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## Academic achievement of high school students in relation to physical climate of the schools

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### Abstract

Education in the broadest sense is any act or experience that has a formative effect on the mind, character or physical ability of an individual. No one has yet realized the wealth of sympathy, the kindness and generosity hidden in the soul of a child. The effort of every true education should be to unlock that treasure. The concept of achievement involves the interaction of the factors namely aptitude for learning, readiness for learning, and opportunity for learning. It is the accomplishment or acquired proficiency in the performance of an individual in a given skill or body of knowledge. It is the criterion for selection, promotion or recognition in various walks of life. The central job of high schools is to maximize the capacity of each student. If the school climate is not positive, students will underperform, student attendance and student discipline are not likely to improve and school safety coned be compromised. If the school climate is not positive, students will underperform, student attendance and student discipline are not likely to improve and school safety coned be compromised. The physical environment should be welcoming and conducive to learning. In the present study the investigators have adopted stratified random sampling method for data collection. The sample for the present study consists of 1000 high school students from 27 schools of Kanyakumari, Tirunelveli, and Tuticorin districts. The tools constructed by the researchers were teacher effectiveness scale and academic achievement scale. For data analysis statistical techniques such as Percentage analysis, Mean, Standard Deviation and 't' test were employed. The physical climate of the self- financed high schools is greater than the government and aided high school students. Government and the Management may set up a part of reasoned sum of money for improving the physical climate of their schools. Government may come forward to provide additional grants to improve the physical climate of the schools such as classroom, furniture and equipment.

**Keywords:** Achievement, Relation to Physical, Climate.

### 1. Introduction

Education is a continuous process of experiencing and of revising or non-revising experiences. It is the development of all those capacities in the individual, which enables him to control his environment and fulfill his possibilities. Education in the broadest sense is any act or experience that has a formative effect on the mind, character or physical ability of an individual. No one has yet realized the wealth of sympathy, the kindness and generosity hidden in the soul of a child. The effort of every true education should be to unlock that treasure. The only purpose of education is to teach a student how to live his life by developing his mind and equipping him to deal with reality. The child spends most of his time in school and here his environment is exerting a different influence on performance through curricula, teaching techniques, and relationship. Jawaharlal Nehru declared that if all were well with our educational institutions, all would be well with the nation. Educational institutions are intimately linked with society at large. They are the temples of knowledge. They are the agents of social change and transformation. Therefore, the general condition of our schools, colleges and universities is a matter of great concern to the nation.

### Significance of the study

The concept of achievement involves the interaction of the factors namely aptitude for learning, readiness for learning, and opportunity for learning. It is the accomplishment or acquired proficiency in the performance of an individual in a given skill or body of knowledge. It is the criterion for selection, promotion or recognition in various walks of life.

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The central job of high schools is to maximize the capacity of each student. If the school climate is not positive, students will underperform, student attendance and student discipline are not likely to improve and school safety could be compromised. If the school climate is not positive, students will underperform, student attendance and student discipline are not likely to improve and school safety could be compromised. The physical environment should be welcoming and conducive to learning. The physical dimension includes appearance of the school building and its classrooms, school size and ratio of student to teachers in the classroom, order and organization of classrooms in the school, students should feel safe and comfortable everywhere on school property, classrooms and grounds should be clean and well-maintained, noise level will be low, areas for instruction and activities are appropriate for those uses, and availability of resources. Student and teacher comfort is indicated as the most important aspect of any school environment. If students are comfortable, then learning becomes much easier. Being comfortable is a combination of several different factors: lighting, adequate usable space, noise control, temperature and climate control and sanitation. If one knows about the physical climate of schools, one can understand to what extent it influences the academic achievement. Even though many studies have been made on physical climate of schools, not much work has been done on the relationship between physical climate of schools and academic achievement of school students. So the investigator is interested in studying it with a view to accord constructive suggestions for the improvement of physical climate of schools for better academic achievement.

### Operational definitions

#### Academic Achievement

Academic achievement in operational terms means the marks obtained by IX and X standard students in achievement test.

#### High School

A school is an institution where pupils learn from teachers. A high school is a place where the students are studying from std VI to std X.

#### Physical climate of the schools

Physical climate of a school climate includes: appearance of the school building and its classroom, school size and ratio of students to teachers in the classroom, order and organisation of classroom in the school, availability of resources and safety and comfort.

#### Objectives of the Study

1. To find out the level of physical climate of the schools of high school students.
2. To find out the level of academic achievement of high school students.
3. To find out significant difference if any in the physical climate of the schools of high school students with respect to background variables.
4. To find out significant difference if any in the academic achievement of high school academic achievement students with respect to background variables.

#### Specific Objectives of the Study

- 1.1 To find out the level of physical climate of the schools of high school students.

- 2.1 To find out the level of academic achievement of high school students.

