

DESIGNING OF TEST ITEMS

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Abstract

One of the great challenges forced by the new century is adapting education to the changing needs of the society. The global economy of twenty first century demands in its people a set of new competencies. This will be possible only if they are imparted through our education by adapting innovative techniques in teaching, learning and evaluation processes. Based on this vision there is need to renovate these processes. It is generally observed that many teachers cannot write good test items. Writing good test items is an art. Therefore student teachers should be enabled to good test items on their own. This article describes ow to develop good test items briefly. Mainly it includes strategy for producing good test items. This study was an experimental research in which pretest-posttest design was applied. The purpose of this study was to find the effect of strategy for producing good test item. Strategy for producing good test items has been applied to the selected group; that is selected B. Ed students studying in Adarsha comprehensive college of education, Pune. year 2010-2011. Test prepared by researchers which was based on students teaching methods. Test and students feed back was the tools used in this experiment. Conclusions showed that there is a significant difference between the results of pre test and post test. Strategy for producing good test items is effective.

Key Words: *Good test items, multiple choice questions*



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Designing of Test

Method of teaching of writing test items: The construction of good test items is an art. Therefore student teachers should be enabled to good test items on their own. According to evaluation procedure, objective test is the one of the remedy for improving the examination. Therefore teacher educators should teach to student teachers how to produce good test items.

General suggestions for writing objective items: Following are some suggestions that apply to almost any type of objective items.

- 1 Difficult words should be avoided.
- 2 An item should not be reproduced verbatim from a text-book.
- 3 An item should not provide cues to the answer of another item.
- 4 Answers should follow a random pattern.
- 5 Avoid ambiguous statements.
- 6 Quantitative rather than qualitative words should be used.
- 7 Avoid using interdependent items.
- 8 Avoid trick and catch questions.
- 9 Items dealing with trivial detail should not be used.

Multiple choice items: A multiple choice item consists of a problem and a list of suggested solutions. The problem may be stated in the form of a direct question or an incomplete statement and is called the stem or the premise of the item. The list of suggested solutions may include words, numbers, symbols or phrases and are called alternatives. The correct alternative is called answer while the remaining alternatives are called distractors, whose function is to distract those who are in doubt about the correct answer. Thus multiple choice items consist of three parts, a stem, a key and a number of distractors. The key and distractors are often referred to as options. The stem can be either a direct question or an incomplete statement; the key is the correct answer and the distractors are plausible but incorrect answers. The key and multiple choice items are the most flexible and most effective of the objective type items. It is effective for measuring a variety of learning outcomes such as information, vocabulary, understanding, application of principles and ability to interpret data.

Merits: Following are some merits of multiple choice questions.

- 1 This type can measure a variety of learning outcomes such as knowledge, understanding and applications
- 2 It is free from ambiguity and vagueness which are present in the completion type item.
- 3 Guessing is minimized as the number of alternatives is increased to four or five. The item thus becomes more reliable.
- 4 Distractors selected by the pupils provide clues to the teacher for diagnosis for pupil's difficulties.
- 5 This type need not meet the absolute standard of truth and falsehood demanded of true-false type of item. The pupil is to select the best alternative from among the given

ones. This makes it possible to measure learning outcomes in the numerous subject matter areas.

Maxims for multiple choice items: Following are different maxims of multiple choice questions.

- 1 Beware of irrelevant grammatical cue.
- 2 Make all responses plausible.
- 3 The correct answer should not be consistently longer or shorter than the distracters.
- 4 Answer should follow a random pattern.
- 5 The stem of the item should clearly formulate a problem.
- 6 Wording should be as concise as possible.
- 7 Be sure that there is one and only one correct or clearly best answer.
- 8 Each item should have four or five choices.

Test items as teaching tools: Intelligent and creative teachers may use test items/ questions as effective teaching tools. Competent item writers start with the key in their mind and look for plausible distracters, which are based on students' misconceptions about the subject matter component being assessed by the item under construction. This approach to item construction is very useful in teaching. Teacher may compel to make introspection and modify or improve his teaching strategy so as to remove the misconceptions indicated by the item response frequencies. Teacher may also plan a remedial instruction program to remove misconceptions.

The quality of a test cannot be better than the quality of its items. While evaluating the achievement of their pupils, the teachers should see that the test they use should consist of good items, both in terms of content validity and statistical characteristics.

Characteristics of a good item writer: A good item writer should possess the following characteristics;

- 1 He should have a thorough mastery of the subject matter to be tested through the items constructed by him.
- 2 He should also be aware of the popular misconceptions prevalent among the learners about the fundamental ideas and concepts of his field, which would enable him to select good distracters for his items.
- 3 He has to be a psychologist also having a full understanding of the psychologist also having a full understanding of the psychological and educational status of the

individuals intended to be tested. This would help him adjust the difficulty and complexity of test items.

