



Construction and Standardization of Achievement Test In Social Studies

KEYWORDS

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ABSTRACT *The achievement test in social studies has been developed and standardized by the investigator meant for class IX under PSEB. The procedure of development of achievement test in social studies consists of planning, preparing, item selection, try-out, scoring and item analysis. The test initially consisted of 145 items, later after discussions with the experts and administration on the students, the items were reduced to 131. After thorough item analysis the final draft of the test reduced 60 items. The test-retest reliability was found to 0.90. Validity was established by content validity method.*

Introduction

Education is an important factor in the development of human being. Through education he develops a sense of discrimination and acquires different values, which makes life the pride of 'human species.' One of the major aims of education is all round personality development of the Child. But in the present formal system of education this aim has centered only on the development of academic talents of the child, and the educational institutions are trying their best to uplift the academic achievement. According to Random House Webster's College Thesaurus (1997) academic achievement means those qualities or attributes or characteristics or traits of an individual which contributes to or have a learning or effect or influence on the accomplishment or proficiency of performance pertaining to any activity scholastic in nature. According to Craighead and Charles (2001) academic achievement may be defined as "a measure of knowledge, understanding of skills in a specified subject or group of subjects". Whereas According to Dictionary of Education on line Oxford (2008) academic achievement is a measure of knowledge gained through formal education usually indicated by test scores, grade point average and degree. Similarly, teaching-learning process without evaluation turns to a meaningless process and hence good tools of evaluation are the prime requirement of any learning process though there are many tools of evaluation like achievement test, personality test, interest test, aptitude test, attitude test, observation, interview etc. However, achievement test is considered one of the commonly used and accurate means of evaluation. An Achievement test evaluates a learner's understanding of a specific course or study program.

The need was felt to construct an achievement test in social studies for assessing the achievement of the students in the subject at the secondary stage i.e. IX level, as there was lack of suitable achievement test in social studies among the existing tests and the investigator could not get any appropriate standardized achievement test for evaluating learner's achievement selected topics of social studies of class IX, the same was developed and standardized by the investigator herself.

Construction methodology of achievement test

Achievement test in social studies was developed with the

objective to evaluate the knowledge, understanding and applications of the content matter achieved by secondary class students. Before constructing the achievement test, material pertaining to IX class under Punjab School Education Board system was thoroughly analyzed. Then brainstorming sessions with various social science teachers and Assistant professors of various colleges of education were conducted, to seek their valuable views to plan further requirements of constructions.

Purpose of constructing achievement test

The centralized purpose of the achievement test was to evaluate achievement of secondary school students under Punjab School Education Board in the area of social studies.

Target population

This achievement test is mean for those students who have just passed IX class under Punjab School Education Board.

Types of test items

The achievement test consisting of all multiple choice items related to the selected topics was devised by the investigator keeping in mind the objective and content of the items. It was ensured that no objective remained untested. Haladyna and Downing (1993) gave rules while writing multiple choice items

- Vocabulary used was appropriate for the level of test
- Each item was laid out in a clear and consistent manner.
- Independence among items was avoided.
- Such items that provide a clue to the answer of the other items were avoided.
- Use of specific deterrents like always, never, etc was avoided.
- Use of alternatives "all of the above" and "none of the above" were avoided.
- The number of test items framed initially was in large than the number of items retained finally.

According to Zeidner (1987) multiple choice questions avoid losing points for poor spelling, grammar or poor handwriting ability while according to Dufresene, Leonard and Gerace (2002) it is an efficient way to collect and

grade examination from large number of test takers. So the questions were based to evaluate objectives of knowledge, understanding and application.

Preliminary draft of the test

After scrutinizing the items closely, the investigator prepared the preliminary draft of achievement test comprising of 145 items .In writing items, proper care was taken regarding coverage of content, structure, objectives and difficulty of test items. This test was given to 10 social studies teachers/experts to

- Critically analyze the items for the content and language.
- Correct ambiguities
- Check that all the defined objectives are tested.
- Add any other area of relevance
- Suggest any other relevant questions.

Scoring key was also made and got scrutinized. Suggestions made by social studies experts were considered for framing the final draft. After obtaining feedback from experts, some test items were modified and five defective items were removed. In this way preliminary draft with 140 items was prepared.

