CHAPTER 6
FINDINGS, CONCLUSIONS, EDUCATIONAL IMPLICATIONS AND SUGGESTIONS

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CHAPTER 6

FINDINGS, CONCLUSIONS, EDUCATIONAL IMPLICATIONS AND SUGGESTIONS

6.1 Introduction:

The most difficult phase of aptitude-testing is interpretation of results. After the test has been carefully administered and painstakingly scored, the findings must be appraised and translated into information helpful to the individual examined. The present chapter deals with summary and major findings of the study. Conclusions, Educational implications of the findings, and suggestions for further research in the area were also presented in this chapter.

6.2 Fundamental base of the Research:

A teacher’s aptitude is the capacity to become an excellent teacher. Characteristics of a teacher were there, but still in dormancy. These dormant characteristics were highly unfolded in the process called training. Teacher trained with right type of aptitude could take a full advantage of the teacher training programme in the making themselves better teacher. Hence, the research on Teaching Aptitude is a very fruitful area. Looking to the reality, there is a need of good, valid instrument for measuring Teaching Aptitude of the B.Ed. Students aspiring to be secondary school teachers’ future.

In order to build a valid test of Teaching Aptitude, it was first necessary to define very closely the term ‘Teaching Aptitude’ that was proposed to be measured. This has been done by reviewing a few tests constructed by some experts in the field in foreign countries and in India. Moreover, the theory and finding of some researches also helped the
investigator to come to a definite conclusion. This work has been initiated with 30 traits contributing to successful teaching. Ranking, like-minded nature of some traits and immeasurable (by verbal test) nature of some traits have brought this number down to 29 out of 30 traits to find place in the test. The test under report has thus covered 29 teacher traits as shown hereunder:

- **Teacher traits**:

  1. Teacher's Research Activity
  2. Teacher's Reading Interest
  3. Expertise in Teaching
  4. Verbal Expression
  5. Skilful Use of Teaching Aids
  6. Awareness for Education
  7. Follow of the Code of Conducts
  8. Use of Spare/Free Time
  9. Appreciation of Others
  10. Feeling for Cooperation
  11. Knowledge of Teaching Methods
  12. Concept Clarity of Curriculum
  13. Knowledge of Measurement and Evaluation
  14. Ability of Planning Activities
  15. Readiness for Taking Responsibility
  16. Readiness for Obedience
  17. Teacher's Innovative Efforts
  18. Acceptance of Social Responsibility
These teacher-traits have again been grouped and the test has accordingly divided into five sub-tests, viz. the sub-test – I for ‘Innovation-Research in Education and Interest and Attitude towards Teaching’, the sub-test – II for ‘Teacher’s Mastery in Subject-matter, Method and Evaluation’, the sub-test – III for ‘Teacher’s Commitment’, the sub-test – IV for ‘Teacher’s Human Relationships and Social Dedication’ and the sub-test – V (in three sections) for ‘Mental Abilities’.

Selection of test items which is considered to be the crux of the process of standardization was made by carefully applying the statistical methods. This was done with a view to obtaining the internal consistency of the test. To add to its utility value, the test has been standardized by strictly following the principles and procedure for the same. The process of standardization has been fully described in detail in the chapter – 4 of this thesis. Reliability of the test has been established by various methods with an objective of overcoming the limitation of any one particular
method. Validity has also been established by following the general principles of test validation, particularly Teaching Aptitude test.

In short, the test has been standardized on a sufficiently large and adequate representative sample. Sex and percentile norms, standard scores-scores and percentile rank have been established to help the user to interpret the test scores.

To point out to the teachers and research workers, the investigator has also attempted to study a few related problems of teaching profession. This clearly indicates that the test could be used with ease for further researches in the field of Teaching Aptitude which may prove to be an eye opener for teacher training institutes and school-managers. From this brief discussion, the intention is to bring out the fact that the test is well standardized and could be used with precision.

