ATTITUDE OF STUDENT TEACHERS TOWARDS SCIENCE AND THEIR PERSONALITY

Dr. S. Prakash
Principal
Thiagarajar College of Preceptors (Aided), Madurai, Tamil Nadu
DOI: https://doi.org/10.34293/eduspectra.v6i1.08

Abstract

This paper reports on attitude towards science and personality of student teachers. The sample consists of 1080 student teachers of Madurai revenue district. A scale on attitude towards science was used to get the data from the student. Percentage analysis, 't' test, 'f' test and Pearson- product moment correlation were used for analyzing the data. The result shows that there is a positive correlation between attitude towards science and personality of student teachers.

Keywords: *Attitude towards Science, Personality, Teacher Education*

Introduction

An attitude is an emotional reaction towards a person or thing. It is a personal response to an object, developed through experience which can be characterized as favourable or unfavourable. The use of science as the object or stimulus of these feelings delineates that set of attitudes known as 'attitude towards science'.

Developing positive attitudes towards science has been an exposed goal of most of the curriculum development efforts since the last 1950s (Welch 1979). It was hoped that increasing interest in science would result in increased science enrolment which in turn would yield a larger science work force pool and a science literate public. The increased attention to the effective outcomes of science has also resulted in a proliferation of attitude research studies, more measuring techniques, and several attempts to measure attitude towards science on an international scale. Recent reviews of research on science attitudes also reflect the burgeoning work in this area. Sufficient studies now exist to enable researchers to conduct quantity synthesis of research results.

These integrative studies, called meta-analysis have been done for science attitudes and provide additional understanding of the accomplishments and problems in this area. Having undergone the process of education every individual forms some kind of attitude towards science .These attitudes are likely to be permanent. Student teachers (B.Ed. Trainees) are adults who have chosen teaching as their profession with a willingness to undergo a positive attitude towards different subjects including science. Hence the prospective secondary school science teachers are expected to possess positive attitudes towards science which helps to improve themselves and to motivate the students in learning science and also in encouraging learning, training and research in the field of science.

Objectives of the Study

1. To find out the level of attitude towards science and personality of student teachers.
2. To find out the relationship between attitude towards science and personality of student teachers.

Null Hypothesis

1. There is no significant difference in attitude towards science of student teachers with respect to a) Locality, b) Religion, c) Community, d) Major subject
2. There is no significant difference in personality of student teachers with respect to a) Locality, b) Religion, c) Community, d) Major subject
3. There is no significant correlation between attitude towards science and personality of student teachers.

Method

Survey method of research was adopted for the study.

Sample

1080 B.Ed., students from 20 colleges of education, Madurai revenue district were selected through random sampling technique for the study.

Tool

Attitude towards Science Scale developed by the investigator, Multi Dimensional Personality Inventory by Manjurani Agarwal were used for data collection.

Data Analysis

Percentage analysis, 't' test, f test and Pearson- product moment correlation were used for analyzing the data.

Level of Attitude Towards Science and Personality of Student Teachers

Table 1 Level of Attitude towards Science and Personality of Student Teachers

S.No	Level of attitude towards science	No. of students	%	Level of personality	No. of students	%
1.	Low	112	10.4	Low	146	13.5
2.	Moderate	771	71.4	Moderate	777	71.9
3.	High	197	18.2	High	157	14.5
4.	Total	1080	100.0	Total	1080	100.0

It is inferred from the above table that 10.4% student teachers have low level, 71.4% student teachers have moderate level and 18.2% of student teachers have high level of attitude towards science. Further it is inferred that 13.5% student teachers have low level, 71.9% student teachers have moderate level and 14.5% of student teachers have high level of personality

Attitude towards Science of Student Teachers

Table 2 Difference in Attitude towards Science of Student Teachers with Respect to Locality

Variable		N	Mean	S.D	't' value	Remarks
Locality	Urban	316	84.02	13.462	1.901	NS
	Rural	764	82.44	13.559		

(At 5% level of significance the t value is 1.96)

It is inferred from the above table that the calculated value (1.901) is less than the table value of 't' (1.96). Hence the null hypothesis is accepted. Thus there is no significant difference between urban and rural student teachers in their attitude towards science.

Attitude Towards Science and Religion, Community and Major Subject of Student Teachers

Table 3 Difference in Attitude towards Science of Student Teachers with Respect to Background Variables

Variable	Sources of variation	Sum of squares	df	Mean squares	F Ratio	Level of significance
Religion	Between groups	272.94	2	136.47	0.745	NS
	Within groups	197377.82	1077	183.27		
Community	Between groups	302.05	3	100.68	0.549	NS
	Within groups	197348.70	1076	183.41		
Major subject	Between groups	626.71	2	313.36	1.713	NS
	Within groups	197024.04	1077	182.94		

(At 5% level of significance the table value of 'f' at 2df is 2.99, 3df is 2.60)

It is inferred from the table that the calculated 'F' values (0.745, 0.549 and 1.713) are less than the table value (2.99 and 2.60). Hence the null hypotheses are accepted. Thus there is no significant difference among religion, community and major subjects of student teachers in their attitude towards science.

