
- Use mnemonics to provide useful associations and connections for remembering the required material.
eg.- 'BODMAS' is the mnemonic for remembering the steps to simplify mathematical expression.
- The things which are similar in size, form, quality or intensity can be grouped together for remembering.
eg- The terms like 'Pisciculture' and 'Apiculture' can be remembered by their form and quality.
- Learning similar things are easier than learning dissimilar things.
- Relate the things with the things that lie close together in space or in time for better remembering
eg- Fish-water-Class 'Pisces'- Pisciculture - Fish farming.
- Make meaningful relations between the things.
eg - Phylum 'Porifera' like sponges and the organisms are with holes in the body.
- Prepare proper time schedule for studying and other activities.
- Use various techniques of note taking.
- Review the notes when study of the chapter is completed.
- Correlate the topic with other topics to remember it in a better way.
- Organize the things properly.
- Use proper resources to get information.
- Use good reading skills.
- Set short range, academic and personal goals.
- Take full interest in your studies.
- Do practice to raise confidence.
- Take more efforts for proper understanding.
- Develop strong listening skills.
- Study at the same time daily.
- Avoid things in your study area that disturb your concentrations.
- Have sufficient light while studying.



**WHATEVER THE MIND OF A MAN CONCEIVE AND BELIEVE,
IT CAN BE ACHIEVED**

BE PARTICULAR FOR NOTE MAKING

- Make good, concise, brief, accurate notes.
- Think to make decisions about what to write.
- Pay attention to what you are reading or listening to.
- Organize the notes in your own way and in your own words.
- Concentrate on the task and keep a permanent record.
- Use particular abbreviations to aid note making.
- Use of diagrams will not only make your notes much easier to read and more presentable but also help you to memorize the subject material.
- Underline the important points, ideas or concepts.
- Highlight the text by using light-coloured felt markers or highlighting pens.
- Make brief notes in the margins of the page in order to explain or comment upon the content and summarize your notes accurately.
- Organize your notes : Keep all notes on the same subject or topic together.
- Use colour coded files, one for each subject and use dividers / tabs to divide into sections.
- Number the pages and create an index or contents page in your storage file.
- Always review your notes.
- Don't write full sentences, they must however be in your own words and clear enough for you to be to read them when you come back to them.
- Don't simply copy out of workbooks or textbooks.
- Use lots of space, this will let you add points later and will make it quicker and easier to review your notes.

SEQUENTIAL OR LINEAR NOTE MAKING

1. Make notes in the form of lists or phrases.
2. Include more or less details as required.
3. Highlight the points like Key words and phrases.
4. Have headings and subheadings.
5. Include diagrams flow charts and colours if suitable or appropriate.
6. Leave space in between the notes for comments or future additional notes.

PATTERN NOTE MAKING OR MIND MAPPING

1. Start with a central heading or concept in the centre of the page.
2. Note key words, ideas and / or concepts which surround the idea / concept.
3. Give headings and subheadings and highlight it with boxes / circles.
4. Underline or highlight key points.
5. Be concise and use symbols, images and colour as necessary.
6. Use arrows / lines to link key words, ideas or concepts to show development.

SUCCESS IN LIFE DEPENDS ON THE HARD WORK, THE STRUGGLE, YOUR EXPERIENCE, TO REACH YOUR GOAL WITH A CONCRETE PLAN.

READ SKILLFULLY

- Consider your style of reading.
 - Be active and take interest in reading.
 - Always make notes to keep up your concentration and understanding during reading.
 - Underline or highlight the points that you think are the most important parts of what you are reading.
 - Note key words i.e. Record the main headings as you read.
Use one or two keywords for each point.
 - Always remember the purpose for reading.
 - Write what you have read into your own words.
 - If you read without understanding, that means you are wasting your time.
 - Use 'SQ4R techniques'.
- S** - Survey **Q** - Question **4 R** - Read, Reflect, Recall, Review

1. SURVEY

- Read the title, introduction or summary to know the important key points
- Notice the boldface headings.
- Notice any maps, graphs or Charts.
- Notice the reading aids, italics, bold face, questions at the end of the chapter.

2. QUESTION

- Ask yourself questions like why, what, when, where and who concerning the material surveyed. It helps to engaged mind in learning when it is actively looking for answers to questions.

3. READ

- Read the first sections with your questions in mind and look for the answers.

4. REFLECT

- Make the information meaningful by linking it with previous knowledge, comparing and correlating the facts.

5. RECITE AND RECALL

- After each section, stop and think back to your questions. See if you can answer them from memory. If not, take a look back at the text. Do this as often as you need to. Recite or recall orally or in writing.

6. REVIEW

- Once you have finished the whole chapter, go back over all the questions from all the headings. See whether you can answer them. If not, look back and refresh your memory.

BELIEVE IN YOURSELF AND YOU CAN DO IT

MANAGE YOUR TIME

- Study at the same time each day so that it becomes a habit.
- Plan for weekly reviews.
- Set aside blocks of study time (about 45 minutes each)
- Keep your study area just for studying and get rid of distractions.
- Take up a task and ensure its completion. Switching over from one task to another will delay the completion of the task.
- Do not get irritated by interruptions and keep some time for it in your schedule.
- Do not handle many things at a time as it leads to stress and confusion.
- Group similar task together to save time.
- Organize things properly and do not let unnecessary things get collected on your table.

PLAN PROPERLY FOR PEAK PERFORMANCE

1. Schedule your fixed commitments. Block out time for papers, projects, reading, meetings, scheduled exams, holidays, breaks, presentations etc.
2. Make a weekly schedule.
3. Make a daily To-Do List. At the end of each day organize and schedule your next day. Include routines and study time.

FOLLOW YOUR PLAN

1. Focus on the goals you have set for yourself and follow up on your true top priorities.
2. Align your priorities with your long-term values and goals.

SET PRIORITIES

1. List out the things that you need to do during your working day. Then prioritize them on the following factors
 - Urgency of the task
 - Importance of the task
 - Relationship to other task
 - Time required for completing the task

SET DEADLINES

1. Set achievable work deadlines for each task
2. Set a deadline to complete the task and stick with it.

OVERCOME PROCRASTINATION

1. Set a goal for when you are going to start it so you can finish without a last minute panic. Without a fixed date of completion, you will procrastinate.
2. Keep stress at a minimum level. Start early to avoid a hectic finish. Instead of making your goal to finish on time, make your goal to finish early.

IF YOU ARE NOT ABLE TO COMPLETE A WORK IN TIME, ACCEPT THE CONSEQUENCES AND TAKE NECESSARY ACTION TO COMPLETE IT ON TIME, THE NEXT TIME

APPENDIX L 1

Lesson notes for traditional teaching

Lesson Note No.1

LESSON NO -8- HIGHWAY TO HEALTH

Objectives :

To teach the pupil about Health, Community health, Social Health and Factors essential for good health.

Teaching aid : Pictures of 'Heap of garbage' and 'Open food items'

Core element and Core value : Scientific Attitude, Neatness

Teaching Point	Objective and Specification	Teaching Aids	Teacher's Activity	Pupil's Activity	Evaluation
			Introduction: <ul style="list-style-type: none">• Teacher greets the pupils.• Teacher asks questions. 1) How many of you have 100% attendance? 2) What are the various reasons of being absent?	Pupil answers Pupil answers Pupil listens	

Definition of Health	<p>Knowledge - Pupil tells the definition of health, community health</p> <p>Comprehension Pupil explains the definition of health and community</p>	Picture about heaps of garbage	<ul style="list-style-type: none"> • Teacher explains that Health and various diseases are one of the reasons of being absent so to prevent this what can be done? <p>Statement of aim-</p> <ul style="list-style-type: none"> • So today we are going to learn about health, Community health, factors affecting health from the lesson Highway to Health <p>Presentation –</p> <ul style="list-style-type: none"> • Teacher explains definition of health. • Teacher explains definition of community health. • Teacher asks interrelation of health with personal, social, economic and environmental issues. • Teacher explains various factors essential for good health by 	and answers	
Definition of Community health.			Pupil listens		
Factors essential for good health.			Pupil listens		
Personal health			Pupil listens		

<p>-Public cleanliness</p> <p>-Economic and social factors</p>	<p>health.</p> <p>Knowledge</p> <p>Pupil tells factors essential for good health.</p> <p>Comprehension</p> <p>Pupil explains about factors essential for good health.</p> <p>Application</p> <p>Pupil avoids eating open food and follows the things for personal and public health.</p> <p>Skill - Pupil follows the things for</p>	<p>Picture of open food items etc.</p>	<p>showing pictures.</p> <ul style="list-style-type: none"> • Teacher shows pictures and asks What happens when we eat such type food? • Teacher explains about personal health, public cleanliness, economic and social factors. <p>Core elements and values -</p> <ul style="list-style-type: none"> • Teacher tells whenever we move in the surrounding keep eyes open and have scientific attitude and follow the things discussed for personal and social health. <p>Recapitulation -</p> <ul style="list-style-type: none"> • Teacher tells so today we have learn about health, community health, factors essential for good health. <p>Evaluation-</p> <ul style="list-style-type: none"> • Teacher asks question. 	<p>Pupil listens</p> <p>Pupil listens</p> <p>Pupil listens</p> <p>Pupil answers</p>	<ul style="list-style-type: none"> • Define 'Health' • What is
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	<p>personal health properly.</p> <p>Skill - Pupil creates awareness about personal health and social health in their surroundings.</p>		<p>Home Work</p> <ul style="list-style-type: none"> • Teacher gives H.W. 	<p>Pupil takes down H.W.</p>	<p>‘Community Health’?</p> <ul style="list-style-type: none"> • What are the factors of good health? • What will you do to maintain personal health? • What things can be done to maintain social health? • Write short note on ‘Factors essential for good health’.
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Lesson Note No.2

LESSON NO – 4- COUNTING MATTER

Objectives :

To teach the pupil about Laws of chemical combination, law of conservation of mass, law of constant proportion.

Teaching aid : Chart of Elements and their atomic masses.