#### Hypotheses of the study

- 3.1 There is no significant difference in the physical climate of the schools of high school students with respect to gender.
- 3.2 There is no significant difference in the physical climate of the schools of high school students with respect to locality of the school.
- 3.3 There is no significant difference in the physical climate of the schools of high school students with respect to type of schools.
- 3.4 There is no significant difference among physical climate of the schools of high school students with respect to type of management.
- 4.1 There is no significant difference in the academic achievement of high school students with respect to gender.
- 4.2 There is no significant difference in the academic achievement of high school students with respect to locality of the school.
- 4.3 There is no significant difference in the academic achievement of high school students with respect to type of schools.
- 4.4 There is no significant difference among the high school students in their academic achievement with respect to type of management.

#### Limitations of the Study

- 1) Though there are so many factors responsible for academic achievements the investigator has selected only one factor- physical climate of schools
- 2) The investigator has restricted her study to the students of high schools studying in three districts of Tamil Nadu.

#### Related Studies

Usha (1985) <sup>[21]</sup> studied that positive school climate played a significant role in raising the scientific attitude of Secondary School pupils. Dilip Kumar and Mukhopadhyaya (1988) <sup>[18]</sup> found that headmaster staff relationship, administrative capacity of the headmaster, teachers' job satisfaction and physical facility of the school were found to contribute significantly to the scholastic achievement and development of personality characteristics of students. Dhar and Dubey (1989) <sup>[17]</sup> derived that the main effect of all the three treatments i.e., school location, school environment and approval motive were found to be significant on academic achievements of arts students. Manoranjan Pande (2000) <sup>[20]</sup> was of the opinion that academic achievement of students studying in non-government schools was comparatively better than the academic achievement of students studying in government and SC, ST development department schools. Manoharan and Meenakshisundaram (2003) <sup>[19]</sup> observed that there was significant and moderate relationship between classroom climate and teachers' teaching effectiveness as perceived by students. In the study of Stone Larry Eugene (1994) the teacher was extremely instrumental in creating an effective classroom environment and also the importance of teachers sharing ideas and learning new techniques to promote a positive learning environment. Benson and Elba Elisa (2003) <sup>[14]</sup> generalized that school climate and student achievement were positively related when ranked by achievement. According to Javier Murillo and Cynthia Martinez-Garrido (2005) the relationship between environmental conditions in the classroom (e.g., lighting,

isolation, order, cleanliness) and the academic performance of the students. Cakir, Hasan; Delialioğlu, Omer; Dennis, Alan; Duffy, and Thoma (2009) [15] found that this combination of technology-enhanced classroom learning environment help students in different regions equally well to achieve in the program, which gave promising results to remedy student achievement gap between geographical regions. Danette Ifert Johnson (2009) [16] concluded that connected classroom climate contributed unique variance to affective learning beyond the contributions of instructor nonverbal immediacy.

**Method Adopted**

Since the problem is concerned with survey type, the investigator has selected the normative survey method for conducting the study.

**Tools used for the present study**

Teacher Effectiveness Scale and Academic Achievement Scale

**Population**

The population of the present study comprised all the IX standard students of high schools and higher secondary schools in the three districts of Kanyakumari, Tirunelveli, and Tuticorin districts.

**Sample for the study**

In the present study the investigator adopted stratified random sampling method for data collection. The sample for the present study consists of 1000 High school students from 27 schools.

**Statistical techniques used for the analysis**

- i) Percentage analysis
- ii) Mean
- iii) Standard Deviation
- iv) ‘t’ test and ANOVA

**Data Analysis**

**Table 1.1:** Level of physical climate of the schools of high school students

physical climate of the schools	Low		Average		High	
	Count	%	Count	%	Count	%
	14	1.4	262	26.2	724	72.4

Table 1.1: infers that a good percentage of the high school students have in general high level of physical climate of the schools.

**Table 2.1:** Level of academic achievement of high school students

Academic achievement	Low		Average		High	
	Count	%	Count	%	Count	%
	65	6.5	139	13.9	796	79.6%

Table 2.1: infers that a good percentage of the high school students have in general high level of academic achievement.

**Table 3.1:** Mean and standard deviation scores of physical climate of the schools of high school students with respect to gender, locality of the school, type of family and calculated ‘t’ values

physical climate of the schools	Background Variables		N	Mean	S.D	Calculated ‘t’ value	Remarks
	Gender	Male	426	68.10	11.835		
	Female	574	66.20	12.218			
Locality of the school	Urban	396	67.77	11.488	1.628	N.S	
	Rural	604	66.52	12.221			
Type of family	Joint	126	64.86	11.760	2.187	.S	
	Nuclear	874	67.32	12.108			

(At 5 percentage level of significance, the table value of ‘t’ is 1.96)

It is inferred from the table 3.1 that the calculated ‘t’ value for physical climate of the schools is greater than the table value for gender and type of family and is lesser than the table value for locality of the schools at 5 percentage level of significance.

