Original Research Paper

Volume - 7 | Issue - 6 | June - 2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 79.96

Education

TEACHER MADE ACHIEVEMENT TEST IN THE SUBJECT OF SCIENCE AT SECONDARY SCHOOL LEVEL

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ABSTRACT Achievement may be defined as a change in behavior in a desired direction. Learning results in changed responses to certain types of stimuli. Achievement can occur in a variety of ways and at a variety of levels. There are two types of achievement tests namely teacher made test and standardized tests. This paper focus on teacher made test. Teacher made test can further be categorized into oral test, written test and practical test. Oral tests are used extensively in the lower classes as well as in the secondary classes. Written tests are categorized as essay type ,short type and objective type. There are some principles of constructing essay type, short type items and objective types. Here the author has compared the essay and objective type tests. There are also a few suggestions for writing better multiple choice question. Matching type tests, alternative tests, simple recall tests, recall type tests etc. the author is trying to implement the achievement test in the secondary classes.

KEYWORDS : Achievement, Secondary, Standardized

1. Introduction:

Education is a process which brings about changes in the behavior of a society. It is a process which enables every individual to effectively participate in the activities of society and to make positive contribution to the progress of the society. In our system of education students are grouped either on the basis of their age, gender , ability or on the study programme, they opt for. The quality, ability of the students can be access through certain kind of tests. To judge the level of understanding the test should be objective based rather than formal writing. Achievement tests are well suited to provide educators with objectives. E feed back as to how much students are learning and understanding. The most instructionally relevant achievement tests are those developed by the individual teacher for use with a particular class. Teachers can tailor tests to emphasize the information they consider important and to match the ability levels of their students. If carefully constructed, classroom achievement tests can provide teacher with accurate and useful information about the knowledge retained by their students.

Achievement may be defined as a change in behavior in a desired direction, learning results in changed responses to certain types of stimuli. Achievement may occur in variety of ways and variety of levels. There are two types of achievement tests- Teacher made and Standardized test. Constructing a good teacher made test it is very time consuming and difficult moreover, it is hard to understand why something so essential to the learning process has been virtually ignored in teacher preservice or in-services training. One of the problem with teacher made test is their emphasis on lower level thinking.

2. Why do we need better teacher made tests? : Even the parents and media value published test scores ,most teachers do not rely on standardized tests to tell them what their students know and don't knows. Teachers also need to make adjustments in their tests for the various learning styles, multiple intelligences and learning problems of the students in their classes.

2.1 Multiple Intelligences: Gardner's theory of multiple intelligences calls for multiple assessments for the multiple intelligences. An effective teacher made test should address more than one or two intelligences. Teachers who include strategies and tools such as graphic organizers, student choice and opportunities for oral answers meet the needs of their diverse students.

Types of Learners –

1. *Visual Learners*
2. *Auditory learner*
3. *Kinesthetic learner*

2.2 Learning Modalities: Teachers need to construct tests that can be adjusted for students learning modalities and to make modifications for at risks students. Fender defines learning modalities as ways of using sensory information to learn. Three out of the primary senses are used in – storing, learning and recalling information.

Student learn from and communicate best with someone who shares their dominant modality, it is important for teachers to know the characteristics of their students so that they can at least alter their instructional styles and tests to match the learning styles for all the students.

3. Evaluation in science teaching

A comprehensive scheme of evaluation serves a number of purpose that ultimately contribute to the improvement of the instructional methods, text books curriculum and evaluation are interdependent and teacher should take these three aspects together to make instructional process effective.

3.1 *Test and Retest construction*

For evaluation purpose test is a fundamental need . In traditional terminology we know it as question paper. To measure intellectual developmental power, test is a instrumental tool .here focus is on written test. There are some essentials for tests like comprehensiveness, objectivity, reliability and validity.

3.1.1 For classroom teachers the steps for test construction are –

A. Designing the test
B. Preparation of blue print
C. Writing the test items
D. Administering the test
E. Scoring the test
F. Evaluating the test

Step 1: The first step in constructing an effective achievement test is to identify what you want students to learn from a unit of instruction. Consider the relative importance of the objectives and include more questions about the most important learning objectives. If however the test focuses on a few objectives to the exclusion of others, students will not have the opportunities to demonstrate their understanding of other aspects of the material and you may not be able to make an accurate assessment of each students knowledge.

