



School Environment and Achievement in Science of High School Students

Education

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ABSTRACT

The investigators attempted to find out the significant relationship between school environment and achievement in science among the students of standard IX. The self-made tools: School Environment Scale and Achievement Test in Science were used to assess the variables related to this study. The investigators adopted survey method and employed random sampling technique for the selection of the sample. The size of the sample consists of 17 Government, Government Aided and Private high and higher secondary schools in Cuddalore District. The size of the sample for the present study was 1006 students; of which 448 were male 558 were female. The major findings of the study revealed that female students are having better school environment and they show better achievement in science.

KEYWORDS

School Environment, Achievement in Science, High School Students.

Introduction

Education is said to be the most powerful weapon in human hands to combat the most complicated issues prevailing in the society and also responsible for all world famous inventions, discoveries and innovations. It has the capacity to improve an individual from within and also his/her surroundings. It is also a known fact that the improved quality of education will have a direct and positive effect on school environment. A school is called the temple of education. The world is becoming highly competitive. Quality of performance has become the key factor for personal progress. Parents want their children to climb the ladder of academic performance to as high as possible. The desire to high level of academic achievement puts lot of pressure on students, teachers, and on the whole school authorities. Therefore a lot of time and effort of the schools are used for helping students to achieve better in their scholastic endeavour (Nuthan, G. 1990).

School Environment

School has been regarded as a miniature society. It actually reflects the society or the life itself. School is the most important educational agency where the young generation is trained in certain type of activities that form a part of society. Schools are the main setting where a child spends his/her maximum time away from home. Schools are especially developed to carry out the work in a systematic manner. (Amandeep Kaur, 2014). It has been observed by various educationists that school is a centre of vigorous life. It is in direct contact with the realities of the life around reflecting the best. The function of the school change with changing needs of time. In the past, the schools were considered to be a place where knowledge was manufactured and this used to be bookish and mechanical. The present day schools are in a position to meet the increasing pressure, challenges and demands of life. School environment affects students' academic achievement. If the school environment is well mannered then there will be a chance for proper learning. The conditions of school facilities have an important impact on students' performance. It is also a well known fact that no school can meet the challenges of society if its environment is not supportive because environment plays a crucial role in students' academic achievement (Rajesh Bala, 2011).

School Environment and Achievement in Science

"School Environment" has been defined in numerous ways. Dave (1963) defined educational environment as the "the conditions, process and psychological stimuli" which affect the educational achievement of the child.

Achievement at school level is known as academic achievement. It is a very vast concept underlying the learning outcomes of students (Mehta, 1996). Achievement in Science to be very specific refers to the level of achievement attained by the students in their science subject. School as an institution and teachers as its team members have a very responsible role to play in improving the achievement of their students through accurate, comprehensive and step by step curriculum

planning, unbiased and objective evaluation, remedial measures for the desired improvement of the students.

Need for the study

The aim of the study was to find out the relationship between school environment and achievement in science of high school students in Cuddalore District. Bloom (1964) emphasized the importance of the school environments in which the students learn. For high school students' achievement is crucial because the choice of their future career depends on it. The study assured that if students' school environment is improved academic performance would definitely be improved. Hence, the present study is entitled as, "High School Students School Environment and Achievement in Science".

Objectives

For the present investigation the following objectives were framed.

1. To assess the level of school environment and achievement in science of high school students.
2. To find out the significant difference among high school students school environment and achievement in science with respect to gender.
3. To find out the significant difference among high school students school environment and achievement in science with respect to community.
4. To find out the significant relationship between school environment and achievement in science of high school students.

Hypotheses

Based on the objectives framed, the following hypotheses were formulated.

1. The high school students' level of school environment is high.
2. The high school students' level of and achievement in science is high.
3. There is no significant difference in school environment among high school students with respect to gender.
4. There is no significant difference in achievement in science among high school students with respect to gender.
5. There is no significant difference in school environment among high school students with respect to community.
6. There is no significant difference in achievement in science among high school students with respect to community.
7. There is no significant relation between school environment and achievement in science among high school students.

Methodology

In the present investigation, the investigators have adopted normative survey method. This survey method describes and interprets what exists at present.

Population, Sampling Procedure and Sample Size

For this investigation, 1006 IX Standard students were selected from

17 high and higher secondary schools in Cuddalore District of Tamil Nadu out of the total population of 30,933 during the academic year 2015-2016. The sample is to be selected very carefully so as to enable the researchers to draw meaningful conclusions and generalizations. The size of the sample should be adequate and it should also be a true representative of the population. The researchers have adopted random sampling technique in the selection of sample, various base for sampling such as gender (Male and Female) and community (OC, BC, MBC/DNC, SC/ST) were taken into consideration.

Tools Used

1. School environment Scale developed and validated by the Investigators.
2. Achievement Test in Science developed and validated by the Investigators.

