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Analyzing the Difficulties Faced by IXth Standard Students while Performing Science Practicals

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Abstract: *A course on practical work in science curricula in schools at the secondary stage is essentially designed to acquaint the learners with the basic tools and techniques used in a science laboratory. It also envisages developing problem-solving skills. These skills help the learner to acquire the ability to identify a problem, to design and to set up the experiment, to collect and analyze data through experiment, and to interpret data to arrive at a plausible 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 learnt by systematically performing a set of prescribed and suitably designed experiments*

Keywords:. Experimental, practicals

I. INTRODUCTION

Experiments play a crucial role in the progress of science. A large number of path breaking discoveries and inventions have been possible through investigations done usually in laboratories. Science experiments help 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 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 the sense of ownership which encourages them to become more responsible. Practicals provide hands-on experiences that develop the sense of learning by doing. Science practical's develop critical thinking skills ,problem solving techniques ,communication skills and higher order thinking. The use of scientific methods are taught in science practical's which helps students in life long achievements.

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 learnt by systematically performing a set of prescribed and suitably designed experiments. Performing experiments by 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 appropriate format; interpreting and drawing conclusions; and preparation of 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, in 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.

1.1 Objectives of the Study

1. What are the Methods used by science Teachers to conduct practical (laboratory) sessions during offline Lectures (on campus) before Covid19 .

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2. What are the methods used by Science teachers to conduct Science practical (Laboratory) during online lectures during lockdown due to Covid 19.
3. What are the challenges faced while conducting Science practical (Laboratory) during online lectures during lockdown due to Covid 19.
4. What is the opinion of the teachers about considering online labs beyond campus?

Research design for present study: The design or methodology of the research conducted is a descriptive **survey method.** The method adopted by the researcher includes a **questionnaire** developed by the researcher.
Sample size: The sample comprises students, both male and female from. Random sampling method was used for the collection of data in this project. It seeks to obtain precise information concerning the school environment and previous knowledge of students and to draw valid and general conclusions.
Tools of research for present study: 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.

II. METHODOLOGY OF THE STUDY

The research had used a Descriptive **survey method** for research work. **Qualitative approach** is used in the present study. The researcher Studied articles, pdf of many authors Research work on various models of learning styles and acquired knowledge about different types of learning styles. Then he discussed and decided on a sample method and tool with the help of a guide teacher. The researcher prepared a questionnaire for the action research topic, and decided the format for the research rating scale. The questionnaire was checked and approved by the guide. The researcher selected one school for the survey. The researcher met the principal of the school to take permission to conduct the survey. The researcher then formed a Google survey form as a research tool. With the cooperation of respective teachers and students, a questionnaire link was distributed.

Major findings of the study

We can observe that the maximum of the respondents are on the positive side according to the study. That they don't face challenges while conducting science practicals. The study provides feedback that proper guiding instructions are given before and during conduction of experiments.

III. CONCLUSION

The results indicate that before the outbreak of covid19 Science practical was conducted in the traditional lab and after the sudden shift in the online mode of teaching due to closure of educational institutions to contain the virus, majority of the teachers used various methods of multimedia such as showing live demonstrations, recorded videos of the experiments, videos created within the institutions.

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