A Study Of Relationship Of Academic Achievement With Aptitude, Attitude And Anxiety

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Abstract

Teaching is a wholesome activity. The teacher's personality factors are equally responsible for his/her effectiveness in the teaching learning process. Much emphasis is given to the academic achievement of teachers thereby ignoring the personality parameters. The present research is designed to study the relationship of academic achievement with teaching aptitude, attitude and anxiety in M.Ed. students. A sample of 296 M.Ed. students from the department and colleges of Education affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad was selected randomly for the study. Standardized test were used for assessment of teaching aptitude, attitude and anxiety in M.Ed. students. Linear regression was used as a statistical tool for inferential analysis on the collected data. It was found that teaching aptitude level and anxiety are significant predictors of the academic achievement score in M.Ed. students. Anxiety was found to have a negative relationship to the academic achievement. It is recommended that more study should be done for role of anxiety in the area of teacher education.

Keywords: Teaching Aptitude, Teaching Attitude, Anxiety, Academic Achievement
INTRODUCTION AND LITERATURE REVIEW

Teaching is an activity, a unique, creative, rational and human activity. It is called not merely an art, but the most difficult of all arts and profound of all sciences. Teaching is therefore an intricate, complex and conscious activity. The teacher’s personality plays a very important role in the teaching learning process. Generally the academic scores of the teachers are considered to judge their efficiency and effectiveness. But, the personality variables are not considered in academics thereby questioning the importance given to academic scores.

Studies have indicated that teaching aptitude has a positive correlation with academic achievement (Dushyant Kaur, 2007 and Arya Saurabh, 2013) and has a significant relationship with academic achievement (M.B. Ushakumari, 2008). The relationship between Teaching Attitude and academic achievement was not found to be significant (GCPI, 1981 and Mamta Garg & Sudesh Gakhar, 2009). The teaching aptitude of male and female teachers varies significantly (S.M Ganoje, 2011) with female trainees have higher teaching aptitude than male trainees (Anita Devi, 2013 and Arya Saurabh, 2013). Teaching Attitude was generally found positive, the attitude of girls was more positive as compared to boys and Government college students had a more positive attitude towards teaching profession as compared to private colleges (Pradeep V Patil, 2000). It was also found that elementary school teachers have more teaching aptitude than the secondary school teachers (Jan Tasleema, Malik Muddasir Hamid, 2012) and the secondary school men and women science teachers have a significant difference in their teaching aptitude with the men science teachers having a higher teaching aptitude than women science teachers (Rao D B, 2013) but the teaching aptitude did not vary significantly for government financed and self financed teachers (Anita Devi, 2013). There was no difference in the attitude of teachers in aided and unaided schools with reference to gender, experience, academic qualification, pay-scale and level of education (Thilakan Sindhu, 2013 and Mishra SG, 2007). A significant positive correlation was found between the admission test score and teaching attitude but negative correlation with academic achievement (Mishra SG, 2007).
Anxiety and its relationship to academic achievement is not widely studied especially in the area of teacher education. The relationship between test anxiety and scholastic achievement is negative and significant i.e., the more anxious the student is, the less achievement is his/her performance in the examination for statistics, mathematics and medical students (Ilangovan K.N & Rangaraj K.R, 2001; Yeh YC and others, 2007 and El-Anzi & Freih Owayed, 2005). Another study concluded that there is a significant difference in the anxiety of intermediate arts and science students and the anxiety is negatively correlated to academic achievement (Talwar Vibha, 2013). Academic achievement could be enhanced by manipulating the levels of anxiety, emotional maturity and social maturity and anxiety showed negative relationship with academic achievement (Singh Surjit, 2013). The successful (passed) science male students had significantly high anxiety than the successful female science students but there was no significant difference between the anxiety of male and female failed students (Vandana Gupta, 2014). Boys and girls as well as rural and urban students differed significantly on the basis of their anxiety (Singh Surjit, 2013). It has also been found that there is no significant difference between Academic Anxiety of the male and female students of Xth class in both Private and Government Schools (Dhull Jitendra, 2013). Boys and girls did not differ significantly with respect to their mean score on academic anxiety, but still the mean score of girls was higher than boys indicating girls possess higher academic anxiety in comparison to boys (Kanchan Bala, 2014).