Personality of Student Teachers

Table 4 Difference in Personality of Student Teachers with Respect to Locality

Variable		N	Mean	S.D	't' value	Remarks
Locality	Urban	316	219.11	20.67	4.854	S
	Rural	764	213.23	18.91		

(At 5% level of significance the t value is 1.96

It is inferred from the above table that the calculated 't' value (4.854) is greater than the table value (1.96). Hence the null hypothesis is rejected. Thus there is significant difference between urban and rural student teachers in their personality

Personality and Religion, Community and Major Subject of Student Teachers

Table 5 Difference in Personality of Student Teachers with Respect to Background Variables

Variable	Sources of variation	Sum of squares	df	Mean squares	F Ratio	Level of significance
Religion	Between groups	4874.99	2	2437.45	6.229	S
	Within groups	421423.43	1077	391.29		
Community	Between groups	3165.33	3	1055.11	2.683	S
	Within groups	423133.09	1076	393.25		
Major subject	Between groups	2566.57	2	1283.29	3.262	S
	Within groups	423731.85	1077	393.44		

(At 5% level of significance the table value of 'f' at 2df is 2.99, 3df is 2.60)

It is inferred from the table that the calculated 'F' values (6.229, 2.683 and 3.262) are greater than the table values (2.99 and 2.60). Hence the null hypotheses are rejected. Thus there is a significant difference among religion, community and major subject of student teachers in their personality.

Attitude towards Science and Personality of Student Teachers

Table 6 Correlation between Attitude towards Science and Personality of Student Teachers

Factors	Table value	Calculated r value	Remarks
Attitude towards science and personality	0.062	0.223	S

It is inferred from the above table that the calculated r value (0.223) is greater than the table value (0.062). Hence the null hypothesis is rejected. There is significant correlation between attitude towards science and personality of student teachers.

Findings

Attitude towards Science

- 10.4% of student teachers have high level of attitude towards science.
- There is no significant difference between urban and rural student teachers in their attitude towards science.
- There is no significant difference among religion, community and major subjects of student teachers in their attitude towards science.

Personality of Student teachers

- 14.5% of students have high level of Personality.
- There is a significant difference between urban and rural student teachers in their personality.
- There is a significant difference among religion, community and major subject of student teachers in their personality.

Relationship between Attitude towards Science and Personality of Student Teachers

There is a significant correlation between attitude towards science and personality of student teachers.

Interpretations

The 't' test results shows that there is significant difference between urban and rural student teachers in their personality. This may be because of urban students having good institutional facilities, experienced faculty and better exposure resulting in improved personality.

The 'f' test results shows that there is a significant difference among religion, community and major subject of student teachers in their personality. This may be because of various practices, traditions and customs influencing the personality of student teachers.

It is clear from the above study that there is a significant correlation between attitude towards science and personality of student teachers. So the personality of student teachers has an influence on their attitude towards science.

Recommendations

1. The colleges have to take responsibility to conduct seminar and workshop to develop and improve the positive attitude of the B.Ed., college students towards science.
2. The students should realize their responsibilities and to develop positive attitude towards science.

3. Technological tools and software can be used in classroom science teaching which can enhance positive attitude towards science.
4. Student teachers can be encouraged to perform various science projects.
5. Steps have to be taken to improve the personality of the student teachers that influences attitude towards science.

References

1. Aggarwal J.C (2001), Teacher and Education in a developing society, Vikas Publishing House, Delhi.
2. Bakari and Rosenna (2000), Development and validation of an instrument to measure pre-service teacher's attitudes toward teaching African American students. Dissertation Abstracts International, Vol.61, No.6, December 2000.
3. Biranchi Narayan Dash (2007), Teacher and Education in the emerging Indian society: Pune, Neelkamal Publications Private Limited.
4. Patterson and Barbara Patricia (1993), Attitudinal, behavioral, and demographic predicators of elementary teacher's level of self-concern for science teaching: A test of Fuller's Stages of Concern for teaching model. Dissertation Abstracts International, Vol.54, No.9, March 1994.
5. Suresh Bhatnagar, Anamika Saxena and Sanjay Kumar (2006), Development of Educational system in India: Meerut, R.Lall Book Depot.
6. Wolfe and Ron (1993), Experience, gender, marital status, and the 16PF questionnaire as predictors of American teacher's effectiveness in South East Asia schools. Dissertation Abstracts International, Vol.54, No.9, March 1994.