

IMPORTANCE OF PROGNOSTIC TESTS FOR MATHEMATICS AT HIGH SCHOOL LEVEL

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Abstract

We observe that the mathematics classes are generally grouped into three divisions, accelerated, regular and slow. The basic criteria used for placement are intelligence quotient, arithmetic reasoning and arithmetic computation. Most of the time, we notice that students who are misplaced, they hinder the progress of the class. This happens due to placing students higher than their performance indicated that they merited. When these students are placed in another group they are unable to perform with the students in the lower group. In some cases the students' aptitude toward mathematics has impaired. This results that these students never develop good mathematical skills. In order to overcome this problem our school system should reevaluate grouping system as well as placement of students at right place.

Keywords: Prognostic test, Mathematics, High school level



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1. Introduction

The process of instruction involves three important tasks namely teaching, learning and evaluation. Continuous evaluation has become an integral part of instruction so as to continuously assess the achievements of the instructional objectives by the students, the effectiveness of the learning experiences provided and instructional strategy used by teacher. A teacher has to devise and administer a variety of tools and techniques for evaluation. Though a teacher may have to use techniques and tools such as interview, observation, case study, cumulative records, rating scale, and checklist for a variety of purposes, tests and examination constitute important means to evaluate the students' performance.

Tests can be used with different objectives:

- i. For measuring achievement
- ii. For diagnosis and
- iii. For prediction

Based on the functions served by tests, they can broadly classify as achievement tests, diagnostic tests and prognostic tests.

2. Concept of Prognostic Tests

One of the important uses of tests is to predict how individuals behave in certain situations. For example, when tests are used to select students for colleges, the major purpose is to forecast how well students will do when they actually go to college. One group of aptitude tests is made up of tests designed to predict readiness to learn or probable degree of success in some subject or segment of education. These are called prognostic tests.

Prognostic tests are intended for use in prognosis or prediction of future success in specific subjects of the school curriculum. As they usually test the background skills and abilities found to be prerequisite for success in the particular subject, prognostic tests are more common among subjects in which success can be rather well defined in terms of certain basic abilities. They also frequently test some of the aptitude factors that are not directly dependent upon previous training of a specific topic.

3. Need of Prognostic Tests

World Scenario VS Indian Scenario

In most of the developed countries we observed that every student takes some form of a standardized aptitude test multiple times throughout his/her school career.

For example, the most widely known standardized test is the Scholastic Aptitude Test, which is commonly referred to as the SAT. The SAT is a standardized test widely used for college admissions in the United States. Skills tested through SAT are Writing, critical reading, mathematics. The SAT is sometimes given to students younger than 13 by organizations such as the Study of Mathematically Precocious Youth, who use the results to select, study and mentor students of exceptional ability.

Also University of London conducts MAT (Mathematics Admission Tests) for all of its undergraduate Mathematics course applicants.

Admissions tests are used in the admission process at elite or private elementary and secondary schools, as well as most colleges and universities. They are generally used to predict the likelihood of a student's success in an academic setting.

For Ex. – Admission Tests at Secondary School Level

- ISEE - Independent School Entrance Examination
- SSAT - Secondary School Admission Test
- HSPT - High School Placement Test
- COOP- Cooperative admissions examination program

Admission Tests at Undergraduate

- SAT - formerly Scholastic Aptitude Test
 - SAT Subject Tests
 - Former English Language Proficiency Test - ELPT
- ACT - formerly American College Testing Program or American College Test

On the contrary we can observe the key characteristics of Indian Secondary Education System - Admission to professional programs (engineering, architecture, medicine etc.) is through competitive state - or national - level entrance examinations. These include the Joint Entrance Examination (Indian Institutes of Technology), the All-India Pre-Medical/Pre-Dental Examination, and the All-India Engineering Entrance Examination. On the contrary most of admissions in India to the various courses are generally based on a percentage got by student and marks got in any entrance test. We observe that many students got good marks in 10th or 12th Board Examinations as well as in various kinds of entrance examinations but most of the students not able to clear mathematics subjects who take admission to various professional courses like engineering, management, etc.

Also, after 12th we don't follow any kind of screening test system while giving admissions to various courses like B.A., B.Com. B.Sc.,etc. or diploma courses like ITI, diploma in engineering, polytechnic or management due to this we can see most of students are unemployed, they do not have skills required for particular job or profession though they have degree certificate. Lots of students suffer from stresses or depression stages, as they are do not getting employment. We can avoid all these problems if we place right person for right job and to achieve this goal we need to use various kinds of standardized tests at various levels of schooling.

Prognostic Tests are hold good for subjects in which success can be rather well defined in terms of certain basic abilities like languages, mathematics.

4. Need and Importance of Prognostic Tests for Mathematics

The importance of mathematics has never been greater than now and for the foreseeable future. Mathematical skills are crucial for a wide array of analytical, technological, scientific, security and economic applications.

High school mathematics is traditionally more procedural than conceptual in character, as well as formally less rigorous, than is mathematics at the university level, and hence puts less demand on logical reasoning and conceptual understanding. To find an

instrument to make a reasonably good prognosis for success in undergraduate mathematical studies, it is therefore necessary to look closely at the demands of the future mathematical activities rather than only more narrowly at what has actually been accomplished at the school level in terms of content and methods.

Prognostic tests are valuable for school students in the following ways

- A large percent of these failures could probably be avoided by advising students not to undertake subjects for which they are not fitted.
- Whether to keep mathematics subject at 11th standard or at 12th standard when taking admission for science, commerce stream.
- While taking admissions for diploma courses of engineering, polytechnic.

In short, to predict how individual behave or perform in certain situations for example, when tests are used to select students for colleges, major purpose is to forecast how well student will do in mathematics subject when they actually go to college in.

5. Significance of the Prognostic Tests

A set of high school prognostic tests provide projected placements in next mathematics courses long before students arrive on campus.

- By using these tests, colleges can ensure that more incoming students are prepared for college-level mathematics courses.
- Colleges can save money by reducing the number of remedial classes they offer and students can avoid the extra time and costs associated with taking remedial courses that do not count towards their degrees.
- Tests will be useful in conjunction with a number of state-wide initiatives to improve student preparation for college or university mathematics courses.
- The high school prognostics results will give a very good indication of the students' abilities.
- With these tests, students, high school teachers and guidance counselors can detect weaknesses early, while there is still time to take corrective action in high school. Similarly, students who perform well can move on to advanced courses or additional subjects, confident that they have a firm grasp of the mathematics they need.
- Testing during high school encourages high school students to maintain their math skills and to continue taking mathematics classes, so they are better prepared for a broader range of fields of study.

- As part of a college outreach program, high school testing can increase student interest in attending that college or university, as students become more familiar with the institution and more confident that they will succeed there.

Summary

As public education becomes opened to all, there is a large diversified range of ability within each instructional unit. In order to build a strong, productive responsible citizenship and social cohesion in the present scenario we should give emphasis on ability grouping as we are facing manpower shortage and special skills in the field of intellectual creativity. These tests will help to improve student preparation for college mathematics courses. Also results obtained by these tests will give a very good indication of the students' abilities. Testing during high school encourages high school students to maintain their math skills and to continue taking math classes, so they are better prepared for a broader range of fields of study.

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