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A STUDY OF PERCEPTION OF STUDENTS OF CLASS Xth TOWARDS THE SCIENCE PRACTICAL EXAMINATION

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Abstract

This study aim to investigate the student's perception regarding the science practical examination, covering the entire details of the MCQ type written test and Hands on practical skills. The main purpose of this study is to assess the effectiveness of the MCQ test in the science practical examination that whether it develops the practical skills among the learners or it just encourages the guessing. Four main practical skills were assessed in this study as- Procedural and Manipulative skills; Observational skills; Drawing skills; Interpretive and Reporting skills. The descriptive survey design was used . Three government boys senior secondary schools of Delhi Directorate of Education from zone 07, District north were randomly selected, in which 100 students of class Xth were taken as a sample. Two questionnaire and one interview schedule were constructed as a tool for data collection. It was found that it is very effective in promoting procedural and manipulative skills, observational skills. Satisfactorily effective in promoting interpretive and reporting skills and least effective in drawing skills. It concluded that MCQ paper also helps in developing the cognitive faculties of the students in which they apply their knowledge by thinking for selecting a correct response.

Keywords:- *Perception, Science practical examination, Practical skills.*

1)INTRODUCTION

Science is a way of thinking and attitude towards the solution of problems, a meaning of solving problems as well as the product of investigation of natural phenomenon. The processes in science to be emphasized are the following –observing, classifying using numbers, measuring using space and time relationships, communication, predicting, inferring, controlling variables and experimenting. Science is taught through the practical methods where pupils are required to use experimental techniques to test their hypothesis .At the secondary stage the learners should be engaged in learning science as a composite discipline

in working with hands and tools of more advance technological module. Good science curriculum gives balanced emphasis to both theory and practical.

Science curriculum up to the Xth should be such that which enable the learner to acquire the practical skills and knowledge to enter into the world of work. It should not only stress on content but on practical skills of science also I.e., the methods and techniques of learning science.

From April 2005 onwards CBSE had implemented a change in the science practical examination by including a MCQ paper of 20 marks and inclusion of IXth practical syllabus in Xth class .

As we know that the examination is an important tool to verify both students and teacher's achievement. So, the researcher felt necessary to probe the perception of students towards the latest pattern of science practical examination and its effectiveness in promoting practical skills.

2) STATEMENT OF THE PROBLEM:

The main focus of the study is to investigate the student's perception regarding the latest pattern of the science practical examination and the effectiveness of the MCQ test of class Xth that whether it is effective in promoting practical skills or it encourages guesses?

3) OBJECTIVES:

The objectives of the study were:

i)To determine the extent at which the skills of observation, data collection and measurement predict the scientific reasoning in making conclusions.

ii)To explore the effectiveness of the science practical examination in promoting practical skills among the learners.

iii)To determine the effectiveness of the MCQ test in measuring the in-depth knowledge about the subject.

4) RESEARCH QUESTIONS:

i) To what extent the skills of observation, data collection and measurement predict the scientific reasoning in making conclusion?

ii) How the science practical examination is effective in promoting practical skills among students?

iii) Do multiple choice question test paper encourages the guessing among students?

iv) What are the inadequacies in the science practical examination ?

5) METHODOLOGY:

It includes-

i) **Nature of the Study:-** The present study is descriptive survey type. The survey was conducted on the students of class Xth of Government Boys senior Secondary schools.

ii) **Sampling:-** in the study random probability sampling techniques was used. In this study **three Government Boys senior Secondary schools of Delhi Directorate of Education from zone 07,** District North were randomly selected.

iii) **Sample:- Hundred students** of class Xth of Government Boys Senior secondary schools were taken. Out of hundred , **thirty students** were randomly selected for an interview.

iv) **Tools for Data Collection:-** two questionnaires and one interview schedule were constructed. **Questionnaire I** was constructed to analyze the application of scientific methods by the students ; which contains twelve items. **Questionnaire II** was constructed to determine the effectiveness of the science practical examination in promoting the practical skills among the students; it consist of twenty-five items. The **interview schedule** was constructed for determining an effectiveness of the MCQ test paper in measuring the in-depth knowledge about the subject.

v) **Techniques for Data Analysis:-** Data were analyzed **qualitatively** through the content analyses and **quantitatively** through the graphical method.