- 4 He should be appropriately trained in the theory and practice of educational and psychological measurement having developed special skills and techniques of test item construction.
- 5 He should be a master of verbal communication so as to be able to present his items in a simple, precise and unambiguous language.

In this study strategy for producing good test items was used because many of the student teachers cannot write good test items. Writing good test items is an art, which is learnt after experience and practice. It is difficult and creative task. Keeping the above facts in mind, the present study aimed at investigating the effect of strategy for producing good test items on the achievement in preparation of test of B. Ed. Students.

Statement of the Problem

To study the effect of strategy for producing good test items on the achievement in designing of test of B. Ed. Students.

Objectives of the study

- To study the effectiveness of strategy for producing good test items on the achievement in designing of test of B. Ed. Students.
- To find out the views of the B.Ed students regarding strategy for producing good test items.

Statement of Hypotheses

Research Hypothesis

- B. Ed students, who trained according to the strategy for producing good test items, will perform significantly better in posttest as compared to pretest.

Null Hypotheses

There is no significant difference between the mean achievement scores in pretest and posttest obtained by B. Ed students who are trained in strategy for producing good test items after pretest.

Variables in the Study

Independent variable of the experiment was given treatment i.e. strategy for producing good test items

Dependent variable of the experiment was achievement of B. Ed. Students in designing of multiple choice questions.

Scope and limitations

- This study will be useful to all B. Ed students.
- This study is restricted to performance of selected B. Ed students.
- Only in the preparation of content enrichment test is focused for the study.
- This study is restricted to selected topics from content.

Method

The study is an experimental research in which pretest-posttest design single group has been used.

Population

The Population of this study consisted of B. Ed students.

Sample

Sixty students of the B. Ed. Class in Adarsha Comprehensive College of Education and Research, Pune, Maharashtra, were the sample of the experimental study. These sixty students were selected by adapting the purposive sampling technique.

Tools

- Achievement test (pre and post) on specific content was prepared by the researchers.
- Feedback sheet (questionnaire) was prepared for B. Ed students

Structure of Achievement test

An achievement test was based on content, related to student's teaching method. The test contained 10 questions on designing good quality of multiple choice questions. It was of one hour duration. It was assessed by experts to check the validity of the test. Internal reliability of the test also was checked.

Procedure of Data Collection

All the selected students were pre tested with an achievement test. After that the selected students were taught through the strategy for producing good test items.

strategy for producing good test item

Sr. No	Innovative teaching strategy	Description	Resource person giving the training
1	Orientation about concept and importance of multiple choice questions.	Computer assisted teaching (making a presentation on multiple choice questions)	Mr Kale and Mr. Gambhir Experts (theory and demonstration)
2	Demonstration of how to design good quality multiple choice questions	Illustration of proper examples of multiple choice questions (MCQ).	Mr Kale and Mr. Gambhir (demonstration)

3	Co-operative learning	Designing of multiple choice questions by B. Ed students in their method group	Dr. Padmaja .Kasture and staff (assessing learner's achievement)
4	Group work	Group work:- Preparation of test item	Dr. Padmaja .Kasture and (assessing learner's achievement)
5	Self learning	Preparation of question bank based on MCQ	Dr. Padmaja .Kasture and (assessing learner's achievement)

After the process, the selected B. Ed. students were administered the post test. The feedback from B. Ed students who were involved in the procedure was taken to elicit the data about the student's responses toward the strategy for producing good test items.

Analysis and Interpretation of Data:

Distribution on pretest and posttest Achievement Scores

Test	Mean	SD	Calculated 't'	Standard 't'
Pretest	28.0333	3.7919	11.1808	2.58
Posttest	34.6333	3.7736		

Table shows that there is a significant difference in the mean scores of pretest and post test. (Rejection of null hypothesis)

Observations from feedback

- All students felt that strategy for producing good test item is essential in a teacher training programme.
- Most of the students felt that they understand designing of multiple choice questions better when they learnt by experts.
- Maximum students required teachers help for supplementary information.
- Most of the students felt that reading skill, self learning skill, are also developed through the programme/strategy.

Observation from Experiment

The achievement in producing good test items of the B. Ed students is increased after the strategy for producing good test items.

Conclusions

- The strategy for producing good test items is effective.
- Student teachers design well multiple choice questions on their own.
- Producing good test item is essential in future as teachers.

Concluding Remark

Intelligent and creative teachers may use test items /questions as effective teaching tools. In addition to their application in assessing learner's achievement, good test items may assist the teacher in improving his teaching method.

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