

A Study on the Difficulties Faced by 9th Standard Students of Thakur Vidya Mandir High School and Junior College while Performing Science Practical

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Abstract: *The present study aims to study difficulties faced by 9th standard Students of Thakur Vidya Mandir High School and Junior College while performing science practical. The present study uses a questionnaire to collect data from 9th standard Students of Thakur Vidya Mandir High School and Junior College while performing science practical. This research was conducted to understand the difficulties faced by students while performing various activities and experiments during science practicals. This study evaluated the knowledge, attitudes, and practices among school children in 9th grade. Science practicals develop critical thinking skills, problem-solving techniques, communication skills, and higher-order thinking*

Keywords: Study, Difficulties, Students, School, Science Practical

I. INTRODUCTION

Experiments play a vital role in the progress of science. A large number of path-breaking discoveries and creations have been possible through surveys done usually in laboratories. Experimental work is an important element of any course in science. A course on practical work in science curricula in schools at the secondary stage is designed to familiarize the pupils with the basic tools and techniques used in a science laboratory. It also predicts the development of problem-solving skills. These skills help the learner to acquire the ability to identify a problem, design and set up the experiment, collect and analyze data through the experiment, and interpret data to arrive at a reasonable solution in due course of time. These are, in fact, the long-term objectives of laboratory work and become the nucleus of the philosophy of construction of knowledge by the learn school science laboratory is a place where basic experimental skills are learned by systematically performing a set of prescribed and suitably designed experiments. Performing experiments with one's own hands is not only a thrilling experience but is also important because it entails learning by doing. It also facilitates understanding the concepts of science. The experiments and project work suggested at the secondary stage intend to develop basic skills of measurement; handling of some common measuring instruments, equipment and chemicals; setting simple apparatus; handling microscope and preparing slides; making observations; collecting data and presenting it in a suitable format; interpreting and drawing conclusions; and preparation of the report. There are certain rules and regulations that every student must be familiar with before undertaking practical work in a laboratory. A student is required to be acquainted with the general facilities and the equipment available in the laboratory and follow the rules and regulations. Generally, at the beginning of the session, the teacher takes the students around the laboratory to familiarize them with the general facilities available in the laboratory and tells them about certain do's and don'ts while performing the experiments in the laboratory.

So, this study was done to assess the attitude, knowledge, and practices among 9th standard Students of Thakur Vidya Mandir High School and Junior College while performing science practical.

1.1 NEED OF THE STUDY

- Science experiment helps to develop scientific vocabulary and terminologies that can be used throughout their lives when discussing the latest new science.
- It is a fun way to teach children about concepts like gravity, inertia, and other things using examples.

- It allows teachers to assess how well students grasp certain principles at home and school, giving them feedback on what should be taught next time around without depending on tests as a measure of content understanding.
- It provides opportunities for learners to experiment by themselves which helps to improve critical thinking.
- The opportunity to design and execute their own experiment also develops a sense of ownership which encourages them to become more responsible.
- Practicals provide hands-on experiences that develop the sense of learning by doing.
- Science practicals develop critical thinking skills, problem-solving techniques, communication skills, and higher-order thinking.
- The use of scientific methods are taught in science practical which helps students in life-long achievements.

1.2 Research Questions:

- What are the measures taken by school to make students aware of science practicals
- Is a laboratory facility available for students in school?
- How can teachers and parents work together to promote positive outcomes for students during school and foster the importance of science and its vocational curriculum?
- What are the challenges faced by students during practical experimentation?
- The present study helps to identify problems during practical experimentation in one of the schools of Mumbai Maharashtra

1.3 TITLE OF THE PROBLEM

“A study on difficulties faced by 9th standard Students of Thakur Vidya Mandir High School and Junior college while performing science practicals.”

1.4 OPERATIONAL DEFINITION

- **Study:** The devotion of time and attention to gaining knowledge of an academic subject, especially by means of books.
- **Difficulties:** The State or condition of being difficult.
- **Student:** A person formally engaged in learning, especially one enrolled in a school or college
- **School:** An institution for educating children.
- **Science practical:** Discipline dealing with the art or science of applying scientific knowledge to practical problems.