Main Study

The researchers got prior permission from the heads of the high and higher secondary schools in Cuddalore District of Tamil Nadu for the data collection. And the researchers administered research tools containing personal data sheet, school environment scale, achievement test in science in the booklet form. It was distributed to the IX Std students with proper instruction. Whenever they need clarifications, the investigators rectified the problem with necessary information.

Statistical Techniques Used

For the analysis of the collected data, the following statistical techniques have been used.

- a. Descriptive analysis, and
- b. Inferential analysis.

Results

The results of this investigation are plotted in the table.

Table 1: Levels of school environment of high school students.

School Environment	N	Percentage
Low	250	24.9
Moderate	546	54.2
High	210	20.9
Total	1006	100

It is observed from the above table that 24.9% of high school students have low, 54.2% of them have moderate, and 20.9% of them have high level of school environment. Hence, it is inferred that majority of the IX standard students have moderate level of school environment.

Table 2: Levels of achievement in science of high school students.

Achievement in Science	N	Percentage
Low	248	24.6
Moderate	512	50.9
High	246	24.5
Total	1006	100

It is observed from the above table that 24.6% of high school students have low, 50.9% of them have moderate, and 24.5% of them have high level of achievement in science. Hence, it is inferred that majority of the IX standard students have moderate level of achievement in science.

Table 3: Mean, SD and t-value for school environment of high school students with respect to gender.

Gender	N	Mean	SD	t-value
Male	448	97.65	13.986	7.46*
Female	558	103.61	11.330	

(* Significant)

From the above table, the 't' value 7.46 is noted. It is greater than the table value (1.96) at 5% level of significance. Hence, the formulated null hypothesis is rejected. Therefore, it is concluded that there exists significant difference between male and female high school students in their school environment. While comparing the mean scores of male (Mean=97.65) and female (Mean=103.61) high school students, the female high school students are better than the male students in their school environment.

Table 4: Mean, SD and t-value for achievement in science of high school students with respect to gender.

Gender	N	Mean	SD	t-value
Male	448	56.96	21.25	4.99*
Female	558	63.37	19.37	

(* Significant)

It is observed from the above table that the calculated 't' value (4.99) is greater than the table value (1.96) at 5% level of significance. Hence, the formulated null hypothesis is rejected. Therefore, it is concluded that there exists significant difference between the male and female high school students in their achievement in science. While comparing the mean scores of male (Mean=56.96) and female (Mean=63.37) high school students, the female high school students are better than the male high school students in their achievement in science.

Table 5: Mean square and F-value for school environment of high school students with respect to community.

Source of variation	df (2, 1003)		'F' value
	Sum of squares	Mean square	
Between	948.293	474.147	2.85*
Within	166818.694	166.320	

(* Not Significant)

It is observed from the above table that the calculated 'F' value (2.85) is less than the table value (2.99) for df 2, 1003 at 5% level of significance. Hence, the formulated null hypothesis is accepted. Therefore, it is concluded that there exists no significant difference among BC, MBC/DNC and SC/ST high school students in their school environment.

Table 6: Mean square and F-value for achievement in science of high school students with respect to community.

Source of variation	df (2, 1003)		'F' value
	Sum of squares	Mean square	
Between	823.866	411.933	0.98*
Within	420485.275	419.228	

(* Not Significant)

It is observed from the above table that the calculated 'F' value (0.98) is less than the table value (2.99) for df 2, 1003 at 5% level of significance. Hence, the formulated null hypothesis is accepted. Therefore, it is concluded that there exists no significant difference among BC, MBC/DNC, and SC/ST high school students in their achievement in science.

Table 7: Relationship between achievement in science and interest in science of high school students.

Variable	N	Df	r - value
School Environment Vs Achievement in science	1006	1004	0.098*

(* Significant)

It is observed from the above table that the calculated 'r' value (0.098) is greater than the table value (0.063) for df 1004 at 5% level of significance. Hence, the formulated null hypothesis is rejected. Therefore, it is concluded that there exists significant positive relationship between school environment and achievement in science of high school students.

Discussion and Conclusion

This study has reported that the female students are having better school environment, findings of Paramasivam, P (2014), Lele and Sachdev (2001) supported this findings. However the contradictory finding was observed by Ghetya's (2000). In the achievement in science concern, the female students are having shown better achievement in science. Similar findings were observed by Sekar, P (2014) and Paramasivam, P (2014). There exists significant positive relationship between school environment and academic achievement. The parallel findings are observed by Dwivedi (2005). He found the substantial positive effects of science achievement and school environment. The study indicates that majority of the IX standard high school students tend to have moderate level of school environment and also moderate level of achievement in science. The study has also

clearly revealed the importance of school environment in enhancing achievement in science. The present study shows that female students' are having better school environment and achievement in science than male students. With respect to community there is no significant difference in school environment and achievement in science. Therefore, the students' academic success might par with the school environment too.

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