



Construction and Standardization of Teaching Aptitude Test

MANSI DIMPLE MODI
Researcher,
Department of Education,
Monark University, Dehgam.

DR. PARULBEN PATEL
Research Guide,
Department of Education,
Monark University, Dehgam.

Abstract:

The present study aimed to construct and standardize a Teaching Aptitude Test specifically for primary school teachers in the South Gujarat region. The test development process included item construction, expert validation, pre-testing, primary piloting, item analysis, and statistical validation to ensure reliability and validity. A final version of the test containing 47 multiple-choice questions was administered to a stratified random sample of 200 teachers. The findings revealed a significant difference in teaching aptitude between urban and rural teachers, with urban teachers scoring higher. However, no significant difference was found between male and female teachers. The study provides a reliable and valid tool for assessing teaching aptitude and offers insights into factors influencing teacher effectiveness.

Keywords: Teaching Aptitude, Test Construction, Standardization, Primary School Teachers, South Gujarat, Reliability, Validity, Urban-Rural Differences, Gender Comparison, Educational Assessment

1. Introduction

The strength of any education system largely depends on the capabilities of its future teachers. Discovering and nurturing teaching potential from a young age can significantly influence the development of skilled and enthusiastic educators. Teaching aptitude involves a person's natural or learned ability to understand, facilitate, and manage the teaching-learning environment effectively. While this aptitude is usually measured in adults during pre-service or in-service teacher training, exploring its early signs in primary school students presents a fresh and innovative research direction.

Creating a dependable and valid test requires a thorough and systematic process, including item formulation, trial testing, statistical validation, and standardization. This research intends to bridge the gap by developing a scientifically grounded and age-appropriate aptitude test, aiming to promote early guidance and foster a future generation of capable educators.

2. Teaching Aptitude

Teaching aptitude is the ability or potential of an individual to perform effectively in the role of a teacher. It encompasses a range of qualities such as clear communication, patience, empathy, classroom control, problem-solving, and the capacity to inspire and engage students. More than just academic knowledge, teaching aptitude reflects how well a person can convey ideas, adapt to students' needs, and create a supportive and productive learning environment. It plays a vital role in determining one's suitability for the teaching profession and is often measured to identify those best equipped to guide and educate learners.

According to Mangal, S. K. (2009),

“Teaching aptitude is the potential or ability to teach effectively, which includes a combination of skills such as communication, classroom management, understanding learners' needs, and the ability to deliver content in an engaging manner.

According to Freeman, F. S. (1971),
“Teaching aptitude refers to an individual’s ability or capacity to acquire the skills and competencies necessary for effective teaching.”

3. Objectives

Objectives of present study are given as below:

- 1.To construct Teaching Aptitude Test for primary school teachers.
- 2.To find out reliability of Teaching Aptitude Test.
- 3.To find out validity of Teaching Aptitude Test.
- 4.To study teaching aptitude of primary school teachers.
- 5.To study teaching aptitude of primary school teachers in the context of area.
- 6.To study teaching aptitude of primary school teachers in the context of gender.

4. Variables

Variable of present study are given as below:

4.1 Independent Variables

(1) Area of School

- Urban
- Rural

(2) Gender

- Male Teachers
- Female Teachers

4.2 Dependent Variables

Scores of Teaching Aptitude Test

5. Hypotheses

Hypotheses of present study are given as below:

- Ho₁ There is no significant difference between mean scores of Teaching Aptitude Test obtained by primary school teachers of urban and rural area.
- Ho₂ There is no significant difference between mean scores of Teaching Aptitude Test obtained by male and female teachers.

6. Research Method

The main objective of researcher was to construct, standardize and apply Teaching Aptitude Test to primary school students. The researcher constructed a Teaching Aptitude Test and apply this on a randomly selected sample from South Gujarat region. In this research, the researcher used Descriptive Survey method for data collection.

7. Population and Sample

The researcher selected a random sample of 100 primary school teachers from different schools of South Gujarat region. A stratified random sample of primary school teachers are drawn in below table.

Table 1: Sample of the Study

Area/Gender	Urban	Rural	Total
Male	50	50	100
Female	50	50	100
Total	100	100	200

As mentioned in above table, the researcher selected 50 male and 50 female teachers from urban area and 50 male and 50 female teachers from rural area of South Gujarat region.

8. Construction of Research Tool

The researcher constructed a Teaching Aptitude Test for primary school teachers selected from South Gujarat region. In construction of Teaching Aptitude Test, the researcher used scientific test as mentioned below.

1. Construction of Primary form of Teaching Aptitude Test

At primary level, the researcher constructed 50 multiple choice questions in teaching aptitude test. Each question has four responses, out of which only one response is correct, other three responses are incorrect.

2. Experts' Opinions

Teaching Aptitude Test was sent to different experts who were research experts, research guides and faculties of education colleges. They were asked for their feedback and suggestions. The researcher modified Teaching Aptitude Test as per suggestions given by experts.