6.3 Summary of the Study:

Some important information regarding the research has been put-up over here. The thorough reading of the report has not been possible, due to the lack of time. In order to get the conceptual clarity of the study, the summary of the research has been presented as follows:

6.3.1 Statement of the Problem:

The study undertaken by the researcher was entitled as,

CONSTRUCTION AND STANDARDIZATION OF A TEACHING APTITUDE TEST FOR B. ED. STUDENTS

In this research, the researcher has constructed and standardized a Teaching Aptitude Test for B. Ed. Students keeping in context certain variables - I.Q., E.Q., Academic Achievement Score, Recreational Activities, Parent’s Occupation, and Sex of B.Ed. students.
6.3.2 Objectives of the Study:

The present study has the following objectives:

1. To construct a Teaching Aptitude Test for B.Ed. students of Gujarat state.

2. To standardize the Teaching Aptitude Test for B.Ed. students of Gujarat state in terms of its reliability, validity and norms for male and female students.

3. To study the Teaching Aptitude of B.Ed. students of Gujarat state in context of their Intelligence Quotient (I.Q.).

4. To study the Teaching Aptitude of B.Ed. students of Gujarat state in context of their Emotional Quotient (E.Q.).

5. To study the Teaching Aptitude of B.Ed. students of Gujarat state in context of their B.Ed. achievement score (Theory & Practical).

6. To study the Teaching Aptitude of B.Ed. students of Gujarat state in context of their recreational activities.

7. To study the Teaching Aptitude of B.Ed. students of Gujarat state in context of their parent’s occupation.

8. To study the Teaching Aptitude of B.Ed. students of Gujarat state in context of their sex.

9. To establish regression equations to predict the Teaching Aptitude of B.Ed. students from the score of the sample of independent variables.
6.3.3 Hypotheses of the Study:

The present study involved the following hypotheses:

H₁: There is a significant correlation between the mean Intelligence Quotient (IQ) Scores and Teaching Aptitude Scores of the Students.

H₂: There is a significant correlation between the mean Emotional Quotient (EQ) Scores and Teaching Aptitude Scores of the Students.

H₃: There is a significant correlation between the mean Academic Achievement Scores and Teaching Aptitude Scores of the Students.

H₄: There is a significant correlation between the mean Teaching Aptitude Scores of the Students having different groups Recreational Activities.

H₅: There is a significant correlation between the mean Teaching Aptitude Scores of the Students having Teacher and Non-Teacher Parents.

H₆: There is a significant correlation effect of interaction between / among Independent Variables on the Dependent Variable.

H₇: There is no significant difference between the mean Teaching Aptitude Scores of the Students having different levels of IQ.

H₈: There is no significant difference between the mean Teaching Aptitude Scores of the Students having different levels of EQ.
\( H_{09} \): There is no significant difference between the mean Teaching Aptitude Scores of the Students having different levels of Academic Achievement scores.

\( H_{10} \): There is no significant difference between the mean teaching aptitude scores of the Students having different levels of Recreational Activities.

\( H_{011} \): There is no significant difference between the mean teaching aptitude scores of the Students having Teacher Parents and Non-Teacher Parents.

\( H_{012} \): There is no significant difference between the mean teaching aptitude score of Male and Female Students.

6.3.4 Population and the Sample:

The Students of B.Ed. Colleges of Gujarat State of the academic year 2010-11 were the population of the study. The sample of the study was selected by the researcher as follows:

**Table 6.1**

**Selection of the Sample**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Stage-wise Sample</th>
<th>Selection Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Distribution of Gujarat State into Four Zones</td>
<td>Stratification Sampling</td>
</tr>
<tr>
<td>2.</td>
<td>Selection of Universities/Colleges from Zones</td>
<td>Random Sampling</td>
</tr>
<tr>
<td>3.</td>
<td>Selection of B. Ed. Students</td>
<td>Random Sampling</td>
</tr>
</tbody>
</table>
6.3.5 Variables of the Study:

The study involved the following variables:

