PROGNOSTIC TEST FOR THE ASSESSMENT IN MATHEMATICS

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Abstract

In this paper, we will discuss the most important aspect of evaluation. Assessment of students is very essential stage subsequently followed by teaching in which, we measure achievement, diagnose or predict the performance of the students in Mathematics. In India, mostly the students are assessed by achievement or aptitude tests, while in the developed countries; they focus on predicting the performance of student well in advance with the help of Prognostic Tests. These tests are intended for use in prognosis or prediction of future success in specific subjects of the school curriculum.

Keywords: Prognostic Test, Assessment, Mathematics

1. Introduction

As per CCE it's a responsibility of teachers/ researchers/ experts to develop the tools needed for varied educational and career options. This leads to finds out the solution on one of the difficulties faced in schools in order to predict the performance of mathematics well in advance. Teaching learning process is incomplete without evaluation. Based on the functions served by tests, they can broadly classify as achievement tests, diagnostic tests and prognostic tests.

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 e.g. SAT, MAT They are generally used to predict the likelihood of a student's success in an academic setting.On the contrary in India we observe that most of admissions to the various courses are generally based on a percentage got by student and marks got in any entrance test 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.

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 Prognostic tests at various levels of schooling

Present paper is an attempt to discuss the factors that one should take into consideration while constructing mathematics prognostic test for secondary school level.

Assessment of students is very essential stage subsequently followed by teaching in which we either measure achievement or diagnose or predict the performance of the students in Mathematics.

Prognostic Tests: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 are known as prognostic test.

These tests are intended for use in prognosis or prediction of future success in specific subjects of the school curriculum.

Nature of the Prognostic Test: Items of the Prognostic tests should be framed /constructed carefully. As a teacher, if you want to predict that how will be the mathematics performance of seventh standard student in eighth standard in such situation prognostic test will help you. For this mathematics teacher first need to identify the content/concepts from previous class which are prerequisite for students to learn to new concepts from higher standard. For example students those who want to keep and complete successfully mathematics subject at eleventh standard they should have complete/deep knowledge of every concepts from tenth standard and keeping this thing in mind teacher should construct and select items for prognostic test. For example trigonometry is the important concepts from tenth standard and which is the base to learn higher standard mathematics. Teacher should frame items based on concept so it will check the comprehension ability, applicability of knowledge in new or similar situation of a student.

For example

- $\sin^2 30^\circ + 4\cot^2 45^\circ - 2\sec^2 60^\circ =$ _____
  a) 0   b) 4   c) $\frac{1}{4}$ d) 1

2. Need and Importance

In India such prognostic tests are not developed therefore, the researchers decided to construct and standardized Mathematics Prognostic Test for secondary school students for mathematics subject.

NCF 2005 listed some problems in school Mathematics education

- A majority of children have a sense of fear and failure regarding Mathematics. Hence, they give up early on, and drop out of serious mathematical learning.

- The curriculum is disappointing not only to this non-participating majority, but also to the talented minority by offering them no challenges.

- Problems, exercises and methods of evaluation are mechanical and repetitive, with too much emphasis on computation. Areas of Mathematics such as spatial thinking are not developed enough in the curriculum.

To overcome such problems prognostic testing will be helpful in the following way:

- 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.

- With these tests, students, high school teachers and guidance counsellors 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.

3. Research Methodology

This is a quantitative research where all X standard school students from Maharashtra is the population. The sample includes 1026, X standard school students. Cronbach's Alpha was used for reliability of the prognostic test (0.875), Regression modelling is to frame the equation that will predict the performance of students in mathematicsand Paired Samples Correlations were the statistical techniques used in this work.

4. Conclusions

As a result, the researchers constructed and standardised the Prognostic test for Mathematics which can predict the performance of the students in Mathematics at their higher studies. The researchers found that -

- The Prognostic Test for mathematics is reliable with significant predictive validity.

- There is no significant relation between marks got in tenth standard mathematics and marks got in eleventh standard mathematics. This result is eye-opener to everyone as we see many students get good marks in tenth standard mathematics but they are not able to clear or they score just border line marks in higher classes.

- This prognostic test may be the unique test for predicting the performance of students in Mathematics in India.

5. Summary

By using such prognostic tests at different school levels we can really achieve skilful output through this education system.

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