Core element and Core value : Scientific Attitude, Neatness

Teaching Point	Objective and Specification	Teaching Aids	Teacher's Activity	Pupil's Activity	Evaluation
			Introduction: <ul style="list-style-type: none">• Teacher greets the pupils.• Teacher asks questions.<ol style="list-style-type: none">1) What is the smallest unit of a house, human body and a book?2) What is the smaller and complete unit of matter?• Teacher explains the smallest unit of a house, human body and a book is	Pupil answers Pupil answers Pupil listens	

Law of conservation of matter	Knowledge - Pupil tells the Law of conservation of matter		brick, cell and alphabet respectively. In the same manner, the smallest and complete unit of matter is atom.	Pupil listens	
Law of Constant proportion			<p>Statement of aim-</p> <ul style="list-style-type: none"> • So today we are going to learn more about atoms, laws of chemical combination, law of conservation of mass, law of constant proportion from the lesson Counting Matter. <p>Presentation –</p> <ul style="list-style-type: none"> • Teacher explains Law of conservation of matter by giving examples. • Teacher writes the law on the B.B. • Teacher explains Law of Constant proportion by giving examples • Teacher writes the law on the B.B • Teacher asks the Law of conservation of matter and Law of 		
Chemical symbols of Elements	Comprehension Pupil explains the Law of conservation of			Pupil observes	
Molecules of					Pupil listens
				Pupil observes	
				Pupil listens	
				Pupil observes	
				Pupil answers	

<p>Elements and compounds.</p> <p>Molecular mass</p>	<p>matter</p> <p>Knowledge</p> <p>Pupil tells the Law of Constant proportion</p> <p>Comprehension</p> <p>Pupil explains the Law of Constant proportion</p>	<p>Chart of Elements and their atomic masses.</p>	<p>Constant proportion to the pupils.</p> <ul style="list-style-type: none"> • Teacher explains Chemical symbols of Elements by showing the chart. • Teacher explains the concept of molecular mass. • Teacher explains the procedure of finding molecular mass by giving example of H₂O • Teacher solves the sum on B.B. to find Molecular mass of CO₂ with explanation and pupil participation <p>Core elements and values -</p> <ul style="list-style-type: none"> • Teacher explains that always we should have scientific attitude and accuracy in everything they do. <p>Recapitulation -</p> <ul style="list-style-type: none"> • Teacher tells so today we have learn Law of conservation of matter, Law of Constant proportion, 	<p>Pupil listens</p> <p>Pupil listens, observes and participates.</p> <p>Pupil listens</p>	
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	<p>Application Pupils finds the molecular mass of the substances.</p> <p>Skill - Pupils finds the molecular mass of the substances accurately.</p>		<p>Chemical symbols of Elements, Molecules of Elements and compounds and Molecular mass</p> <p>Evaluation-</p> <ul style="list-style-type: none"> • Teacher asks question. <p>Home Work</p> <ul style="list-style-type: none"> • Teacher gives H.W. 	<p>Pupil answers</p> <p>Pupil takes down H.W.</p>	<ul style="list-style-type: none"> • State the law of conservation of matter • What is the law of constant proportion? • Find out the molecular mass of CaO. • Find the Molecular Masses of the following compounds KCl, H₂S
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APPENDIX L 2

Plan for teaching of study habits techniques

Lesson Note No.1

GENERAL TECHNIQUES

Objective : To teach the pupils various techniques of study habits.

Teaching aid : Chart ‘ Keep this in your mind’

Technique	Teacher's Activity	Pupil's Activity
<ul style="list-style-type: none">• Introspection	<ul style="list-style-type: none">• Teacher greets the pupils.• Teacher asks pupils to close their eyes and ask these questions to own self. Am I working really hard? Do I concentrate on my study? Am I acting as per my goal?• Teacher tells that all of you have different answers for these, You may have wish to work hard, to study perfectly but don't know what to do? For this, today we are going to discuss what things we should keep in our mind to get success in study.• Teacher explains the chart point wise by giving various examples related to each point.	<ul style="list-style-type: none">• Pupil greets the teacher.• Pupil does the said activity.• Pupil thinks accordingly.• Pupil listens
<ul style="list-style-type: none">• Believe in	<ul style="list-style-type: none">• Teacher encourages the pupils	<ul style="list-style-type: none">• Pupil listens

<p>yourself</p> <ul style="list-style-type: none"> • Setting short range goals • Have proper diet • Hard work • Discipline 	<p>to believe in themselves and gives various examples of eminent personalities.</p> <ul style="list-style-type: none"> • Teacher explains the importance of setting short range goal. • Teacher explains the importance of having proper diet food. • Teacher tells the preferable diet to the students, • Teacher explains the importance of hard work and gives examples related to it. • Teacher explains the importance of discipline in study and life. • Teacher revises the chart and tells to take daily decisions wisely. • Teacher asks the pupils to promise that they will work accordingly. 	<ul style="list-style-type: none"> • Pupil listens • Pupil listens • Pupil listens • Pupil listens • Pupil listens • Pupil listens • Pupil promises to work accordingly.
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Lesson Note No.2

GENERAL TECHNIQUES

Objective : To teach the pupils various techniques of study habits.

Teaching aid : Chart ‘ Few things to do’

Technique	Teacher’s Activity	Pupil’s Activity
<ul style="list-style-type: none"> • Motivation • Preparation of chart 	<ul style="list-style-type: none"> • Teacher greets the pupil. • Teacher motivates the pupil with a good thought. Teacher tells the pupil to keep own self motivated with strong belief in you. • Teacher explains how to prepare the charts • Teacher distributes the chart papers to pupil. • Teacher instructs about preparation of chart. • Teacher shows one of chart as an example. • Teacher gives various topics from science to prepare the chart to each pupil. • Teacher gives homework to prepare the charts on the given topics and follow the specification about study area. • Teacher asks students, “where do you study?” “Do you study at same time and place daily?” 	<ul style="list-style-type: none"> • Pupil responses. • Pupil responses accordingly. • Pupil listens • Pupil collects the paper • Pupil listens • Pupil observes • Pupil note down the topics • Pupil listens • Pupil answers

	<ul style="list-style-type: none"> • Teacher explains each specification about study area. • Teacher explains the importance of studying at same place and time daily • Teacher explains the importance of having sufficient light in study area. • Teacher explains how to avoid disturbance in study area. • Teacher asks students to put charts in study area. 	<ul style="list-style-type: none"> • Pupil listens • Pupil listens • Pupil listens • Pupil listens • Pupil agrees.
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Lesson Note No.3
Mnemonic Devices and Use of laws of organization
By Gestalt Psychologist.

Objective : To teach the pupils various techniques of study habits.

Teaching aid : Chart ‘ Few things to do’

Technique	Teacher’s Activity	Pupil’s Activity
<ul style="list-style-type: none"> • Mnemonic devices a) Initial letter strategy b) The key work method 	<ul style="list-style-type: none"> • Teacher greets the pupil. • Teacher explains the meaning of mnemonic devices • Teacher explains the concept and importance of mnemonic devices in study • Teacher gives many general examples of mnemonic devices like VIBGYOR, BODMOS etc. • Teacher explains about initial letter strategy to the pupil. • Teacher explains how to prepare mnemonic by initial letter strategy by giving examples of Science. • Teacher explains about key word method and tells how to prepare mnemonics by using it. • Teacher gives examples from Science subject • Teacher asks pupil to prepare mnemonics 	<ul style="list-style-type: none"> • Pupil responses • Pupil listens • Pupil listens • Pupil listens • Pupil listens • Pupil listens • Pupil listens • Pupil listens • Pupil makes various mnemonics

<ul style="list-style-type: none"> • Use of laws of organization explained by Gestalt psychologist 	<ul style="list-style-type: none"> • Teacher explains that, the things which are similar in size, form quality or intensity can be grouped together for remembering • Teacher gives examples related to it. • Teacher tells that lg. similar things are easier than learning dissimilar things. • Teacher asks pupil to relate the things with that lie close together in space or in time for better remembering • Teacher explains how to correlate the topic with other topics with other topics by giving examples • Teacher gives Home work Prepare mnemonic devices on your own for all lessons. Make a list of concept ideas, theories which are similar in nature from Lesson -7 	<ul style="list-style-type: none"> • Pupil listens • Pupil listens and observes • Pupil listens • Pupil agrees • Pupil listens • Pupil note down the homework
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Lesson Note No.4

Time Management

Objective : To teach the pupils various techniques of study habits.

Teaching aid : Chart ‘ Manage your time’

Technique	Teacher’s Activity	Pupil’s Activity
<ul style="list-style-type: none"> • Time management a) Follow you plan b) Set priorities c) Set deadlines d) Overcome procrastination 	<ul style="list-style-type: none"> • Teacher greets the pupil. • Teacher explains the importance of time in our lines to the students • Teacher asks the general schedule of the students • Teacher shows ‘Model time table’ to the student and explains it • Teacher explains the reason of scheduling particular subject daily • Teacher explains <ul style="list-style-type: none"> a) Why there is gap of 10 minutes after studying every subject ? b) What activities to be done during break time? c) Importance of meditation d) How to meditate ? • Teacher explains that considering total days for study, weightage for the lesson and its difficulty level, the lesson should be divided in various parts for study. 	<ul style="list-style-type: none"> • Pupil responses • Pupil listens • Pupil answers • Pupil observes • Pupil listens • Pupil listens • Pupil listens

	<ul style="list-style-type: none"> • Teacher asks pupil to prepare weekly time table • Teacher suggest the correction to the student. • Teacher asks students to prepare daily time table as well as weekly schedule. • Teacher gives Homework Prepare and follow the weekly time table for study. 	<ul style="list-style-type: none"> • Pupil prepares weekly time table. • Pupil makes the corrections in the time table. • Pupil prepares daily time table as well as weekly schedule. • Pupil note down the homework
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Lesson Note No.5

Reading Skills

Objective : To teach the pupils various techniques of study habits.

Teaching aid : Chart ‘ Read skillfully’

Technique	Teacher’s Activity	Pupil’s Activity
<ul style="list-style-type: none"> • Reading technique a) Taking interest b) Underlining or highlighting the main or important points c) Understand the concept d) Keep purpose of reading in mind 	<ul style="list-style-type: none"> • Teacher greets the pupil. • Teacher explains the importance of reading in study • Teacher discusses the reading habits of the students • Teacher suggests various activities to incorporate in reading • Teacher tells student to take interest in reading which leads to concentration. • Teacher explains how to underline or highlight the main points which helps in revision • Teacher tells the students to take efforts to understand the concepts. 	<ul style="list-style-type: none"> • Pupil responses • Pupil listens • Pupil discusses • Pupil agrees • Pupil listens • Pupil listens • Pupils listens
<ul style="list-style-type: none"> • SQ4R technique a) Survey b) Question c) Read d) Reflect e) Recite and recall f) Review 	<ul style="list-style-type: none"> • Teacher explains the meaning of SQ4R technique. • Teacher explains the steps to be followed during the technique • Teacher explains each step in detail by giving examples. 	<ul style="list-style-type: none"> • Pupils listens • Pupils listens • Pupils listens

	<ul style="list-style-type: none"> • Teacher gives demonstration of SQ4R technique from lesson -13. • Teacher asks student to develop the habit of reading by using the technique. • Teacher gives Homework Read all the lessons by following SQ4R technique. 	<ul style="list-style-type: none"> • Pupils observes • Pupils agrees • Pupil note down the homework
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Lesson Note No.6

Note Making

Objective : To teach the pupils various techniques of study habits.