**Table 6.2**

Variables of the Study

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Name of Variable</th>
<th>Type</th>
<th>Levels/Groups</th>
<th>Details</th>
<th>Tool used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intelligence Quotient (IQ)</td>
<td>Independent</td>
<td>3</td>
<td>-High</td>
<td>Adopted Gujarati version of Gardner’s Multiple Intelligence test</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Middle</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Low</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Emotional Quotient (EQ)</td>
<td>Independent</td>
<td>3</td>
<td>-High</td>
<td>Emotional Quotient (EQ) Scale by Dr. Pallavi P. Patel &amp; Hitesh Patel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Middle</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Low</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Academic Achievement Score</td>
<td>Independent</td>
<td>3</td>
<td>-High</td>
<td>Result sheets of University Examination</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Middle</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Low</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Recreational Activities</td>
<td>Independent</td>
<td>3</td>
<td>-Academic</td>
<td>From the Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Entertainment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Other</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Parent’s Occupation</td>
<td>Independent</td>
<td>2</td>
<td>-Teacher</td>
<td>From the Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Non-teacher</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Sex</td>
<td>Independent</td>
<td>2</td>
<td>-Boys</td>
<td>From the Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Girls</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Teaching Aptitude</td>
<td>Dependent</td>
<td>3</td>
<td>-High</td>
<td>Self constructed Teaching Aptitude Test (TAT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Middle</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Low</td>
<td></td>
</tr>
</tbody>
</table>
6.3.6 Construction of the Tool and its Application:

The researcher had followed the following general steps in the construction of tool and its Application:

1. JOB ANALYSIS
2. TENTATIVE SELECTION OR CONSTRUCTION OF TESTS
3. EXPERIMENTAL TRYOUT OF THE TEST
4. SETTING UP DIRECTIONS FOR ADMINISTRATION AND SCORING; THE ESTABLISHMENT OF NORMS
5. FOLLOW-UP STUDIES TO DETERMINE THE PREDICTIVE VALUE OF THE TEST.

6.3.7 Standardization of the Tool:

The test was standardized following the stages of Pre Try-Pilot, Pilot, and the final form of the test applying on the sample of 400, 500 and 1000 respondents, respectively. The norms establishment, reliability and validity of the test were found to standardize the tool.

- **Norms Establishment**:

  The Teaching Aptitude norms were established converting the row scores into Standard Scores applying the following formula:

  \[ Z = 16z + 100. \]
○ **Reliability:**

The reliability of study was found out applying the following three methods:

1. Test-Retest method
2. Split-half method
3. K-R Method

○ **Validity:**

1. Content Validity
2. Predictive Validity

6.3.8 **The Statistical Techniques for Data Analysis:**

The following Statistical Techniques used in the analysis of the data:

1. Pearson's Product Moment Coefficient of Correlation 'r'
   followed by
   a) Test of significance of 'r's.
   b) 0.95 Confidence Interval of 'r's.
   c) Coefficient of determination, r² x 100
2. Step wise Multiple Regression Analysis (ANOVA approach)
3. Two tailed Test of Significance of Mean Difference for large independent samples.
4. One-way Analysis of Variance.
6.4 **Findings of the Study:**

The findings of the study have been presented keeping in view the research objectives and hypotheses formulated for the study.

6.4.1 **Findings based on the Raw-score:**

1. The frequency distribution of the raw scores of B.Ed. Students was in normal probable curve.

2. The frequency distribution of the raw scores of B.Ed. Students on the base of their sex was slightly leptokurtic in nature.

3. There was no significant difference between the mean performance of male and female B.Ed. Students. Hence, it could be concluded that the gender does not create any effective difference on the Teaching Aptitude of B. Ed. Students.

4. Items having the discriminative index at 0.20 or more have been selected for the test. Therefore, the test is neither difficult nor easy.

5. Difficulty value of the individual test items range between 20 to 80 percent. The justification of sampling and the study of the Kurtosis also reveal that the test was quite suitable for the group chosen.
6.4.2 Findings based on the Reliability of the Test:

- The reliability of the test as calculated by Test- Retest Method was **0.77**, which was found comparatively well.

- The reliability of the test as calculated by Split-Half Method was **0.76**, which was also found comparatively well.

- The reliability of the test as calculated by Kuder-Richardson Method was **0.81**, which was also found comparatively very well.

- The reliability found by different methods is obviously high which means that the teaching aptitude test is reliable one.