6) MAJOR FINDINGS AND INTERPRETATIONS:

The major findings of the study with respect to the objectives were as:-

6.1 For Objective No. 1: To determine the extent at which the skills of observation, data collection and measurement predict the scientific reasoning in making conclusions.

It was found that for the skills of observation, students follows an orderliness in an experiment and are understandable and they considered all possible perspectives like limitation of apparatuses, prediction about upcoming drawbacks and its possible solutions. For the skills of measurement, they care for the systematic measurement and considered all possible ways for getting perfection in their experiments. For the skills of Data collection, students usually look for the best way to organize and explain the data and discuss their data with each other. For the skills of making conclusions, they apply their skills of observation, measurement and data collection in making conclusions. Hence, it is interpreted that students performed perfectly and are on the right track.

6.2 For Objective No. 2:- To explore the effectiveness of the science practical examination in promoting practical skills among the learners.

It was found that for the procedural and manipulative skills, students are able to select the appropriate apparatus, and are able to perform their experiment with reasonably efficiency .Hence, the procedural and manipulative skills are well developed in learners. For the observational skills, students can observe the changes occur in an experiment carefully and make their observations systematically. For drawing skills, students needs more practice for drawing the specimens with correct labeling and in drawing circuit diagrams appropriately and proportionately. Hence, the drawing skills are not seems to be well developed in the students. F/or the skills of reporting and interpreting, students can able to interpret their results effectively and do correct calculations. They should report their results with proper SI units because they usually forget the SI units. Hence, the reporting and interpretive skills of the students are satisfactorily developed.

6.3 For Objective No.3:- To determine the effectiveness of the MCQ test in measuring the in-depth knowledge about the subject.

It was found that the MCQ test paper of class Xth of science practical examination is quiet effective in measuring the in-depth knowledge about the subject. As we know that this concept is based on higher order thinking skills (HOTS) which facilitates the cognitive development of the learners. Students of class Xth are pose to be less satisfied with the inclusion of Class IXth practical syllabus in Class Xth and finds difficulties in it. So, there is need for some improvement in the teaching-learning strategies, to overcome these difficulties. It was also found that there are few chances of guessing in the paper.

7) CONCLUSION:-

7.1 For Objective No. 1:- It may conclude that there are maximum extent at which the skills of observation, measurement and data collection predict the scientific reasoning in making conclusions among the learners.

7.2 For Objective No.2:- It may conclude that the science practical examination according to the latest pattern has been found much effective in promoting procedural and manipulative skills; observational skills. It has been satisfactorily effective in promoting reporting and interpreting skills but found to be not very effective in promoting drawing skills.

7.3 For Objective No.3:- It may conclude that only MCQ test paper in science practical examination is not quite enough in measuring in-depth knowledge about the subject because it does not assess the descriptive knowledge of the learners, so some short answer type questions might be included along with the MCQ type to assess the in-depth knowledge and the critical awareness of the learners towards the science subject.

8) EDUCATIONAL IMPLICATIONS:-

8.1 For Students:-

The study has the following implications for the students :-

1) Students should give more emphasize on drawing skills by practicing of drawing specimen with accurate and correct labeling.
2) Should give a comprehensive and self-explanatory title for tables and figure for an effective drawing of an observation table.
3) Observation table should be made neat and clean and in tabular form so that they will easy to read.
4) Give enough time for revising the class IXth practical syllabus side by side with the class Xth syllabus because a little ignorance will have an adverse effect on the marks of the science practical examination.

8.2 For Science Teachers:-

The science teacher should give the students more opportunities for practicing the drawing of specimens with correct and accurate labeling. Teacher should teach them the different ways for reading the graphs accurately and should give more practice for making a graph form observed data. Teacher must give proper attention and give importance on the revision of IXth class practical syllabus in class Xth that will reduce the stress level among the learners during their terminal stage.

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