The learning objectives that we want to emphasize ,will determine not only what material to include on the test, but also the specific form the test will take. For example if it is important that students be able to do long division problems rapidly. Consider giving a speeded test. The types of questions to be used will also depend on the learning objectives. If it is important that students remember dates, the multiple choice or fill in the blanks questions might be appropriate. Hence for designing the test our attention should be towards –

-Weightage to different areas/contents.
-weightage to different objectives
-weightage to different type of test items.
-Scheme of options.
-Sections in the achievement test.

Step 2 : The second step, preparation of blue print is soon after completion of making design. The design of the achievement test is

given by means of a three dimensional table of specifications in the form of a blue print. A blue print is essentially a three way grid, with the content spread along the vertical axis and the objectives to be tested along the horizontal axis.

Step 3 : This step writing the test items consists of -
(a) Assembling the questions on the basis of their forms.

Example:
Section A - Objective type
Section B - Short type
Section C - Essay type

(b) Instruction to the students - General instruction should be given at the beginning of a question paper.
Example: (i). This paper has two sections A & B.
Ii). All questions in both the sections are compulsory.

(c) Implication to teachers – This facilitates objective testing and scoring.

Here are the some principles to write the test items. While the different types of questions like multiple choice, fill in the blank or short answer true-false, matching and essay type are constructed differently. The following principles apply to constructing questions and tests in general.

- Make the instructions for each type of question simple and brief.
- Use simple and clear language in the questions.
- Write items that require specific understanding or ability developed in that course, not just general intelligence or test-wiseness.
- Do not suggest the answer to one question in the body of another question.
- Do not write questions in the negative.
- Specify the units and precision of answers.

The most commonly used type of question is the multiple choice question. Multiple choice questions are more easily and objectively graded than essay questions and are more difficult to answer correctly without the required knowledge than true false questions. Multiple choice questions however are probably the most difficult type of question to construct .the following are the a few guidelines for multiple choice question construction.

- State clearly in the instructions whether you require the correct answer or the best answer to each item.
- Instead of repeating words in each alternative, include these words in the main body of the question.
- Make incorrect alternatives attractive to students who have not achieved the targeted learning objectives.
- Vary randomly the placement of correct responses.
- Make all choices exactly parallel.
- Never offer 'All of the above' or 'Non of the above' as an alternative in a best response multiple choice question. Try to use homogeneous lists if possible.
- Control the difficulty of a question by making the alternatives more or less similar or by making the main part of the question more or less specific. If the alternatives are more similar, the students will have to make finer distinctions among them. If the main part is more specific, the students will be required to draw on more detailed knowledge.

Step 4 : Administering the test is the key operation in the measurement of achievement with the test is the actual use of the instrument by the students. Poor planning of the administrative process can lead to suspicious result. This involves predetermining among other things, time of testing, place of testing and giving of instructions.

Step 5 : Scoring key and marking scheme is prepared for the objective questions and a marking scheme is made for the essay and short questions. The marking scheme help the examiner to bring about a uniformity of standard in assessing and thereby increasing the objectivity of the test. Many examiners may be involved in assessing the answers thus, quickening the correction process.

Step 6 : In evaluating the test, a few questions need to be asked. If the scores are extremely high, it may be assumed that the test was too easy for the class. If the scores are extremely low, the was probably too difficult. Was the test too long ? Too short ? Was the print clear and readable ? Were the directions clear on such matters as placement of answers ? Did the administration of the test require frequent interruptions of the students ?

It is advisable to review the question paper before it goes for printing. A review of the question paper necessitates three steps :

- Question wise analysis before the test.
- Critical evaluation of the test before the test.
- Item analysis after the test.

Questionnaire analysis helps to know the strengths and weaknesses of the test, to tally the question paper and the blue print, and to determine the content validity of the test.

Each question is analyzed according to objective, specification, topic, question – type and form, estimated difficulty level, time needed, and marks allotted. Critical evaluation of the test helps weed out any duplication, spelling mistake, ambiguities, that may exist in the paper. Qualitative and quantitative assessment of the test should be done.

Item analysis enables the teacher to evaluate the effectiveness of the test items. It helps in determining the difficulty value of each item, the discriminating power of each item, and the effectiveness of distracter of the given item.

4. Conclusion:

The present reform of science teaching places emphasis on the future. Students are expected to acquire skills in resolving problems, making decisions, recognizing risks and managing changes in science as well as increasing the confidence of the people about the value of science in everyday life. Hence to distinguish the extraordinary students, average students and poor students, it is very much essential to conduct a good quality is very much essential to conduct a good quality test. The teacher must focus their efforts on the needed development for better teaching understanding and application of science knowledge. The teacher should continuously access students understanding through the test.

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