Much attention has been given to the impact of attitude, aptitude and anxiety on the student achievement in the teaching and learning process. Various teaching techniques and methodologies have been developed for the purpose of alleviating anxiety in order to maximize learning. Although numerous studies have indicated that positive aptitude and attitude tend to facilitate learning process, there have been very few quantitative studies on the role of anxiety in achievement specifically in the field of teacher education. The present study deals with the study of relationship of teaching aptitude, attitude and anxiety in M.Ed. students with their academic
achievement. This research is a part of the comprehensive relationship analysis of the teaching aptitude, attitude and anxiety with academic achievement of the M.Ed. students.

OBJECTIVES

- To study the relationship between academic achievement score of M.Ed. students with their Attitude, Aptitude and Anxiety Score

HYPOTHESIS

- Aptitude score, attitude scores and anxiety scores are significant predictors of academic achievement score.

PROCEDURE

The research methodology used for this study is Survey Method. The researcher collected the data regarding the aptitude, attitude and anxiety of the M.Ed. students using the following standardized tools:

- Teacher Aptitude test developed by Jai Prakash and R.P. Shrivastava – A highly valid and reliable test of teaching aptitude consisting of 150 items with 10 sub-tests consisting of 15 items each.
- Teacher Attitude Inventory developed by S.P. Ahluwalia – A very popular valid and reliable inventory for assessment of Teaching Attitude. It is a 90 item Likert instrument consisting of six sub-scales.
- Comprehensive Anxiety Test developed by Sharma, R. L. Bharadwaj and M. Bhargava – This highly reliable and valid test has 90 items relating to the symptoms of the anxiety and possess the capacity to evoke the responses correctly.
The academic achievement score is the final percentage of marks obtained in B.Ed. course. It was collected using a self-made form.

Variables for the study

- Independent

1. Aptitude Score: The score obtained on Teacher Aptitude test developed by Jai Prakash and R.P. Shrivastava.
2. Attitude Score: The score obtained on Teacher Attitude Inventory developed by S.P. Ahluwalia.
3. Anxiety Score: The score obtained on Comprehensive Anxiety Test developed by Sharma, R. L. Bharadwaj and M. Bhargava.

- Dependent

1. Academic Achievement Score: It is the final percentage of marks obtained in B.Ed. course.

There are two university departments and fifteen colleges of education affiliated to Dr. Babasaheb Ambedkar Marathwada University offering regular pre-service M.Ed. course. A random sample of 296 M.Ed. students was selected from the students enrolled for the M.Ed. (pre-service) course in Education for the academic year 2012-13 and 2013-14. There were 169 female and 127 male M.Ed. students in the selected sample. The researcher personally administered the tool to the sample and collected the data. The tests were scored; tabulated and descriptive statistics were calculated using MS Excel. The data was analyzed using linear regression. The regression analysis was carried out between academic achievement score, aptitude score, attitude score and anxiety score.
FINDINGS

To find the relationship researcher has done the simple regression analysis between the Academic achievement score and Aptitude score, Attitude score and Anxiety score. To check the normality of the data normal probability graph and Homoscedasticity graph were plotted.

1. Normal probability Plot – The normal probability plot for the residuals should be approximately straight line. Here we can conclude that residuals are normally distributed.

2. Homoscedasticity - The residuals versus variable(s) should not have any pattern. If there is a pattern then a transformation is required or additional polynomial is to be added. Here errors have no patterns with variable data so regression equation established over is appropriate.
Graph 2: Homoscedasticity of Residuals [Regression Achievement score and Aptitude, Attitude and Anxiety Score]

To find the relationship between the independent and dependent variables, the researcher has done the simple regression analysis between the Academic achievement score (Y) and Aptitude score (X1), Attitude score (X2) and Anxiety score (X3).