Teaching aid : Chart ‘ Be particular about note making’

Technique	Teacher’s Activity	Pupil’s Activity
<ul style="list-style-type: none"> • Note making Note should be <ul style="list-style-type: none"> ➤ Concise ➤ Brief ➤ Accurate ➤ Use of abbreviations ➤ Diagrams • Types of note making <ul style="list-style-type: none"> a) Sequential or linear note making b) Pattern note making 	<ul style="list-style-type: none"> • Teacher greets the pupil. • Teacher asks pupil how they make notes • Teacher discusses about note making of the students in detail • Teacher explains various things to be consider in note making • Teacher explains types of note making in details • Teacher explains about sequential note making • Teacher shows example for sequential note making • Teacher explains pattern note making with suitable examples • Teacher gives examples from lesson 4 for pattern note making • Teacher ask student to prepare patter notes for lesson 8 • Teacher gives Homework Prepare notes by following the technique for all the lessons. 	<ul style="list-style-type: none"> • Pupil responses • Pupil answers • Pupil discusses • Pupil listens • Pupil listens • Pupils listens • Pupils observes • Pupils listens • Pupils observes and listens • Pupils listens • Pupil note down the homework

APPENDIX M

Model Time table for study

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
							Morn.	Eve.
7.00 - 7.05	Meditation	→	→	→	→	→	→	→
7.05 - 7.45	Science	Science	Science	Science	Science	Science	Science	Hindi
7.45 - 7.55	Break	→	→	→	→	→	→	→
7.55 - 8.30	Algebra	Geometry	Algebra	Geometry	Algebra	Geometry	Algebra	History
8.30 - 8.40	Break	→	→	→	→	→	→	→
8.40 - 9.15	English	Marathi	Hindi	History	Geography	English	Marathi	Geography

APPENDIX N

1. Time Table Prepared by Students

<u>Preparation of Time Table.</u>					<small>navneet.com</small> Page No.: Date: / /					<small>navneet.com</small> Page No.: Date: / /	
Day Date	Time	Subject	Lesson	Task							
					8/2/13	8am-11am	—	—	—	—	class
					Friday	12am-5pm	—	—	—	—	School
						6pm-8pm	—	—	—	—	class
5/2/13	8am-11am	—	—	class		8:30-10:30	Science	7, 13	—	—	Learn
Tuesday	12am-5pm	—	—	School							
	6pm-8pm	—	—	class	9/2/13	7:30am-11:30	—	—	—	—	School
	8:30-10:30	English	7.1 & 7.2	Read	Saturday	1am-3am	Geometry	6, 8	—	—	Revisi
		Marathi	9, 10, 11	Learn	day	4pm-8pm	—	—	—	—	Class
6/2/13	8am-11am	—	—	class							
Wednesday	12am-5pm	—	—	School							
	6pm-8pm	—	—	class							
	8:30-10:30	Science	3, 4, 8	Read							
		Marathi	12, 8, 9	Learn							
7/2/13	8am-11am	—	—	Class							
Thursday	12am-5pm	—	—	School							
	6pm-8pm	—	—	class							
	8:30-10:30	ALGEBRA	Lesson 6	Revision							

2. Time Table Prepared by Students

Time/date	11/2	12/2	13/2	14/2	15/2	16/2	
7:00-7:05	Meditation	-	-	-	-	-	* To Do list.
7:05-7:45	Sci	-	-	-	-	-	Date Time Subject Lesson Task
7:45-7:55	Break	-	-	-	-	-	Friday 6 to 8 Science 3,4 Revision
7:55-8:30	Algebra	Geomet	Algebra	Geometry	Algebra	Geomet	8 to 10 - - class
8:30-8:40	Break	-	-	-	-	-	12 to 5:30 - - School
8:40-9:15	Eng	Marathi	Hindi	History	Geogra	Eng	6:30 to 9 Science
17/2	17/2	17/2					Date Day
7:00-7:05	med ⁿ	-					Friday :- 6 Wake up
7:45-7:55	Sci	Hindi					8 to 10 class
7:55-8:30	Break	-					12:15 to 5:20pm School
8:30-8:40	Algebra	History Geometry					6:30 to 9:30 Science learn Algebra. Revision.
8:40-9:15	Break	-					10:45 sleeping
	Marathi	Geography					

APPENDIX O

Study habits techniques followed by students

4. Correlation / Association

- Size
- form
- Shape
- quality
- intensity
- Space & Time

* Mnemonics

1. Vusi = 1
2. vomi = 1
3. PP = IAS
4. BIAKOT = BLOOD IS KIND OF Tissue.
5. DNA = D
6. RPACO = Body parts are called Organs
7. LC = EOO
8. MONA = 14 ∴ Mass of Nitrogen atom

9. HBSOTC = HUMAN body → System

- Organs - Tissue → cell

10. LHDV = Liquids have definite volume.

11. WOM = world of Matter
12. gmm = mmeig.
13. CH = community Health
14. MT = Meristematic Tissue
15. SPT = Simple permanent Tissue
16. LOETQV =
17. PA = Phylum Annelida
18. CV = Crawling vertebrates.
19. POID = Prevention of Infectious Disease
20. WHD = world Health Day
21. SCUKIA = Smallest and complete Unit of Matter is Atom.

22. N.A.R = Negative acceleration called Retardation.

23. Ele. of. At^m = PEN = Proton, Electron, Neutron.

24. val^{ty} OF Na = 1

25. Law of conⁿ of M
Matter is neither gained nor lost during a chemical reaction.
Mat is neither gu. not lost in C.R.

* include

1. PPS = ~~IAS~~ ∴ Phylum Protista all Sponges are unicellular
2. KM = OU ∴ Monera ∴ All organisms
3. XF = SP = xylum fibres Support

4. KF = NG.E.H.O = KINGDOM FUNGI
Are Non-green, eukaryotic, heterotrophic organisms.

5. F.C.W.T.C.S.C. = Fungi's Cell wall is made up of complex Sugar called 'chitin'.

6. Sub. Cr. = ~~A.FI.pl.~~ Non-Flow^{ng} pl. Subkingdom Cryptogamae are non-flowering plants.

7. D.B. = BSR ∴ Division Bryophyta have root like structure called rhizoids.
Di. Bry = BSB

8. DP = SVT \therefore Division Pteridophyta possess a simple vascular tissue.

9. Pri. B. ca. = pseudocoelom
Primitive body cavity is called pseudocoelom

10. CR - C-b. t.ia \therefore class Reptilia are cold-blooded, terrestrial animals.

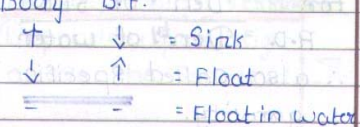
11. Pri. B. cav = P
Primitive body cavity is called Pseudocoelom

12. PC = AM
Phylum Coelenterata are aquatic and marine.

4.3 Why Bodies Float

1. force acting on an object area \perp to the surface area is called thrust.
2. Thrust on unit surface area is called pressure unit
3. for Pressure = $\frac{\text{Thrust}}{\text{Area}}$ N/m^2
4. Liquids, gases are called fluids
5. Pressure does not depend upon size, shape of container, height & density of liquid.
6. The upward force exerted

by water on a body is called buoyant force.

7. Body B.F.


8. When a body is immersed Archimedes' principle or Partially completely or partially in a fluid, it experiences an upward force that is same to weight of fluid displaced by it.


9. Density of Sub. is ratio of its mass to its volume. Density is different for different substances.

10. relative density of a Sub. = ratio of its density to that of water
for $R.D. = \frac{\text{Den}^{\text{ty}} \text{ of Sub.}}{\text{Den}^{\text{ty}} \text{ of water}}$
 \therefore also called Specific gravity.

11. Pressure exerted by gas
 Pressure exerted by gas in a closed container is due to collision of gas molecules with walls of container as these molecules in a random motion.

name.com
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42. The air exerts pressure in all directions.



42. Atmospheric Pressure
Depends upon height above the sea level.


43. Property of liquid to exerts upward force / buoyant force is called buoyancy.

44. Liquid Pressure exerted in all sides of the container.



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
42. The air exerts pressure in all directions.



Pressure on base

42. Atmospheric Pressure =

- Pressure exerted by gas.
- This is due to collision of gas molecules.
- Force exerted on unit surface area by the weight of air.
- It depends upon (h) from sea level.
- At sea level atmpre. = 10^5 pa .



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43. WHY BODIES FLOAT

1] Force acting on an object 1^{st} to the surface is called thrust.

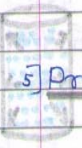
2] Pressure = thrust on unit surface = Pressure.

3] For 1^{a} $P = \frac{T}{A}$ = Pressure = $P = \frac{T}{A}$

Thrust
Area

4] Pressure unit - $\frac{\text{N}}{\text{m}^2}$ = Newton N/m^2
(metre)² pascal = pascal = (Pa)

5] Pressure in Fluids



Liquid Gases

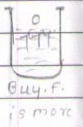
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7] Liquid Pressure

- Independent of size, shape.
- Depend upon ht, density, depth.
- depth \uparrow = L.P. \uparrow

8] Buoyant Force / Upthrust
upward force

- exerted by water
- also called as upthrust
- Buoyant force \downarrow = vol of obj. \uparrow
- \rightarrow Den^{ty} of liquid \uparrow = Buy. F. \uparrow
- \rightarrow If buoyant F. \uparrow than \rightarrow object floats
- " " \downarrow " " wt \rightarrow object sinks



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- Object floats in the middle of liq.

* Archimedes Principle
When a body is immersed completely or partially in a fluid, it experiences upward force = wt of fluid displaced by it.

* Application of Archimedes principle.

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- In Submarines = Ship
- = Which can float on surface of sea or can sink when necessary and reappear again on the surface
- It has large tanks both at the front & at the end
- tanks can be filled with sea water or compressed air

* condition 1
Tank filled with water
∴ wt ↑ and ship ↓

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Health

Physical, Mental, Social

Personal, Mental, Social

Emotional, Physical, Social

8.1.3 Community Health

Environmental factors, Genetic factors

Disease

Disease

departure from health

body

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8.2.1 Symptoms and signs of diseases

8.2.2 Types of Diseases

symptoms

human body

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- 1) Motivation.
- 2) Chart.
- 3) AIM Mnemonics.
e.g. V = Violet,
I = Indigo,
B = Blue,
G = Green,
Y = Yellow,
O = Orange,
R = Red.

GOODMAS
G = Bracket,
O = off,
D = Division,
M = Multiplication,
A = Add,
S = Subtract.

LP = Like Poles (Like Poles)
ULP = Unlike Poles (Unlike Poles)

- 4) Correlation / Association.
- Size
- Form
- Shape
- Quality
- Intensity

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3) - Space.
- time.

Preparation of Time Table.

* Mnemonics.

- 1) B.S.: Bilateral Symmetry.
- 2) R.S.: Radical Symmetry.
- 3) V.C.: Valency is the combining capacity of the element.
- 4) M.T.: Mycobacterium tuberculosis.
- 5) W.O.M.: World of Matter.
- 6) L.G.F.: Liquid, gases = Fluids.
- 7) C.T.: Complex tissue.
- 8) C.E.: Cuboidal epithelium.
- 9) G.G.: Glandular epithelium.
- 10) P.T.: Permanent tissue.
- 11) N.A.A.F.S.: Negative acceleration also called retardation.
- 12) B.C.Y.: Better crop yielding.
- 13) P.F.: Poultry farming.
- 14) A.H.: Animal husbandary.
- 15) C.C.: Chemical Control.
- 16) B.C.: Biological Control.
- 17) W.R.: White revolution.

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- 18) L.H.V.: Liquids have definite volume.
- 19) S.M.A.: The smallest and complete unit of matter is Atom.
- 20) B.P.O.: The body parts are called organs.
- 21) E.O.A.T.M. - P.E.N. - Element of Atoms - Proton, Electron, Neutron.
- 22) Law of Con^{vn} of mat.
Mat is neither gain nor lost in C.R.
Matter is neither gained nor lost during chemical reaction.
- 23) B.F.M.: Bat is a flying mammal.
- 24) S.K.A.W.P. = Snake, King - Cobra, Water Snake, Python.
- 25) P.A. = L.E.N.:
- 26) M.A.N.S.O.: Mollusca Anterior head with sense organ.
- 27) A.F.C.H.: Aves have four chambered heart.
- 28) V.B.G.A.: Volvox is blue green alga.
- 29)

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Lesson No. 15.
15. Why bodies float.

No. Lesson No. 15.

15.1: Thrust.
The force acting on an object perpendicular to the surface is called Thrust.

2) Pressure
The thrust on a unit surface area is called pressure.

3) Formula
Pressure = $\frac{\text{Thrust}}{\text{Area}}$

4) UNIT
SI unit of pressure is N/m².

15.2: Fluids
Liquid and gases are called fluids.