1.5 OBJECTIVE OF THE STUDY

- To develop a scientific attitude among students.
- To develop scientific vocabulary among students.
- To develop the use of scientific apparatus while performing experimentation.
- To develop the use of scientific instruments while performing scientific experiments.
- To develop higher-order and abstract thinking.
- To develop leadership qualities while working in groups during practical work.
- To develop team spirit among students.

1.6 SCOPE OF THE STUDY

- The researcher selected the target population as students aged of 15 years and above.
- The target population of students includes men and women living in the suburbs of Mumbai.

1.7 DE-LIMITATION OF THE STUDY

- The study is limited to Mumbai region only.
- The study is limited to students of a specific age group only.
- The study is limited to English medium schools.
- The study is limited to SSC board school.
- The study is limited to the Kandivali East area only

The study is limited to students who are currently enrolled in educational institutions.

II. RESEARCH DESIGN AND METHODOLOGY

The researcher has selected the descriptive survey method for her present study.

Population: In this study, 9th std students of Thakur Vidya Mandir High School and Junior College, Kandivali East, Mumbai have participated.

Sample: The sample comprises 40 male and female students from Thakur Vidya Mandir High School and Junior College, Kandivali East, Mumbai

Sampling technique: The researcher has selected a random sampling method for her present study.

Tools: All data for the present study was collected through a questionnaire prepared to conduct the study. This had a statement-type question in all. There were 20 number statements in all distributed under four sections. Three parameters were used for each statement for giving the answer that is yes, no, and sometimes.

Procedure of data collection:

The researcher studied different articles in magazines and newspapers, searched different sites, and then noted down a few titles for the study. She then took guidance from her research guide and finalized a title on which the researcher has completed this research.

After finalization of the title the researcher under the guidance of her guide prepared around 40 statements for the survey that was required for the research. The guide then selected 20 statements for the study. Once the statements were selected, the researcher prepared a questionnaire, distributed it among the 9th std students of Thakur Vidya Mandir High School and Junior College, Kandivali East, Mumbai and completed his survey.

The survey tool consisted of the following directives:

Please reach each sentence carefully and answer in terms of how well it describes you in the situation.

There are no right or wrong answers.

Select any one more suitable option.

The survey was completed with the full cooperation of the respective guide teacher, and parents as well as teachers of 9th std students of Thakur Vidya Mandir High School and Junior College, Kandivali East, Mumbai.

The name of the data collection center and count of the respondents are given in the table below:

Name of the School	No. of respondents
Thakur Vidya Mandir High School and Junior College, Kandivali East, Mumbai	40

III. ANALYSIS OF DATA

Once the data collection process was completed, it was required to be analyzed scientifically. Since the survey conducted is short, the researcher decided to proceed with percentage analysis. The researcher used a pie chart for graphical representation.

The technique used by the researcher for analyzing the data is percentage-based. The data collection process can be conducted using various tools. The researcher selected the questionnaire as a tool for the collection of data where the information collected from the 10th std students of Thakur School of Global Education, Kandivali West.

The researcher has used a descriptive survey method for analysis. Descriptive analysis is used to describe the characteristics of each sample.

IV. MAJOR FINDINGS

- All the findings are about the objectives of the study and data analysis performed in this study are mentioned in the following paragraphs.
- This study is a basic and initial study that involves the problems faced by students while performing science practicals during the secondary section.
- It identifies the area of possible further study.
- This study has given a third dimension to improve the basics for higher secondary education in science (science learning by doing). This view enables a new line of research that investigates the relationship between scientific theory and practicals.
- There is more need for research on the identification and use of constructive feedback practicals, which will eventually promote students' curiosity, creativity, and understanding towards science.

V. CONCLUSION

The study has gone through the length and breadth-wise analysis of the topic “A Study on the difficulties faced by 9th standard Students of Thakur Vidya Mandir High School and Junior College while performing science practicals.” The purpose of the research is to summarize the intentions and findings of this study and to understand the problems faced by students while performing the practicals during secondary education. It also examines the rules followed by the practical aspects of using substances and instruments.

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