Table I: Concept-wise distribution of Items included in the preliminary draft

Unit no.	Name of the concepts of Social Studies	No. of the Items
1	Atmosphere	20
2	Disaster Management	25
3	Goods and Market	12
4	Economic and Non-Economic Activities	6
5	Factors of Production	6
6	Factor Payments	13
7	Government- Organs of the Government	28
8	Indian National Congress	13
9	Rise of Extremism	10
10	Non-Cooperation Movement	12
	Total	145

Try-out of the test

The preliminary draft of the test was administered to the sample of 30 students of class X studying in Government Senior Secondary School, Dakha (Ludhiana, Punjab) who had already studied the selected content. This attempt was made to check the difficulty level as well as to remove language problem faced by the students, if any occurring in the construction of the test. After the completion of the test the observations made by the students and problems faced by them were noted down and considered for revising the draft of the test. On the basis of the performance of the students out of 145 items, nine items were clearly

discarded and in 8 items slight changes were made to improve clarity in the wording. Finally 131 items were retained which formed the first draft of the test.

Final Try-out of the test

Final draft of the achievement test was administered to a total sample size of 100 students of X class of Punjab School Education Board of two different schools of Ludhiana district of Punjab, who had already covered the content of the test. After the completion of the achievement test by all the students, the answer key was collected by the investigator, and then the investigator scored the answer key with the help of scoring key. Each item response marked correctly by the students was given 1 mark and wrong and omitted answers had no credit. Analysis of the performance of students was based on the scores obtained by them.

Item Analysis

After the scoring of the test, the item analysis was carried out from two angles i.e. qualitative as well as quantitative. The items were analyzed qualitatively in terms of their content and quantitatively in terms of their statistical properties. The statistical technique used for selecting and rejecting the items was calculation of difficulty value and discriminating power for calculating difficulty value and discriminating power following procedure was followed:

- The answer sheets of all the students were arranged in descending order.
- The top 27% formed upper group and the bottom 27% formed lower group, according to Kelley's dichotomy.
- After that correct responses for each item in both the groups were calculated.

Each group consisted of 27 students. As such difficulty value and discriminating power were calculated from those sub groups making a total of 54 students. For calculating difficulty value and discriminating power the following formulas were used:

$$\text{The difficulty value (DV) of each item} = \frac{R.U + R.L}{N/2}$$

$$\text{Discriminating Power (DP)} = \frac{RH - RL}{N/2}$$

Where:

R.U. = Number of right response in the upper group

R.L. = Number of right response in the lower group

N = Total number of students in both the groups

On the basis of difficulty value and discriminating power a total of 60 items were selected for the final draft.

Table II Objective-wise distribution of items included in the final draft is depicted below:

Unit No.	Name of the Concepts of Social Studies	Knowl- edge	Under- standing	Appli- cation	To- tal
1	Atmosphere	2	2	2	6

2	Disaster Management	6	3	3	12
3	Goods and Market	4	2	1	7
4	Economic and Non-Economic Activities	1	1	1	3
5	Factors of Production	1	-	1	2
6	Factor Payments	3	1	1	5
7	Government- Organs of the Government	5	4	2	11
8	Indian National Congress	1	1	1	3
9	Rise of Extremism	2	2	1	5
10	Non-Cooperation Movement	3	2	1	6
	Total	28	18	14	60

predications, made from its scores. The test was validated against the criteria of "Content Validity". The content validity is concerned with the relevance of the contents of the items, individually and as a whole. To determine content validity of the achievement test, test was given ten social studies teachers and five experts to compare test items with the content and objectives of content. Out of the five experts three experts have also solved the tests so the scoring key could be verified. The experts agreed with the investigators on the distribution of the test items to objectives as well as with scoring of the test. This established the content validity of the test.

Reliability of the test

Reliability refers to the consistency of the scores obtained by the same individual when re-examined with the same test on different occasions or with different sets of equivalent items or under the variable examining conditions (Anastasi, 1951). Guilford (1956) regards reliability as the alternate form method indicates both equivalence of content and stability of performance.

In the present study the reliability of the achievement test was calculated test-retest method. The reliability study of achievement test was conducted over a sample of 40 students. The second administration of the test was carried out after a gap of 2 weeks. The product movement coefficient of correlation for the two test score was found to be 0.90. This coefficient of correlation is fairly high, which testifies the soundness of the test.

Validity of the test

Validity of the test refers to the degree to which it measures or what it intends to measure. Validity of the test must be established prior to use and is the accuracy of specific

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