15.3: Atmospheric pressure
The atmospheric pressure on the sea level is 10⁵ pascal.

Pressure
Thrust Area
N/m²
Fluids
Gas liquid
Atmospheric
pressure 10⁵ Pa.

13.5:-
Buoyant force
 If weight is more and buoyant force is less than object is sink
 If weight is less and buoyant force is more than object is float
 If weight and buoyant force is equal than the object is float in middle of the water.

W:BF =
 ↑ ↓ = Sink
 ↓ ↑ = float
 - - = middle of the water.

13.6:-
 Application of Archimedes principle
 Archimedes principle is used to design the ship.

In the Archimedes principle.
 Lactometer: purity of milk
 hydrometer: density of liquid

Archimedes principle diagram: A ship is shown floating in water. Labels include: Density of liquid, Density of object, and Density of liquid.

13.4: LIQUID PRESSURE

The pressure is dependent on size shape of the object.
 Pressure depend size shape.

The pressure is also dependent upon the height and the depth of liquid.
 Pressure depend height depth liquid.

No 13.6
Pressure Exerted by Gas
 The atmospheric pressure depend upon the height of the sea level.

depend height

No 43.5
 * Buoyant Force

i) Volume of Object: The buoyant force is greater if volume of object in liquid is greater.
 The buoyant force volume is greater.

ii) Density of liquid: The buoyant force is greater if density of liquid is greater.
 The buoyant force density is greater.

* The force acting on an object perpendicular to the surface is called thrust.
 Force acting on an object perpendicular to surface = Thrust.

2) pressure.
 Thrust on unit surface = pressure

3) formula.
 $P = \frac{F}{A}$ - Pressure = Thrust / Area
 $P = \frac{F}{A}$

4) pressure unit - S.I → Newton / meter² = Pascal = Pascal = (Pa)

* pressure in fluids

pressure on liquids and gas walls contains pressure on base in all direction.

5) Atmospheric pressure

- pressure exerted by gas
- It is due to collision of gas molecule.
- force exerted on unit surface area by the weight of air.

- It is depend on ht. from the sea level.
- At sea level atmos. press: 10⁵ Pa
- * Liquid pressure
- Independent of size & shape.
- depend upon ht., depth, density
- depth ↑: L.p. ↑
- * Buoyant force / upthrust
- upward force.
- exerted by water.
- also called upthrust force.
- Buoyant force ↑ = vol. of obj ↑
- Density of liq ↑ = B.o.f. ↑
- If buoyant F ↑ than wt → object floats
- " " ↓ " → sinks
- " " = " - Object floats in middle.

ht ↑

But it more

But it more

But it more

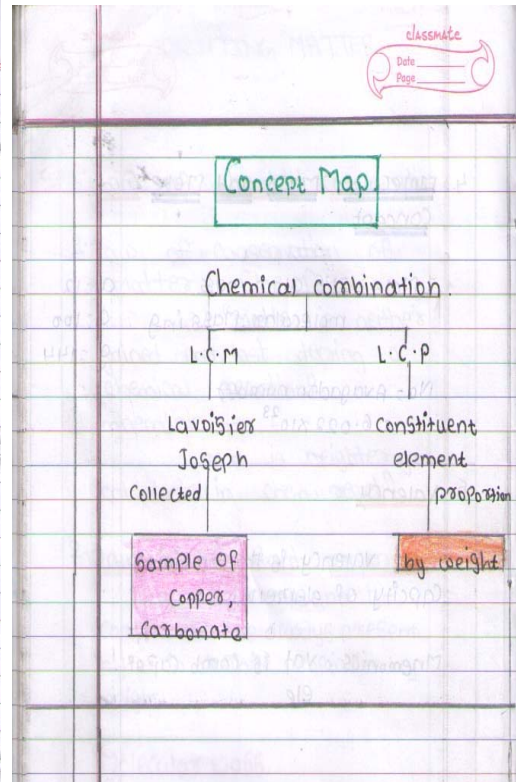
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4.4. Law of Chemical Combination

4. Law of conservation of matter (L.C.M)
"Matter is neither gained nor lost during a chemical reaction".
mnemonic -
mat is neither gain nor lost in chem. react.

2. Law of constant proportion
In a compound the constituent are always present by definite proportion by weight.

Molecular Mass.
The sum of atomic masses of the atom present in a given molecule is molecular mass of substance.



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Lesson No. 8.
Highway to Health.

8.1 we should have
Healthy - H F L
 habit food Lifestyle

Defⁿ by WHO.
Health is a state of complete physical, mental, social well being of person and not just absence of diseases.

Health aspects
Physical Mental Social

8.2

Physical Mental
Personal
↙ ↘
Environmental Social
↔
Integrative
↔
Economic

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8.1.5 Community Health

• Community health ↔ personal health

Environmental factors Economic factors

8.1.4 Factors essential for good health

a) Personal health and public cleanliness.
e.g. Personal health.

Not to spit Don't throw
road garbage.

b) Health, economic and social factors

**HEALTH HAS DECLARED A
FUNDAMENTAL HUMAN RIGHT**

7 APRIL
WORLD HEALTH DAY

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8.2 DISEASE
Disease as the word suggests
DIS-EASE
'deprate from health'

8.2.1 Symptoms and signs of diseases.

• Symptoms.

Symptoms	diseases
different	same.

• Signs.

Signs	diseases
different	different.

8.2.2 Types of diseases.

A) Chronic disease
B) Acute disease.

a) Chronic disease.
chronic disease last for long time called chronic disease.
e.g. diabetes, tuberculosis

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b) Acute disease
Acute disease last for long time called acute disease.
e.g. Common Cold.

Type of disease

Chronic disease e.g. diabetes, tuberculosis	Acute disease e.g. Common Cold
--	-----------------------------------

ii Types based on.

A) Communicable disease.
Disease which cause by infectious or pathogen called communicable disease.

B) Non-communicable disease.
Disease which caused by internal, non-infectious reason called non-communicable disease.

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Type based on.

Communicable cause by Infectious, pathogens e.g. Influenza, dysentery	Non-communicable caused by internal non-infectious. e.g. night blindness degenerative.
---	--

8.2.4 Means of spread disease.
An infectious disease spreads through air, water, food or by vectors and through sexual contact.

Spread of disease

air, water food	vectors & Sexual contact
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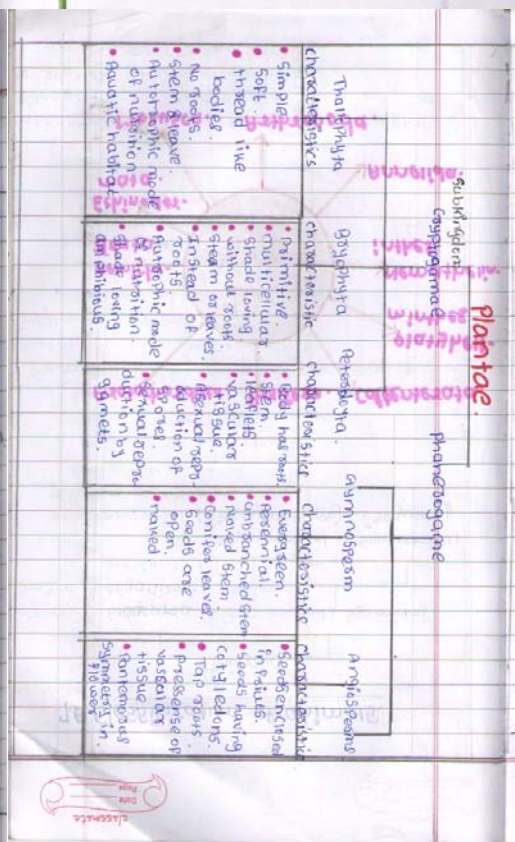
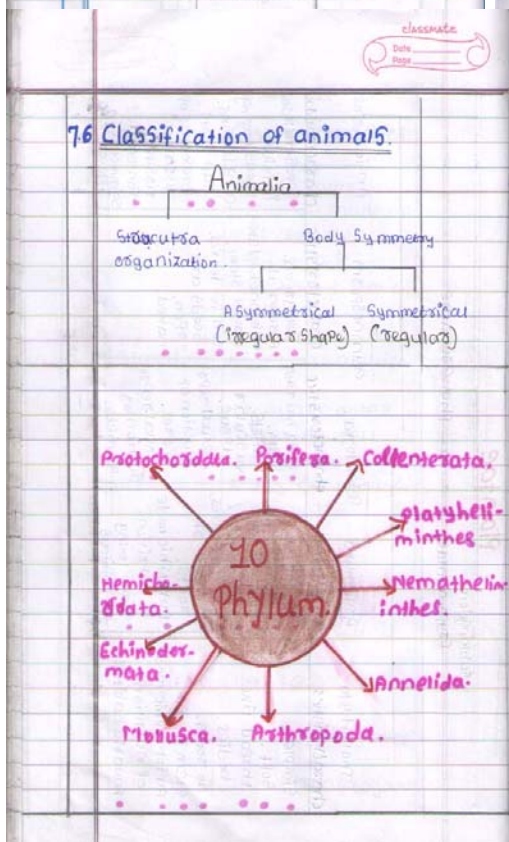
8.4 Some Infectious Diseases.

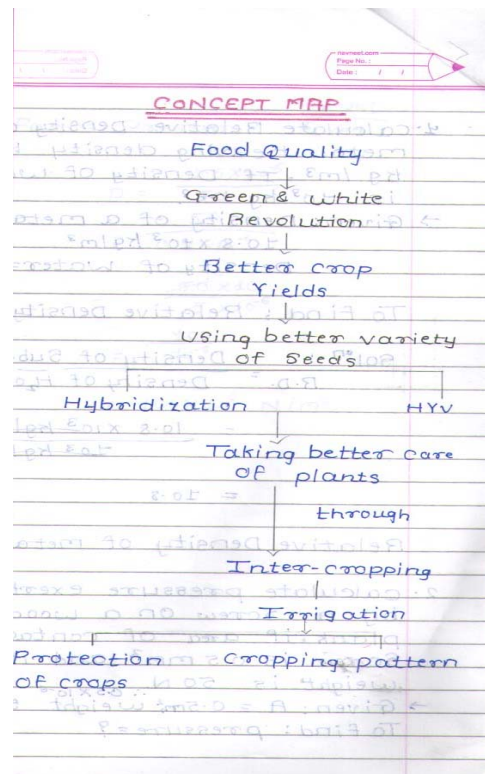
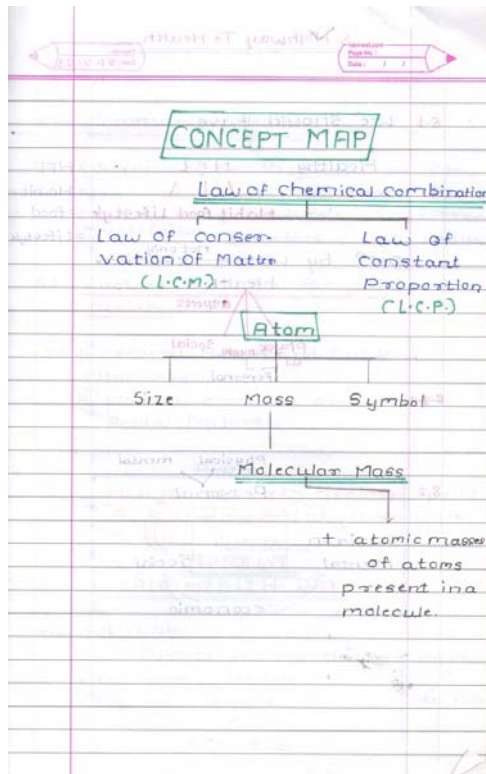
8.4.1 Bacterial diseases.