3. Pre-primary piloting

For pre-primary piloting, the researcher selected 20 primary school teachers from population. The researcher gave Teaching Aptitude Test to selected teacher. The researcher amended the questions in which teachers found difficult to be understand.

4. Primary Piloting

For primary piloting, the researcher selected 200 teachers from population. The researcher gave Teaching Aptitude Test to selected teachers and obtained their responses on it. The researcher performed item analysis of responses obtained by the researchers.

5. Item Analysis

For item analysis, the researcher arranged teachers according to their scores in descending order. Then the researcher created two groups of teachers. In one group upper 27% (54) teachers were assigned, in second group lower 27% (54) teachers were assigned. Then researcher conducted a t-test between mean scores of each question obtained by upper and lower group of teachers.

According to these t-test, 3 questions were left from final test. Thus, in final test, there were 47 questions and as each question has 1-mark, total marks were 47 for final Teaching Aptitude Test.

9. Reliability of Test

The researcher found different types of reliability as mentioned in below table:

Table 2: Different types of Reliability

No.	Type of Reliability	Reliability Value
1	Test-Retest Reliability (Karl Pearson)	0.88
2	Split-Half Reliability 1) Spearman Brown 2) Rulon 3) Flanagan	0.87 0.91 0.83
3	Gutman Split Half	0.94
4	Cronbach Alpha	0.95
5	Kuder Richardson 1) KR ₂₀ 2) KR ₂₁	0.89 0.90

10. Validity of Test

The researcher found following types of validity of test.

1. Face Validity

The researcher collected feedback of different research experts and amended whole test as per their suggestions. Thus, it is said that the Teaching Aptitude Test has a very good face validity.

2. Content Validity

The researcher very carefully constructed each item of Teaching Aptitude Test. Faulty items were also amended during preprimary piloting, primary piloting and item analysis. Thus, it is said that Teaching Aptitude Test has very good content validity.

11. Data Collection

The researcher selected 200 primary school teachers from South Gujarat region. The researcher visited different schools and gave Teaching Aptitude Test to teachers. The teachers were given 60 minutes to complete the Teaching Aptitude Test. After completion of test, all respond sheets were carefully collected by the researcher. Later, all respond sheets were checked and gave them test scores.

12. Data Analysis

The researcher constructed 2 hypotheses to check effect of independent variables on teaching aptitude of primary school teachers. The results of t-tests are given in below tables.

H₀₁ There is no significant difference between mean scores of Teaching Aptitude Test obtained by primary school teachers of urban and rural area.

Table 3: Result of t-test between mean scores of Teaching Aptitude Test obtained by primary school teachers of urban and rural area

Area	N	M	SD	SED	t-value	Significance
Urban	100	38.28	4.70	0.69	5.32	0.01
Rural	100	34.63	5.01			

df	0.05	0.01
198	1.97	2.60

According to above table, calculated t-value between mean scores of Teaching Aptitude Test obtained by primary school teachers of urban and rural area is 5.32. For df=198, table t-values are 1.97 at 0.05 level and 2.60 at 0.01 level. Calculated t-value is more than table value at both levels. Therefore, hypothesis is rejected and there is a significant difference between mean scores of Teaching Aptitude Test obtained by primary school teachers of urban and rural area. Moreover, mean score of primary school teachers of urban area is more than mean score of primary school teachers of rural area. This revealed that the primary school teachers of urban area have more teaching aptitude than rural area.

H₀₂ There is no significant difference between mean scores of Teaching Aptitude Test obtained by male and female teachers.

Table 4: Result of t-test between mean scores of Teaching Aptitude Test obtained by male and female teachers

Gender	N	M	SD	SED	t-value	Significance
Male	100	36.57	4.86	0.69	0.35	NS
Female	100	36.33	4.84			

df	0.05	0.01
198	1.97	2.60

According to above table, calculated t-value between mean scores of Teaching Aptitude Test obtained by male and female teachers is 0.35. For df=198, table t-values are 1.97 at 0.05 level and 2.60 at 0.01 level. Calculated t-value is more than table value at both levels. Therefore, hypothesis is not rejected and there is no significant difference between mean scores of Teaching Aptitude Test obtained by male and female primary school teachers. This revealed that the male and female primary school teachers have equal teaching aptitude.

13. Major Findings

1. The primary school teachers of urban area have more teaching aptitude than rural area.
2. The male and female primary school teachers have equal teaching aptitude.

14. Conclusion

This study focused on constructing and standardizing a Teaching Aptitude Test for primary school teachers in South Gujarat. A 47-item multiple-choice test was developed through expert feedback, piloting, and statistical analysis. The test showed high reliability and strong validity. Data from 200 teachers revealed that urban teachers had significantly higher teaching aptitude than rural teachers, while no significant difference was found between male and female teachers. The test serves as a useful tool for assessing and enhancing teacher quality.

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