6.4.3 Findings based on the Validity of the Test:

- The Content Validity has been decided on two groups, experts opinion and validity index. As for the validity index, items showing more than 0.20 validity index have been selected and those below that have been rejected. The test items are highly valid.

- The Predictive Validity of the test has been established by correlating the scores on, with the University marks in B. Ed. Examination. The validity correlation co-efficient were **0.78** on Pearson’s Product Moment ‘r’. The test is highly valid.

- The correlation found by the methods is substantially positive which means that the teaching aptitude test is valid one.
6.4.4 Findings based on the Related Studies:

There were five studies conducted to study the main effect of Independent Variables on Dependent Variable i.e. Teaching Aptitude.

1. It is found that there is positive significant correlation between teaching aptitude and IQ, it means that as the IQ level increases the teaching aptitude increases or as the IQ level deceases the teaching aptitude also decreases.

2. It is found that there is positive significant correlation between teaching aptitude and EQ, it means that as the EQ level increases the teaching aptitude increases or as the EQ level deceases the teaching aptitude also decreases.

3. It is found that there is positive significant correlation between teaching aptitude and Academic Achievement, it means that as the Academic Achievement level increases the teaching aptitude increases or as the Academic Achievement level deceases the teaching aptitude also decreases.

4. It is found that there is no significant correlation between teaching aptitude and Recreational Activities; it means that Recreational Activities and teaching aptitude are independent factors.

5. It is found that there is no significant correlation between teaching aptitude and Parent’s Occupation; it means that Parent’s Occupation, does not affect the teaching aptitude of the students.
6. IQ variable interacts with EQ and Academic Achievement of B.Ed. Students while functioning on Teaching Aptitude, which means IQ, EQ and Academic Achievement, has positive relationship with one another.

7. Dependant variable, Teaching Aptitude ($X_6$) can be significantly predicted by only one predictor variable Academic Achievement ($X_3$). The regression equation developed is, $X_6 = 0.147 X_3 + 34.506$ Predictive efficiency of the variable Academic Achievement is 9.30 per cent indicating that 9.30 per cent of the variable in Teaching Aptitude is accounted for by the predictor variable, Academic Achievement.

8. It is found that there is a significant difference in the teaching aptitude of the group of students having different levels of IQ.

9. It is found that the group of students having high level of IQ possesses the high teaching aptitude than the group of students having middle level of IQ.

10. It is found that the group of students having middle level of IQ possesses the high teaching aptitude than the group of students having low level of IQ.

11. It is found that the group of students having high level of IQ possesses the high teaching aptitude than the group of students having low level of IQ.
12. It is found that there is a significant difference in the teaching aptitude of the group of students having different levels of EQ.

13. It is found that the teaching aptitude of the group of students having high EQ level is higher than the group of students having middle IQ level.

14. It is found that the teaching aptitude of the group of students having middle EQ level is higher than the group of students having low IQ level.

15. It is found that the teaching aptitude of the group of students having high EQ level is higher than the group of students having low IQ level.

16. It is found that there is a significant difference in the teaching aptitude of the group of students having different levels of Academic Achievement.

17. It is found that the group of students having high level of Academic Achievement possesses the high teaching aptitude than the group of students having middle level of Academic Achievement.

18. It is found that the group of students having middle level of Academic Achievement possesses the high teaching aptitude than the group of students having low level of Academic Achievement.
19. It is found that the group of students having high level of Academic Achievement possesses the high teaching aptitude than the group of students having low level of Academic Achievement.

20. It is found that there is no significant difference in the teaching aptitude between the groups of students having different levels of Recreational Activities. It means that Recreational Activities does not affect the teaching aptitude of the students.

21. It is found that there is no significant difference in teaching aptitude between the groups of students having teacher parents and non-teacher parents. It means that parent’s occupation does not affect the teaching aptitude of the students.

22. It is found that there is no significant difference in teaching aptitude between the Male Students and Female Students. It means that the teaching aptitude of Male and Female students is same.