No.	Bacterial diseases	Signs & Symptoms	prevention.
1.	Tuberculosis	1] Bad cough. 2] Weight loss. 3] Fever. 4] chills. 5] by coughing blood or mucus.	i] BCG vaccine. ii] cover mouth while coughing & sneezing. iii] use spittoon containing hot or germicide for spitting.
2.	Typhoid.	i] loss of appetite. ii] abdominal pain. iii] headache. iv] body ache. v] nausea. vi] rash on stomach. vii] diarrhoea.	i] about clean and safe drinking. ii] vaccination (for 3 years)

No.	Bacterial diseases	Signs & Symptoms	Prevention
3]	Polio myelitis	i] Fever ii] fatigue iii] headache iv] vomiting v] stiffness in neck vi] pain in limbs vii] permanent paralysis limb	i] oral polio vaccine
4]	Aids	i] weakened immune system ii] lymphoma of brain iii] High fever	i] Avoid sexual contact with person using and needle ii] use disposable razors in the shops, sharing the tooth brush iii] ensure that HIV

No.	viral diseases	Signs & Symptoms	Prevention
1]	Hepatitis	i] Jaundice ii] dark yellow urine iii] extreme fatigue iv] nausea v] vomiting vi] abdominal pain vii] loss appetite viii] w-c. colored stool	i] vaccination (available A & B) ii] good hygiene iii] wash hand thoroughly using toilet before eating iv] blood should be screened for absence of hepatitis B
2]	Rabies	i] headache ii] fever iii] depression iv] loss appetite v] itching (sometimes) vi] pain at the site of bite viii] hyper salivation	i] vaccination ii] cleaning the site of wound with soap & water iii] vaccination of pets





APPENDIX P

Feedback Given By School Teachers

Date 18/3/13

In the 9th standard, you taught 'science' subject very sincerely and with a different method for your 'Project'. The students experienced a positive change. They tried to respond you sincerely. Many congratulations from our 'school' for your hardwork.



Shri Shende

18/3/13

Madam,
SaniKa Rathod taught science subject Regularly from 2nd January 2013 to 19th March 2013. Her subject knowledge was very good. She used science aids wherever necessary. Students experienced positive. All students & their parents gave good reply to Madam.



सनीका राठोड
श्री. राठोड

APPENDIX Q 1

Format Of Feedback Form For Parents And Students

पालकांचे नाव :- _____ व्यवसाय :- _____
विद्यार्थ्यांचे नांव :- _____
पत्ता :- _____

पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ?
असल्यास कोणता बदल झाला ?

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास
कशाप्रकारे उपयोग झाला ?

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

विद्यार्थ्यांची सही

APPENDIX Q 2

Feedback given by parents and students

पालकांचे नाव :- स्त्रुयकांत वामन लाडिक व्यवसाय :- लोकरी
 विद्यार्थ्यांचे नाव :- सागर स्त्रुयकांत लाडिक
 पत्ता :- अक्षय क्लासिक फ्लॉर नं. ९९, सई नं. ५७ आशारनगर
 पालकांसाठी :- वाजपेडी पुणे - ४०

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ?
 असल्यास कोणता बदल झाला ?

सुद्धा उपक्रमादरम्यान माझ्या पाल्यामध्ये बदल घडून आला. मनुक
 तो शाळा रोज सकाळी लवकर घडून अभ्यास करतो.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास
 कशाप्रकारे उपयोग झाला ?

या उपक्रमादरम्यान माझ्या पाल्याच्या प्राविण्य वाढविण्यासाठी उपयोग झाला
 या उपक्रमातून माझा पाल्य सुद्धा विषयावरून स्वतःचा उत्तर
 देण्यास शिकतो.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

या उपक्रमातून माझ्या पाल्यामध्ये अभ्यासा विषयी व प्रविण्यबद्दल
 अभिप्राय देण्यास मदत झाली आहे.

पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

→ या उपक्रमातून माझ्यात आपण सुधारणा झाली. हा उपक्रम
 वर्षानुवर्षे चालवताना पारिते या उपक्रमातून या परिघेत मला
 चांगले सिके पडले. माझे संसारी सुधारले. संसारी बघताना
 अर्थी फार लागते.

विद्यार्थ्यांची सही

पालकांचे नाव :- सा. विद्यालोक दिपक दळवी व्यवसाय :- लोकरी
 विद्यार्थ्यांचे नाव :- कु. लेख दिपक दळवी
 पत्ता :- अमलीनगर - ५/१५-७२/५ वाजपेडी - पुणे - ४०
 पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ?
 असल्यास कोणता बदल झाला ?

होय.
 अद्ययास एकत्रिते करू लागली. विद्यार्थ्यांची गोडी वाढली.
 अभ्यासाचा उत्साह झर झाला.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास
 कशाप्रकारे उपयोग झाला ?

होय.
 एकत्रित, सवात, पाठांतर, विषय समजून घेण्याची सवय येऊन
 विषयांमध्ये प्राविण्य मिळू लागले.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

अतिशय चांगला उपक्रम आहे. विद्यार्थ्यांचा उत्साह
 वाढताना दिसतो. विद्यार्थ्यांना अभ्यासाची
 गोडी वाढते.

पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

अभ्यासाच्या ज्या techniques शिकवण्यातून अचूक विषय
 सोपे वाटू लागले. प्रश्नांची उत्तरे लेखात देणे सोपे वाटू लागले.
 अचूक विषयांच्या मार्कित प्रगती झाली. प्रभावता वाढली.

विद्यार्थ्यांची सही

पालकांचे नाव :- साफ़ती अक्षमण नेबेफ़र व्यवसाय :- नोकरी
 विद्यार्थ्यांचे नांव :- पुता साफ़ती नेबेफ़र
 पता :- अहमदनगर कोटवा (बू) पुणे - ४८

पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ? असल्यास कोणता बदल झाला ?

होय :- शरीरक्रीडा सामान्य विज्ञानमध्ये चांगली प्रगती झाली आहे.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास कशाप्रकारे उपयोग झाला ?

होय :- सामान्य विज्ञानमध्ये अकार वाचन-पांगळे झाले आहे.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

माझे मत चांगले आहे. शिक्षकांचे सगळेच वाढवण्यास मदत झाले आहे. दोन महिन्यात विद्यार्थ्यांमध्ये हा अभ्यासात चांगले बदल घडून आले.

पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

या उपक्रमामुळे अभ्यासाच्या वेगवेगळ्या पद्धती सामल्या. या पद्धतीमुळे जास्तीत जास्त पाठाने कमी वेळात होण्यास उपयुक्त असणे आयडिया दिल्या गेल्या. यामुळे कमी मर्यादा वेगाने वाढ झाली. यामुळे आमचा योग्य फायदा झाला. वेळेच्या नियोजनामुळे अभ्यासाचा अधिक बर्बाद होण्या गेला.

विद्यार्थ्यांची सही

पालकांचे नाव :- श्री राजेश बोधराव तांडे व्यवसाय :- नोकरी
 विद्यार्थ्यांचे नांव :- कु. रश्मी राजेश तांडे
 पता :- कपिल तार कोटवा (बू) पुणे ४८

पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ? असल्यास कोणता बदल झाला ?

होय. वेळेवर अभ्यास करते. व दररोज अभ्यास करते.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास कशाप्रकारे उपयोग झाला ?

होय. अभ्यासात प्रगती झाली. मार्कित वाढ झाली. पाठाने चांगली व लक्षात वेळेच्याची क्षमता वाढली.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

या उपक्रमामुळे माझ्या पाल्यास अरुंधत फारदा झाला. दररोज अभ्यास करायची सवय लागली.

पालकांची सही

पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

या उपक्रमामुळे अभ्यासाच्या वेगवेगळ्या पद्धती सामल्या. या पद्धतीमुळे जास्तीत जास्त पाठाने कमी वेळात होण्यास उपयुक्त असणे आयडिया दिल्या गेल्या. यामुळे मार्कितमध्ये अधिक सुधारणा झाली. सारी आयडिया या उपक्रमाचा मला अधिकधिक फायदा होईल याची मला खात्री आहे.

विद्यार्थ्यांची सही

विद्यार्थ्यांची सही

पालकांचे नाव :- चतुर्था सि भगतगोड व्यवसाय :- चारण
 विद्यार्थ्यांचे नाव :- अश्विनी दत्तात्रय हसनके
 पता :- अश्विनी दत्तात्रय हसनके
धरत १३४९ गल्ली नं. ६, शिवरकर मार्ग, अहमदनगर, महाराष्ट्र
 पालकांसाठी :- अश्विनी दत्तात्रय नगर वामणी पुणे ४०

१. या उपक्रमावरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये कोही बदल घडून आला आहे का ? असल्यास कोणता बदल झाला ?

अभ्यासाचा स्वभाव मध्ये फरक आला आहे. पूर्वी पण असा जास्त
उपयुक्त ठरत असे. दुसरे चाचणी मध्ये मी हे न्याय्य पण आहे.
पूर्वी पण असा दुसरा पण आहे.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास कशाप्रकारे उपयोग झाला ?

या उपक्रमाने पाल्याचे प्राविण्य वाढले आहे. पूर्वी पण असा
असा उपयोग पण असा पण आहे.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

नाही पण असा असा उपक्रम आहे. पण असा

पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

हा उपक्रम जेव्हा पहिल्यांदा घेता तेव्हा जेव्हा जेव्हा
ते जाणवतात आहे, पण जेव्हा जेव्हा असा असा
फरक, चार्ट पॅपर साधारणपणे पण देण्यात आल्या तेव्हा मला
हे खूप जाणवले. तुम्ही शाळाच्या पद्धत, व तुम्ही शाळा
ही मी राहिले शाळा असा असा असा असा

विद्यार्थ्यांची सही

(Signature)

पालकांचे नाव :- अश्विनी दत्तात्रय हसनके व्यवसाय :- चारण
 विद्यार्थ्यांचे नाव :- अश्विनी दत्तात्रय हसनके
 पता :- अश्विनी दत्तात्रय नगर वामणी पुणे ४०

पालकांसाठी :-

१. या उपक्रमावरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये कोही बदल घडून आला आहे का ? असल्यास कोणता बदल झाला ?

आपली पाल्या अश्विनी दत्तात्रय हसनके ही केवळ घरी असा
नवेली करत पण, आपण सर्व वैयक्तिक शिक्षणाच्या
मुळे तिचे शिक्षण आणखी करत आहे व तीला या शिक्षण
आणखी आणखी आणखी आणखी आणखी आणखी आहे.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास कशाप्रकारे उपयोग झाला ?

ही आम्हाला पाल्याची प्राविण्य वाढविण्यासाठी उपयोग झाला
आम्हाला द्वारे तीला आणखी स्वयं लावली आहे.
आम्हाला व आपल्या आघारे तिचे शिक्षण आहे व त्या परिक्षेत
आणखी आणखी आणखी आणखी आणखी आहे.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

आम्हाला असे आहे की आपली आपण आहे, की आपल्या
मुळे आपली प्राविण्य वाढविण्यासाठी आहे व तुम्ही
आपली पाल्या व आपण आपण तुम्ही तुम्ही आपण आहे.
व आपण आपण तुम्ही तुम्ही आहे व आपण आपण आहे.
बद्दल मी आणखी आपण आपण आहे.

