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Development and validation of performance test of science (PTS)

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Abstract
This paper discusses the Development and validation of Performance Test of science (PTS) for first grade students. The present study is conducted in Srinagar district of Kashmir. The investigator has taken 100 first grade students from Govt. schools of District Srinagar. The investigator find out reliability by test-retest reliability as 0.63, split half (U/L) as0.85, split half (O/E) 0.86 Validity of PTS has been determined by face validity.

Keywords: First grade students, Performance, Science.

Introduction

The role of a teacher is to help students apply concepts, such as math, English, and science through classroom instruction and presentations. Elementary school teachers play an important role in the development of students. According to the Occupational Outlook Handbook offered by the Bureau of Labor Statistics, elementary school teachers are often the sole source of a student's learning experience. What students learn in their formative years can shape how they are in the future. The role of a teacher is clearly more than just planning and executing Lesson Plans it's also becoming the student's third parent. One benefit of the role of a teacher is being a constant role model for their students. Children that lack a solid family foundation will really benefit from a positive role model. Teachers that portray an image of confidence and accomplishment will help fulfill a child's need of a Positive role model when the family may fail to provide such a figure.

According to the George Lucas Educational Foundation role of teacher today is much different than it used to be. Teacher's used to be told what to teach, and how to teach it. They were expected to use the same methods for all students. In today's world of education, a teacher's role is quite multifaceted. Their job is to counsel students, help them learn how to use their knowledge and integrate it into their lives so they will be valuable member of society. Teachers are encouraged to really tune into how each individual student learns, and try to really challenge and inspire them to learn.

According to all India Seminar on Science Teaching, held at Taradevi, aims and objectives of science Teaching at Primary level should be Inculcation of habits of healthful living, Developing neat and orderly habits., Developing the child's powers of manipulation and the creative and inventive faculties, Developing the habit of observation, exploration, classification and a systematic way of thinking.e. Arousing and maintaining interest in nature and in the physical and social environment, arousing love for nature and the habit of conserving nature and its resources.

Science is considered as is of the best way to develop independence of thinking ability to examine truth and to stand by it. Science facilitates us to understand the world. But science has been presented as a monster and the result of it has been that children have developed fear psychosis for it and are trying to shy away from it. An attempt has been made to minimize not only the contents but also to bridge gape between science learnt at home and in school.

Performance is the performance of student in classroom. Performance refers the students score gained by the student in science the refers to the score gained in following domains:-

1. Classification.
2. Days of week
3. Seasons
4. Months of year
5. Recognition

Therefore in order to assess performance a Performance test like “Performance test for Science is needed to know about performance of the First grade students in science.

Description of the Performance test in Science (PTS)

The Performance test is a testing tool which has been developed for the purpose of measuring performance for student in Science along the following domains:

1. Classification.
2. Days of week
3. Seasons
4. Months of Year
5. Recognition

Construction of Performance test

Following steps were followed to make Performance test:

(A) Planning of the test: The construction of tests were carried out by consideration of limitation under which the tests were developed. The expert opinions were taken for the construction of the tests. The items of Performance tests were prepared in English language and covered the “basic concepts of science”. 15 questions were planned to conduct the test. Students were asked to complete this in 30 minutes.

Development of Performance test of Science (PTS)

Pooling of Items

A list of 25 Questions/items was initially pooled from various sources which included the comprehensive review of literature and also some tests constructed by other authors. The list was given to experts to evaluate their content relevance.

In the light of expert rating 5 items were dropped and only 20 items were retained

Try out
The initial format comprising of 20 items on 2- point response test was administered on a sample of 100 First Grade students of District Srinagar (Kashmir).

Item Analysis
The response sheet received from students were arranged from maximum to minimum on the basis of overall score. The criterion of 27% above and 27% below was employed on the response to determine the upper and lower group. The't' value of each item between these groups were computed.

Item Revision
Only those items in the final format were retained whose't' value were found significant at 0.01.

Final Format
The final format consists of 15 items.

(b) Standardization
The PTS has been standardized by finding its reliability and validity.

1. ***Reliability:***- The reliability of performance test has been determined by :-

I. **Test Retest: -** The reliability of the PTS was found by administering the test on a group of 100 First grade students. The reliability Coefficient, was computed between first and second test scores after applying Correlation formula came out to be as **0.63** (Significant at 0.01 level).

II. **Split half (U/L)**:- The reliability of the scale was found by administering the PTS on a group of 100 First grade students. The reliability Coefficient, after applying Spearman - Brown prophecy formula came out to be as 0.85 (Significant at 0.01 level).

III. **Split half (O/E):-** The reliability of the scale was found by administering the PTS on a group of 100 First Grade students. The reliability Coefficient, after applying Spearman - Brown prophecy formula came out to be as 0.86 (Significant at 0.01 level).

Reliability (N =100)

Reliability	Split half (U/L)	Split half (O/E)
	0.85	0.86

2. **Validity:-** The validity of PTS has been determined by :-:

Face Validity: - To final out what the test measures, it was decided to determine its face validity. For this, the expert's opinion had been considered.

Administration of PTS
The Performance test can be administered to a First primary students in the school with the instruction given at top of it. The test administrator reads out the instruction before administering.

Time required for administering the test
The PTS can be completed in a single sitting by student. It takes about 30 minutes to respond completely.

Scoring
Each item is scored on 2-point Performance Test distributed on Right, Wrong

For each Question/item	Right	wrong
	1	0

The possible range of scores on the scale is 1-15.
A student scoring high on the PTS is high performing than the student scoring low on the PTS is low performing.

Norms

Range of score	Classification
11&above	Good
6-10	Average
1-5	Poor

Uses
The PTS is valuable and useful instrument to the teachers, administrators, teacher educators and above all to researchers.

- To Teachers it will be helpful in promotion of student to next upper class.
- To administrators it can be used to determine the performance of student as well as teacher at First Primary level.
- For teacher educators it will prepare ground to develop skills teacher trainees/resource persons so that they may be able to train teachers who can perform well in first grade classroom.
- For researchers it will help to explore the performance of a student and observation skill in science at first primary.

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