6.5 CONCLUSIONS

One of the major conclusions is the success of the researcher in constructing and standardizing the tool – Teaching Aptitude Test – to test the teaching aptitude of B.Ed. students. The researcher also try-out the tool and found out satisfactory results. It is a contribution of the researcher to the field of education.
Among the five predictor variables of the study, IQ, EQ, and Academic Achievement are the variables having significant relationship with Teaching Aptitude and among the three predictor variables of the study, Academic Achievement is the single variable having highly significant relationship with Teaching Aptitude. Again, it is the only relationship between Teaching Aptitude and Academic Achievement which differs significantly among the three variables.

The second predictor variable that comes to this line is, EQ. EQ has significant relation with Teaching Aptitude, but not a predicting variable. EQ is related with two constructs of Teaching Aptitude viz., IQ and Academic Achievement and in these two cases, EQ becomes a predicting variable.

The third in this position is IQ which is related with Teaching Aptitude but not capable of predicting.

Other teaching variables noted are Recreational Activities and Parent’s Occupation. These variables have no relationship with Teaching Aptitude, and its five constructs. This suggests that even though teacher trainees have the capacity to teaching, they were not interested in doing teaching or teaching related activities, pointing to the development of a group of non committed teachers. There is no relationship between Parent’s Occupation and Teaching Aptitude.

Thus the study has found Academic Achievement as the major variable having relation with Teaching Aptitude and capable of predicting Teaching Aptitude.
6.6 Educational Implications:

Secondary teacher education i.e. B.Ed. and the period of internship plays an important role in the preparation of secondary school teacher. As it is the cornerstone of the educational developments and achievements of a student, the selection of appropriate persons to the teaching profession is highly significant. As such, findings of this study were highly worthy and notable. Among the five predictor variables of the study, Academic Achievement is the single variable having highly significant relationship with Teaching Aptitude compared to all of its five constructs. IQ has significant relation with Teaching Aptitude, but not a predicting variable. Academic Achievement is related with the two constructs of Teaching Aptitude viz., IQ and EQ and in these two cases Academic Achievement becomes predicting variable. The investigator finds some of the implications additional to note were:

1. Academic Achievement was found as the major factor related with Teaching Aptitude and its other five constructs. Therefore at least at the beginning of pre service training, students were to be tested for either Teaching Aptitude or for Academic Achievement and evolve measures for developing their capacity to teach.

2. Evolve strategies and techniques by way of giving exposures to good teaching and realize them the outcomes of such teaching.

3. Ask them to prepare the life histories of successful teachers within India and outside and to narrate their contributions to the society.

4. A teacher becomes a committed teacher only when the teacher possesses the talent for teaching, Attitude towards Teaching and interest in it. Therefore, pre service teacher educators were to find out ways and means of developing Teaching Interest also along with other factors.
5. Educational administrators were to adopt a selection criterion for the secondary teacher trainees by giving weightings to the Test of Teaching Aptitude and Academic Achievement.

6. Academic Achievement of the teacher trainees is to be seen as a determinant factor of teaching aptitude for the selection of teaching profession.

7. At the time of pre-service training, more experiences were to be given to update their Instructional Awareness as an important factor of teaching aptitude.

8. By giving lively, practical and educational problematic situations for finding solutions, the ability of educational problem solving can be developed in context with teaching aptitude.

9. It is not necessary that creative thinking will be enhanced without considering teaching aptitude.

10. During pres-service training, promote trainees sufficient opportunities for attending video clippings of talented teacher’s classes and ask them to make creative criticisms based on those which will create Teaching Interest and a positive attitude towards Teaching Profession.

6.7 Suggestions for the Further Study:

A research is hardly ever complete in itself. There is always a scope for doing some further studies on it. A number of points, doubts and difficulties that were faced by the investigator during the long process of investigation have enabled him to suggest some problems for further research in this area. They are as under:

- Relationship between Teaching Aptitude and training performance.
- Relationship between Teaching Aptitude and classroom ethos.
- Teaching Aptitude and management of instructions.
- Relationship between Teaching Aptitude, teacher moral and teacher personality.
- Relationship between Teaching Aptitude and teaching behavior.
- A comparative study of the Teaching Aptitude of teachers in Gujarat and any other state of India towards the teaching profession.
- A study of Teaching Aptitude of primary school teachers of Gujarat state in the context of some psycho-socio variables.