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

आपल्या मुळे आपण आपण आहे, की आपल्या
मुळे आपण आपण आहे, की आपल्या
मुळे आपण आपण आहे, की आपल्या
मुळे आपण आपण आहे, की आपल्या
मुळे आपण आपण आहे, की आपल्या

आपण आपण आहे, की आपल्या
मुळे आपण आपण आहे, की आपल्या
मुळे आपण आपण आहे, की आपल्या
मुळे आपण आपण आहे, की आपल्या
मुळे आपण आपण आहे, की आपल्या

आपली सही
 अश्विनी हसनके

पालकांचे नाव :- शुद्ध्या गणपार शेख व्यवसाय :- घरकाम
 विद्यार्थ्यांचे नाव :- लतीत गणपार शेख
 पत्ता :- एम. आर. पी. एफ. वृत्त 2, वानवडी फ्लॉ 40

पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ? असल्यास कोणता बदल झाला ?

ही निश्चितच बदल झाला आहे, तो अभिप्रेक्षा जास्त वेळ व वेळापत्रकांनुसार अभ्यास करतो.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास कशाप्रकारे उपयोग झाला ?

त्याने तुम्ही संश्लेषित्याप्रमाणे सर्व घात्या अभ्यास व शितीप्रकार (चाहे) बनविल्याने त्याचा आश्चर्या, संश्लेष, व्याख्या हे चांगलेच पाठ झाले.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

हा उपक्रम घेण्यामुळे आपला उपदेश अत्यंतच. या उपक्रमाचे मुलांमध्ये अभ्यासाची गोडी निर्माण झाली.

S. Shaikh
पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

मी अद्या जेवढा अभ्यास त्या वेळेत करत होतो. त्यापेक्षा आधीच जास्त अभ्यास मी या उपक्रमात करावा लागला. शिवाय त्याबद्दल मी मी साक्षात्कार घेतो सापार माकतो.

Anees
विद्यार्थ्यांची सही

पालकांचे नाव :- श्री. शंभूकिंदू सराशिव शिंदे व्यवसाय :- नोकरी

विद्यार्थ्यांचे नाव :- शुद्ध्या शंभूकिंदू शिंदे

पत्ता :- सी. ६३/२ तात्या निवास, के. ए. री. म. ग. व. म. व. डी. पुणे - ४११०२०

पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ? असल्यास कोणता बदल झाला ?

मी सर्वप्रथम तुमचे आभारी आहे, आपल्या या चांगल्या उपक्रमांमुळे प्राण्यां मुळाची अभ्यासाची सवय लागली, त्याचा परिणाम प्रगतीप्रकारे मध्ये दिसून आला नसून त्याच्या रोजच्या सवयी सुध्दा बदलत आरिने.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास कशाप्रकारे उपयोग झाला ?

होम नवकीतम आला आहे त्याला पुस्तकांमधील व्याख्या बनविणे, नविन-नविन तक्ते करणे बनवायचे व ते करणे म्हणून वेळोवेळी मी मी चांगला शिकला आहे. रोजच्या रोज वेळेवर अभ्यास व आठवड्याचे वेळापत्रक बनवतो.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

हा उपक्रम आपला अनिशय चांगला प्रकारे राबविण्याबद्दल आपला आभारी आहे, भविष्यात आपल्या रसाला, रसाला व दशाहा याचा नवकीतम फायदा, हेरिंक व चांगली यशास्वी मुळे तयार होऊन घेण्यासाठी पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

या उपक्रमांमुळे मला आज अभ्यासांमध्ये चांगलीच मदत झाली आहे. ही सतत मी दृढतीत सुद्धा पालविले. वेळोवेळी मंड्या सुई. वडीलच नाव मी शोध करू शकतो. जेव्हा तुम्ही आम्हाला शुद्ध्या चांगल्या अभ्यासाचा सवयी लावल्या त्याबद्दल मी तुमचे पुढा राकदा धन्यवाद आता अभिनंदन करतो.

3/3
विद्यार्थ्यांची सही

पालकांचे नाव :- विश्वास नारायण पारीस व्यवसाय :- नोकरी (पोस्टि)

विद्यार्थ्यांचे नाव :- अशोक विश्वास पारीस

पत्ता :- शिंदेकर गार्डन जवळ, आदर्श नगर, वानवडी पुणे-४०.

पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ? असल्यास कोणता बदल झाला ?

होय. हा उपक्रम सुरु झाल्यापासून मला माझ्या पाल्याच्या अभ्यासाच्या सवयीमध्ये काही बदल जाणवले. मला त्याच्या अभ्यासाच्या वेळेमध्ये नियमितता दिसून आली. त्याचबरोबर, त्याची पाठाने करपाची उर्मी वाढली.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास कशाप्रकारे उपयोग झाला ?

होय. कारण तुम्ही द्यालेल्या परित्या चाचणी परीक्षेमध्ये माझ्या पाल्याला २६ गुण मिळाले. पण नंतर तुम्ही सांगितलेली सत्रे मला त्यानुसार अभ्यास केल्यावर त्याला दुसऱ्या परीक्षेत ५० गुण मिळाले. तुम्ही सांगितल्यानुसार अभ्यास केल्यामुळे त्याला अभ्यास

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा. कारण खूप सोपे झाले आहे.

हा उपक्रम शक्यतेमुळे माझ्या पाल्याला अभ्यासात खूप रस वाढू लागला आहे. हा उपक्रमामध्ये शिकवलेल्या सर्व बाब्यांमध्ये पद्धती खूप फायदेशीर आहेत. अगदी अनेक उपक्रमांमध्ये मला माझ्या पाल्याला शक्यता आवडेल. पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

मला हा उपक्रम खूप मजेदार वाटला. या उपक्रमांमुळे मी अभ्यास करपाच्या विविध पद्धती शिकलो. तसेच, मला स्वतःचा अभ्यासाची पद्धत तयार करपाची कल्पनाही मिळाली. मला स्वतः महेत्वाचे सुद्धे तयार करायला शिकलो. मी आता, मी स्वतःची उत्तरे तयार करून लिहू शकतो. मला अगदी अनेक उपक्रमांमध्ये शक्यता वाचेल.

विद्यार्थ्यांची सही

पालकांचे नाव :- शाम पुकाराम चव्हाण व्यवसाय :- बांधकाम

विद्यार्थ्यांचे नाव :- सुभार शाम चव्हाण

पत्ता :- वानवडी गावधी, २२२, पुणे ४०.

पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ? असल्यास कोणता बदल झाला ?

मुलेमध्ये रंगणे व संगीत अगदी खूप टाईम देणे म्हणून अभ्यास करत आहे. अभ्यास करपाची पद्धती वाढलेली आहे.

२. या उपक्रमाचा आपल्या पाल्याचे प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास कशाप्रकारे उपयोग झाला ?

एरफू चाचणी व मध्ये मॉक वाढलेली आहे. अगदी आता सोमवेळी मध्ये नापासचे होय. पण आता मॉकमध्ये खूप फरक पडलेला आहे.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

अभिप्राय मिष्टान्नासाठी खरोखर शक्य नाही. यापुढेच असा उपक्रम शाळात कधीच राबवण्यात आला नाही. पण असा उपक्रम शाळात राबवण्यात येताना ह्या तऱ्हेचे मुलांमध्ये वाढविण्यात येणे अभ्यासात तसे पालकांची सही झाली.

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

तीनच माझी बुद्धिमत्ता तुमच्या मुळे वाढली. हा उपक्रमाने तुमच्या मुळे माझ्या अभ्यासात व पेपर लिहण्याच्या पध्दतीत खूप सुधारणा आली. तुमच्या मुळे मला अभ्यासाची वाढलेली मनाची माझी मूळ उर्जा तुम्ही या व अभ्यासही तयार होणाला. अगदी माझ्या पालकांदांतुमची अगदी खूप वाढली.

विद्यार्थ्यांची सही

10/10/2020

पालकांचे नाव :- श्री अनिल दिवाकर लिमारे व्यवसाय :- जोकरी

विद्यार्थ्यांचे नाव :- कु. सिद्धी अनिल दिवाकर

पत्ता :- २२३/१ वाजपती गण, अमरावती जिल्हा

पुणे - ४११०२०

पालकांसाठी :-

१. या उपक्रमादरम्यान आपल्या पाल्याच्या अभ्यास सवयींमध्ये काही बदल घडून आला आहे का ?

असल्यास कोणता बदल झाला ?

होय. या उपक्रमाद्वारे ती कोणत्या वेळी व कुठे अभ्यास करत होती. या उपक्रमादरम्यान ती इच्छित ठिकाणी व ठराविक वेळी जाऊ लागली आहे.

२. या उपक्रमाचा आपल्या पाल्या व प्राविण्य वाढविण्यासाठी उपयोग झाला का ? असल्यास

कराप्रकारे उपयोग झाला ?

होय. माताची सहाय्यता करून अभ्यासात सुकृता आणणे ठराविक विषय ठराविक वेळी अभ्यासले. घरे. शाळातल्या कामातून वेळी. या उपक्रमाद्वारे ती अभ्यासात प्रगती होण्यास सक्षम झाली.

३. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

श्रेष्ठ शिक्षण मिळाल्यास शिक्षार्थी स्वतःची प्रगती करू शकता. वेळाने शिक्षण करून अभ्यास कोणत्या पद्धतीने करायला याचे मार्गदर्शन या उपक्रमाद्वारे शिक्षकांनी मिळाले आहे.

पालकांची सही

विद्यार्थ्यांसाठी :-

१. या उपक्रमाबद्दल आपला अभिप्राय लिहा.

ह्या उपक्रमातून माझा अभ्यास करायला सगळी व्युत्पत्ती मिळाली. अभ्यास करायला व कोठल्या पद्धतीने वापरून माझा अभ्यास करायला हे द्यातून समजले. ह्या उपक्रमातून माझा अभ्यासाला प्रकृत जीवन शिस्त

श्री. लिमारे
विद्यार्थ्यांची सही

निर्माता व्हावी. वेळीचे निरोज करून विषयांचे वेळापत्रक करून घ्यायला व त्याच्यानुसार कामाच्या अभ्यास करायला हे समजले. शिक्षकांच्या आज्ञेला, संध्या, संध्या हे चाहे घ्यायला परिश्रम मिळता व्युत्पत्ती लक्षात घेता समजून घ्यायला येते. हे तंत्र माझ्या शिक्षकांच्यातून माझ्या पुढच्या उद्यत्तांमधूनही ह्या तंत्राचा उपयोग होणार आहे. ह्या उपक्रमातून माझा अभ्यास संपूर्ण झाले. पुढील वेळी अभ्यास करणे. संध्या संध्या ही कामातून ह्या वेळीच्या, आपल्यांच्याच काय जायला होणार? पण जसे हे तंत्र शिक्षकांच्यातून घ्यायला व्हावी, तसे ही त्या शिक्षकांच्यातून माझ्या संध्या संध्या करून घ्यायला व हे तंत्र वापरून माझा अभ्यास करू शकता. ह्या तंत्रातून माझा अभ्यास करायला लक्षात घेता माझ्या अभ्यास संध्या होणार आहे.

ह्यातून, ह्या उपक्रमातून माझा अभ्यास करायला होणार आहे!