The result of the regression analysis is as follows:

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coef</th>
<th>SE Coef</th>
<th>t-stat</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>64.035</td>
<td>2.665</td>
<td>24.02</td>
<td>0.000</td>
</tr>
<tr>
<td>Aptitude Score</td>
<td>0.124</td>
<td>0.044</td>
<td>2.81</td>
<td>0.005</td>
</tr>
<tr>
<td>Attitude Score</td>
<td>0.002</td>
<td>0.010</td>
<td>0.201</td>
<td>0.840</td>
</tr>
<tr>
<td>Anxiety Score</td>
<td>-0.095</td>
<td>0.013</td>
<td>-7.23</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Table 1: Regression Analysis through MS Excel [Achievement score with Aptitude score, Attitude score & Anxiety score]

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3</td>
<td>3612.761</td>
<td>1204.254</td>
<td>34.45</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual (error)</td>
<td>292</td>
<td>10205.46</td>
<td>34.950</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>295</td>
<td>13818.23</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The findings of the analysis were as follows:

1. The regression equation calculated was,

   Achievement Score= 64.035 + 0.124 Aptitude + 0.002 Attitude - 0.095 Anxiety

2. The standard error of estimate (S) was 5.911 which is also the standard error of the slope of the linear equation of the regression analysis.

3. R² Value is approximately 25.38%, indicating that at least 25.38% variation in achievement score can be explained with Aptitude Score, Attitude score & Anxiety score.

HYPOTHESIS TESTING

- Aptitude score, attitude scores and anxiety scores are significant predictors of academic achievement score.

A regression analysis was carried out between Aptitude score, attitude scores and anxiety scores with Achievement score. The regression equation calculated was:
Achievement Score = 64.035 + 0.124 Aptitude + 0.002 Attitude - 0.095 Anxiety

- Above equation is a linear equation of the form, \( Y = C + m_1X_1 + m_2X_2 + m_3X_3 \) which indicates that the relation is linear between the variables Achievement score (Y), Aptitude score (X_1), Attitude score (X_2) and Anxiety score (X_3).
- The R-Sq, which is defined as the intensity of relationship is 0.2538, indicates that 25.38% of the variations in Achievement is explained by aptitude score, attitude score and anxiety score.
- The P-value obtained with variables Aptitude score, Attitude score and Anxiety score is 0.005, 0.840 and 0.00 respectively. These p-values of Aptitude and Anxiety score are less than 0.05 indicating that there is significant relationship in between independent variables (Aptitude score and Anxiety score) and dependent variable (Achievement score).
- t-test for variable X_1 (Aptitude score), \( t = 2.81 > 1.96 \) at 0.05 level of significance indicated that there is significant linear relationship between Aptitude score and Achievement score.
- t-test for variable X_2 (Attitude score), \( t = 0.201 < 1.96 \) at 0.05 level of significance indicated that there is no significant linear relationship between Attitude score and Achievement score.
- t-test for variable X_3 (Anxiety score), \( t = 7.23 > 1.96 \) at 0.05 level of significance indicated that there is significant linear relationship between Anxiety score and Achievement score.

Thus it is proved that aptitude score and anxiety score are significant predictors of achievement score but attitude score is not a significant predictor of achievement score.

Hence, the hypothesis is rejected.
CONCLUSION

It is concluded that the aptitude score and anxiety score are strong predictors of academic score in M.Ed. students. Despite having a positive relationship, the attitude score was not found to be a significant predictor of academic score. It is recommended that personality parameters should also be considered significant along with the academic scores of the teacher educators. As anxiety is negatively related to the achievement score, measures to reduce it should be undertaken in the field of teacher education. The role of anxiety in other personality parameters as well as in other aspects of teacher education should be studied more extensively.
REFERENCES


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