APPENDIX R

S.S.C. Results from 2010 to 2013

1/29/2015

Maharashtra State Board of Secondary and Higher Secondary Education

MAHARASHTRA STATE BOARD OF SECONDARY & HIGHER SECONDARY EDUCATION, PUNE - 5

DIVISION AND SEX WISE PERFORMANCE OF FRESH CANDIDATES

S.S.C. EXAM OF MARCH - 2010

SR	DIVISION	REGISTERED			APPEARED			PASSED			PASSED PERCENTAGE		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	PUNE	124146	104083	228229	123848	103843	227691	109682	93484	203166	88.56	90.02	89.23
2	NAGPUR	87392	89487	176879	86919	89253	176172	71056	75313	146369	81.75	84.38	83.08
3	AURANGABAD	82448	61954	144402	82067	61734	143801	59972	47824	107796	73.08	77.47	74.96
4	MUMBAI	153752	137710	291462	153445	137492	290937	136764	123697	260461	89.13	89.97	89.52
5	KOLHAPUR	96181	79708	175889	95866	79512	175378	82084	69217	151301	85.62	87.05	86.27
6	AMARAVATI	82148	72724	154872	81888	72573	154461	71801	65758	137559	87.68	90.61	89.06
7	NASIK	94650	75997	170647	94508	75922	170430	81924	68044	149968	86.68	89.62	87.99
8	LATUR	56524	44297	100821	56187	44123	100310	25374	21469	46843	45.16	48.66	46.70
OVERALL :		777241	665960	1443201	774728	664452	1439180	638657	564806	1203463	82.44	85.00	83.62

DIVISION AND SEX WISE PERFORMANCE OF REPEATER CANDIDATES

S.S.C. EXAM OF MARCH - 2010

SR	DIVISION	REGISTERED			APPEARED			PASSED			PASSED PERCENTAGE		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	PUNE	18448	6973	25421	18221	6927	25148	6263	2802	9065	34.37	40.45	36.05
2	NAGPUR	14318	9902	24220	14262	9882	24144	6618	4537	11155	46.40	45.91	46.20
3	AURANGABAD	8051	2522	10573	7985	2506	10491	2063	740	2803	25.84	29.53	26.72
4	MUMBAI	36442	20543	56985	36248	20447	56695	13247	8449	21696	36.55	41.32	38.27
5	KOLHAPUR	16772	6732	23504	16703	6718	23421	4953	2293	7246	29.65	34.13	30.94
6	AMARAVATI	11509	4821	16330	11428	4791	16219	6537	2959	9496	57.20	61.76	58.55
7	NASIK	10823	3691	14514	10743	3667	14410	4997	1971	6968	46.51	53.75	48.36
8	LATUR	5223	2424	7647	5145	2405	7550	695	442	1137	13.51	18.38	15.06
OVERALL :		121586	57608	179194	120735	57343	178078	45373	24193	69566	37.58	42.19	39.06

MAHARASHTRA STATE BOARD OF SECONDARY & HIGHER SECONDARY EDUCATION, PUNE - 5
DIVISION AND SEX WISE PERFORMANCE OF CANDIDATES (FRESH)
S.S.C. EXAM OF MARCH 2011

SR	DIVISION	REGISTERED			APPEARED			PASSED			PASSED PERCENTAGE		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	PUNE	128002	107312	235314	127741	107078	234819	108478	93247	201725	84.92	87.08	85.91
2	NAGPUR	87418	89768	177186	87020	89530	176550	63026	67430	130456	72.43	75.32	73.89
3	AURANGABAD	82937	62709	145646	82502	62458	144960	46840	37968	84808	56.77	60.79	58.50
4	MUMBAI	158915	144512	303427	158598	144295	302893	138309	128037	266346	87.21	88.73	87.93
5	KOLHAPUR	98126	81384	179510	97888	81181	179069	83209	70337	153546	85.00	86.64	85.75
6	AMARAVATI	81406	72215	153621	80956	71977	152933	34899	34639	69538	43.11	48.13	45.47
7	NASIK	97381	78523	175904	97196	78430	175626	78922	66309	145231	81.20	84.55	82.69
8	LATUR	52287	42643	94930	51715	42382	94097	32323	27268	59591	62.50	64.34	63.33
OVERALL :		786472	679066	1465538	783616	677331	1460947	586006	525235	1111241	74.78	77.54	76.06

DIVISION AND SEX WISE PERFORMANCE OF CANDIDATES (REPEATER)
S.S.C. EXAM OF MARCH 2011

SR	DIVISION	REGISTERED			APPEARED			PASSED			PASSED PERCENTAGE		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	PUNE	18204	7152	25356	18001	7102	25103	4820	2412	7232	26.78	33.96	28.81
2	NAGPUR	12425	8053	20478	12385	8031	20416	4259	2525	6784	34.39	31.44	33.23
3	AURANGABAD	9631	3846	13477	9590	3835	13425	1519	776	2295	15.84	20.23	17.09
4	MUMBAI	33599	18857	52456	33475	18803	52278	10909	7003	17912	32.59	37.24	34.26
5	KOLHAPUR	14028	5364	19392	13972	5357	19329	3208	1485	4693	22.96	27.72	24.28
6	AMARAVATI	8210	3193	11403	8153	3179	11332	1091	529	1620	13.38	16.64	14.30
7	NASIK	10214	3583	13797	10178	3574	13752	3599	1349	4948	35.36	37.74	35.98
8	LATUR	10889	5318	16207	10855	5311	16166	1966	1216	3182	18.11	22.90	19.68
OVERALL :		117200	55366	172566	116609	55192	171801	31371	17295	48666	26.90	31.34	28.33

MAHARASHTRA STATE BOARD OF SECONDARY & HIGHER SECONDARY EDUCATION , PUNE - 5
DIVISION AND SEX WISE PERFORMANCE OF CANDIDATES (FRESH)
S.S.C. EXAM OF MARCH 2012

SR	DIVISION	REGISTERED			APPEARED			PASSED			PASSED PERCENTAGE		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	PUNE	131208	110030	241238	130791	109689	240480	117606	100527	218133	89.92	91.65	90.71
2	NAGPUR	89539	90938	180477	89027	90654	179681	64147	69800	133947	72.05	77.00	74.55
3	AURANGABAD	80707	60329	141036	80026	59978	140004	55649	44252	99901	69.54	73.78	71.36
4	MUMBAI	163305	148591	311896	162978	148358	311336	143688	133213	276901	88.16	89.79	88.94
5	KOLHAPUR	78470	63449	141919	78314	63306	141620	69240	57045	126285	88.41	90.11	89.17
6	AMARAVATI	80902	73728	154630	80337	73443	153780	54183	53572	107755	67.44	72.94	70.07
7	NASIK	100516	80638	181154	100283	80496	180779	75421	63901	139322	75.21	79.38	77.07
8	LATUR	53082	42865	95947	52546	42626	95172	35559	30116	65675	67.67	70.65	69.01
9	KONKAN	22296	20572	42868	22284	20564	42848	20975	19276	40251	94.13	93.74	93.94
OVERALL :		800025	691140	1491165	796586	689114	1485700	636468	571702	1208170	79.90	82.96	81.32

DIVISION AND SEX WISE PERFORMANCE OF CANDIDATES (REPEATER)
S.S.C. EXAM OF MARCH 2012

SR	DIVISION	REGISTERED			APPEARED			PASSED			PASSED PERCENTAGE		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	PUNE	19652	7845	27497	19494	7794	27288	6574	3209	9783	33.72	41.17	35.85
2	NAGPUR	15283	10822	26105	15209	10793	26002	4409	3698	8107	28.99	34.26	31.18
3	AURANGABAD	14960	6514	21474	14930	6500	21430	2015	1039	3054	13.50	15.98	14.25
4	MUMBAI	39264	21653	60917	39045	21574	60619	14376	8722	23098	36.82	40.43	38.10
5	KOLHAPUR	11598	4318	15916	11567	4311	15878	3119	1355	4474	26.96	31.43	28.18
6	AMARAVATI	19427	11849	31276	19384	11838	31222	5929	4525	10454	30.59	38.22	33.48
7	NASIK	12255	4319	16574	12191	4293	16484	3377	1644	5021	27.70	38.29	30.46
8	LATUR	9301	4449	13750	9275	4438	13713	1393	823	2216	15.02	18.54	16.16
9	KONKAN	1606	829	2435	1590	824	2414	502	328	830	31.57	39.81	34.38
OVERALL :		143346	72598	215944	142685	72365	215050	41694	25343	67037	29.22	35.02	31.17

MAHARASHTRA STATE BOARD OF SECONDARY & HIGHER SECONDARY EDUCATION , PUNE
DIVISION AND SEX WISE PERFORMANCE OF CANDIDATES (FRESH)
S.S.C. EXAM OF MARCH 2013

SR	DIVISION	REGISTERED			APPEARED			PASSED			PASSED PERCENTAGE		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	PUNE	134148	112423	246571	133709	112057	245766	116463	100437	216900	87.10	89.63	88.25
2	NAGPUR	88421	88549	176970	87996	88304	176300	63046	67392	130438	71.65	76.32	73.99
3	AURANGABAD	82162	61162	143324	81666	60848	142514	65230	50466	115696	79.87	82.94	81.18
4	MUMBAI	162738	149759	312497	162429	149499	311928	143434	133919	277353	88.31	89.58	88.92
5	KOLHAPUR	78524	63633	142157	78384	63521	141905	70292	57929	128221	89.68	91.20	90.36
6	AMARAVATI	83244	76544	159788	82866	76329	159195	59902	58851	118753	72.29	77.10	74.60
7	NASIK	101919	82280	184199	101651	82135	183786	83513	70610	154123	82.16	85.97	83.86
8	LATUR	53849	43086	96935	53344	42860	96204	38759	32196	70955	72.66	75.12	73.75
9	KONKAN	21698	19996	41694	21690	19988	41678	20366	18723	39089	93.90	93.67	93.79
OVERALL :		806703	697432	1504135	803735	695541	1499276	661005	590523	1251528	82.24	84.90	83.48

DIVISION AND SEX WISE PERFORMANCE OF CANDIDATES (REPEATER)
S.S.C. EXAM OF MARCH 2013

SR	DIVISION	REGISTERED			APPEARED			PASSED			PASSED PERCENTAGE		
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1	PUNE	20360	7896	28256	20126	7831	27957	5470	2681	8151	27.18	34.24	29.16
2	NAGPUR	17542	12096	29638	17506	12080	29586	4725	3497	8222	26.99	28.95	27.79
3	AURANGABAD	15497	5892	21389	15468	5880	21348	3285	1530	4815	21.24	26.02	22.55
4	MUMBAI	44844	24004	68848	44621	23829	68450	14918	8733	23651	33.43	36.65	34.55
5	KOLHAPUR	10906	3608	14514	10863	3605	14468	2628	1036	3664	24.19	28.74	25.32
6	AMARAVATI	20929	10593	31522	20880	10575	31455	5242	2865	8107	25.11	27.09	25.77
7	NASIK	15923	6275	22198	15884	6263	22147	5755	2741	8496	36.23	43.76	38.36
8	LATUR	10437	4569	15006	10393	4557	14950	1875	899	2774	18.04	19.73	18.56
9	KONKAN	1552	727	2279	1536	722	2258	493	270	763	32.10	37.40	33.79
OVERALL :		157990	75660	233650	157277	75342	232619	44391	24252	68643	28.22	32.19	29.51

APPENDIX S

Annual family income data of the selected sample

सन २०१२-२०१३

श्री हरिभाऊ बळवंतराव गिरमे विद्यालय वानवडी पुणे-४११०४०

वर्गशिक्षकाचे नाव :- श्री गोरे विजय रामराव

इयत्ता - ९ वी

तुकडी - अ

Sr No	Reg No	Name Of Students	Caste	Annual Income	Gender
1	12087	Bhagale Sachin Malappa	Hindu-Mahar	60000	Boy
2	11556	Bhalshankar Rohit Anand	Hindu-Mahar	36000	Boy
3	11506	Kakade Ajay Ravindra	Hindu-Mahar	36000	Boy
4	11566	Kamble Shubham Vijay	Navboudhd	60000	Boy
5	11655	Pawar Tanay Waman	Bouddh	72000	Boy
6	12075	Pandagale Mukul Madhav	Navboudhd	36000	Boy
7	11548	Thorat Rahul Anil	Navboudhd	36000	Boy
8	11702	Waghmare Shubham Shivaji	Hindu-Mahar	60000	Boy
9	13306	Khandagale Swapnil Popat	Hindu-Matang	60000	Boy
10	11507	Hasnale Ashwini Dattatray	Hindu-Dhor	60000	Girl
11	11543	Kamble Ashlesh Tukaram	Hindu-Mahar	90000	Girl
12	11503	Shinde Neha Ganesh	Hindu-Dhor	50000	Girl
13	11562	Waghmare Shubhangi Buddhaji	Hindu-Mahar	80000	Girl
14	12629	Ransing Snehal Tanu	Hindu-Mahar	35000	Girl
15	12612	Tayade Rashmi Rajesh	Hindu-Mahar	50000	Girl
16	12432	Sarvade Amol Tatyaba	Hindu-Dhangar	90000	Boy
17	12051	Lengare Omkar Ramesh	Hindu-Dhangar	60000	Boy
18	11617	Shinde Mayur Dattatray	Nathpanthi Davari Gosavi	45000	Boy
19	11645	Barkade Udum Sanjay	Hindu-Dhangar	80000	Boy
20	12505	Khandekar Vitthal tabaji	Hindu-Dhangar	40000	Boy
21	12747	Naik Shrihari Laxman	Hindu-laman	40000	Boy
22	11590	pawar Jayashri Bhanudas	Hindu-Beldar	100000	Girl
23	11557	Bade Alka Dnyanoba	Hindu-Vanjari	95000	Girl
24	12628	Tamangol Dhanashri Dattu	Hindu-Dhangar	80000	Girl
25	12862	Biradar Karuna Dnyaneshwar	Hindu-Hatkar	42000	Girl
26	12973	Nerlekar Pooja Maruti	Hindu-Vadar	60000	Girl
27	11554	Arondekar Siddhesh Savalram	Hindu-Bhandari	70000	Boy
28	11575	Hole Kunal Somnath	Hindu-Mali	55000	Boy
29	11753	Kokare Ganesh Avinash	Hindu-Nhavi	75000	Boy
30	11642	Raut Rohan Shankar	Hindu-Mali	65000	Boy
31	11579	Sapkal Rohan Sampat	Hindu-Mali	85000	Boy
32	11733	Badgujar Vaibhav Vinayak	Hindu-Maratha	95000	Boy
33	11502	Bhagat Rahul Dattatray	Hindu-Maratha	110000	Boy
34	11821	Bhattachaud Guru Chenappa	Marathi Lingayat	45000	Boy
35	11565	Bhirud Dipesh Anil	Hindu-Leva Patil	60000	Boy
36	11763	Deshmukh Aadinath Suresh	Hindu-Maratha	42000	Boy
37	11768	Devasi Prakash Bhagaram	Hindu-Devasi	70000	Boy
38	11599	Jadhav Ashutosh Hanumant	Hindu-Maratha	110000	Boy
39	11546	Kadam Mahesh Vijay	Hindu-Maratha	60000	Boy
40	11654	More Omkar Satish	Hindu-Maratha	85000	Boy
41	11563	Naik Sagar Suryakant	Hindu-Komarpanth	80000	Boy
42	11553	Patil Omkar Vishwas	Hindu-Maratha	40000	Boy
43	11544	Patil Yash Bhau	Hindu-Maratha	95000	Boy
44	11505	Pawar Sandesh Santosh	Hindu-Maratha	80000	Boy
45	11551	Rokade Krushnaraj Jaysing	Hindu-Maratha	42000	Boy
46	11567	Shingate Prasad Dattatray	Hindu-Maratha	65000	Boy
47	11549	Shinde Shubham Shambhusinh	Hindu-Maratha	55000	Boy
48	11542	Shinde Santosh Vijay	Hindu-Maratha	75000	Boy
49	11558	Temgire Rohit Somnath	Hindu-Maratha	65000	Boy
50	11618	Thombare Ganesh Saudagar	Hindu-Maratha	85000	Boy
51	11773	Chavan Tushar Sham	Hindu-Maratha	75000	Boy
52	12677	Chavan Aniket Chavan	Hindu-Maratha	65000	Boy
53	12836	Sutar Virbhadranra Nagraj	Hindu-Panchal Sutar	90000	Boy
54	12667	Badhe Aditya Rajendra	Hindu-Mali	45000	Boy
55	12685	Ravale Abhishek Somnath	Hindu-Mali	80000	Boy
56	12682	Kedari Pratik Anil	Hindu-Mali	40000	Boy
57	12681	Sonar Niraj Hemant	Hindu-Sonar	45000	Boy

सन २०१२-२०१३

श्री हरिभाऊ बळवंतराव गिरमे विद्यालय वानवडी पुणे-४११०४०

वर्गशिक्षकाचे नाव :- श्री गोरे विजय रामराव

इयत्ता - ९ वी

तुकडी - अ

Sr No	Reg No	Name Of Students	Caste	Annual Income	Gender
58	12842	Bhosale Shashikant Pandurang	Hindu-Maratha	65000	Boy
59	12181	Dhongade Amol Tukaram	Hindu-Maratha	100000	Boy
60	13249	Jagtap Kiran Bharat	Hindu-Maratha	95000	Boy
61	13127	Patil Bhushan Tulshiram	Hindu-Kunbi Patil	80000	Boy
62	12341	Shaikh Nadeem Gafar	Muslim	90000	Boy
63	12755	Momin Akib Sayyad	Muslim	45000	Boy
64	11643	Gangadhare Rohan Suresh	Hindu-Telgu	50000	Boy
65	11504	Bhujbal Prajakta Gorakh	Hindu-Mali	70000	Girl
66	11631	Dalvi Neha Deepak	Hindu-Tilvan Teli	55000	Girl
67	11706	Jambhulkar Shraddha Sunil	Hindu-Mali	75000	Girl
68	11510	Kumbhar Tejaswini Kiran	Hindu-Kumbhar	95000	Girl
69	11545	Navale Shivani Balasaheb	Hindu-Mali	110000	Girl
70	11560	Shevate Rutuja Nitin	Hindu-Mali	45000	Girl
71	11587	Tilekar Pratiksha Ravindra	Hindu-Mali	60000	Girl
72	11552	Badhekar Megha Sambhaji	Hindu-Maratha	42000	Girl
73	11550	Marne Pooja Sandeep	Hindu-Maratha	70000	Girl
74	12633	Bhalekar Prachi Ashok	Hindu-Maratha	65000	Girl
75	12647	Khade Shivani Eknath	Hindu-Lonari	95000	Girl
76	12614	Nimgire Siddhi Arvind	Hindu-Lonari	70000	Girl
77	12219	Karne Snehal Dashrath	Hindu-Mali	55000	Girl
78	11549	Inamdar Fiza Shiraj	Muslim	75000	Girl
79	13141	Sayyad Muskan Tajuddin	Muslim	65000	Girl

(Signature)

HEAD MASTER
Shri. H. B. Girme Vidyalaya
Wanawadi, Pune-40.

(Signature)
वर्गशिक्षक
(विजय आर गोरे)



APPENDIX T PHOTOGRAPHS



Guest Lecture on Motivation



Felicitation of Guest Speaker Dr. Shobha Joshi
by the principal of the School Mr. Gawari



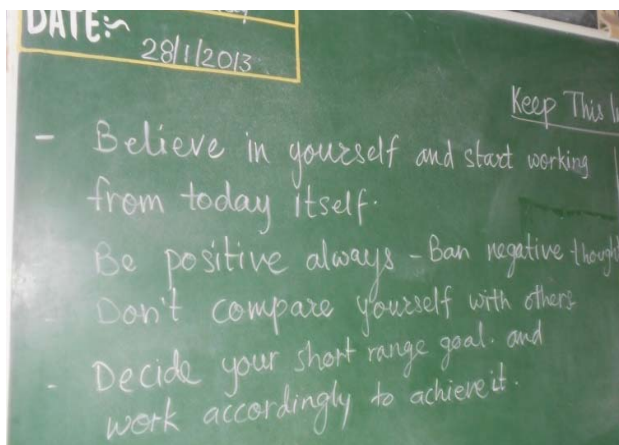
Students Meditating before study



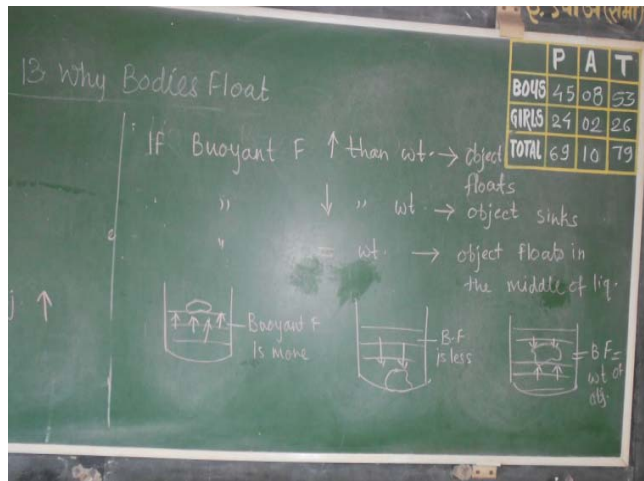
Students Meditating before study



Researcher teaching in the class



Explanation done with the use of blackboard



Explanation done with the use of blackboard



Students preparing charts



Explanation by researcher



Students preparing mnemonics



Teaching by researcher



Explanation by researcher



Interactions with students about preparation of chart



Distribution of chart papers by researcher



Clarification about student doubts by researcher

APPENDIX U
CERTIFICATE

<p>॥ सत्यम् शिवम् सुंदरम् ॥</p> <p>महात्मा फुले शिक्षण प्रसारक मंडळ, वानवडी, पुणे-४० या संस्थेचे</p> <p>श्री हरिभाऊ बळवंतराव गिरमे विद्यालय</p> <p>वानवडी, पुणे-४०</p>		
एस. एस. सी. बोर्ड इ. नं. 11-217 व 11-15-049 वेतन पथक कोड नं. PNA (PMC)-9 शाळा रजि. नं. Bom / 394 / Pune	<p>- ☎ -</p> <p>20 26 53 49</p>	


जावक क्र. ४४७६/२०१२-२०१३

दिनांक ११ / ३ / २०१३

This is to Certify that Mrs. Sarika D. Rathod has completed her Ph. D. programme in our School between the period fr 2nd Jan 2013 to 26th March 2013. We wish her all the best for the successful completion of the course.

All the best !!!!!!!!!!!!!!!

Head Master


HEAD MASTER
Shri. H. B. Girme Vidyalaya
Wanowadi, Pune-40.