There is significant difference between the male and female high school students’ schools’ physical climate (2.472). Further male (M=68.10) high school students perceive better

physical climate of schools than the female (M=66.20) high school students.

There is significant difference between the joint and nuclear family high school students’ physical climate of the schools (2.187). Further high school students from nuclear family perceive better physical climate of the school (M=67.32) than the joint family.

**Table 3.2:** Sum of Scores and Mean Square Variance of physical climate of the schools of High School Students with respect to Type of Management and calculated ‘P’ Values.

physical climate of the schools	Type of management	Variance	Sum of scores	Mean square	df	F	P	Remarks
	Government Aided	Between	2059.572	1029.786	2	7.136	.001	S
Self-Financed	within	143884.284	144.317	997				

It is inferred from the table 4.43 that the calculated ‘P’ value for physical climate of the schools (.000) is lesser than the table value (0.05) at 5 percentage level of significance. Hence the hypothesis “there is no significant difference among the physical climate of the schools of high school students with respect to type of management” is rejected. Thus there is significant difference among the mean scores of government, aided, and self-financed high school students on

physical climate of the schools Though the calculated ‘P’ value indicates significant difference physical climate of the schools of high school students, it is not clear that between which groups this significant difference lie. To find out exactly between which groups this significant difference lie, Duncan test is applied and the results are presented in the table.

**Table 3.2A:** Duncan – Physical Climate

Type of management	N	Subset for alpha = 0.05	
		1	2
Government	205	65.47	
Aided	745	67.06	
Self-Financed	50		72.62

From the table 3.2A it is concluded that there is no difference

**Table 4.1:** Mean and standard deviation scores of academic achievement of high school students with respect to medium of instruction nativity of the students and locality of the school and calculated 't' values

Academic achievement	Background Variables		N	Mean	S.D	Calculated 't' value	Remarks
	Gender	Male		426	72.04		
Female			574	74.49	20.219		
Locality of the school	Urban		396	75.82	16.951	3.528	S
	Rural		604	71.89	21.059		
Type of family	Joint		126	71.34	24.473	1.290	N.S
	Nuclear		874	73.75	18.999		

(At 5 percentage level of significance, the table value of t' is 1.96)

It is inferred from the table 2.2 that the calculated 't' value for academic achievement is greater than the table value for gender and locality of the school and is lesser than the table value for type of family at 5 percentage level of significance. There is significant difference between the male and female high school students in their academic achievement. Further female high school students' academic achievement

(M=74.49) is better than the male high school students' academic achievement (M=72.04). There is significant difference between the urban and rural high school students in their academic achievement. Further urban high school students' academic achievement (M=75.82) is better than the rural high school students' academic achievement (M=71.89).

**Table 4.2:** Sum of Scores and Mean Square Variance of academic achievement of High School Students with respect to Type of management and calculated 'P' Values.

academic achievement	Type of management	Variance	Sum of scores	Mean square	df	F	P	Remarks
	Government Aided	Between within	3190.441	1595.221	2	4.170	.016	S
	Self-financed		381442.417	382.590	997			

It is inferred from the table 4.72 that the calculated 'P' values for academic achievement (.016) is lesser than the table value (0.05) at 5 percentage level of significance. Hence the hypothesis "there is no significant difference among the high school students in their academic achievement with respect to type of management" is rejected. Thus there is significant difference among the high school students in their academic achievement with respect to type of management. Though the calculated 'P' values indicate significant difference in academic achievement of high school students, it is not clear that between which groups this significant difference lie. To find out exactly between which groups this significant difference lie, Duncan test is applied and the results are presented in the table.

**Table 4.2A:** Duncan –academic achievement

Type of management	N	Subset for alpha = 0.05	
		1	2
Government	50	66.00	
Aided	205		72.81
Self-financed	745		74.12

From the table 4.72A it is concluded that there is no difference in the academic achievement of the aided (M=72.81) high school students with self- financed (M=74.12) high school students. But there exists difference between the government (M=66.00) high school students with aided (72.81) high school students and self- financed (M=74.12) high school students. And the academic achievement of self- financed high school students

(M=74.12) is greater than the government (M=66.00) high school students.

**Findings**

(a) A good percentage of high school students perceive high level of physical climate of the schools. (b) A good percentage of the high school students have high level of academic achievement (c) there is significant difference between in the physical climate of the schools of high school students with respect to gender. Further male high school students perceive better physical climate of schools than the female high school students. (d) There is no significant difference between the urban and rural school students on the physical climate of the schools. (e) There is significant difference between the joint and nuclear family high school students on the physical climate of the schools. Further high school students from nuclear family perceive better physical climate of the schools than the joint family. (f) There is significant difference among the government, aided, and self-financed high school students in the physical climate of the schools. And the Self- financed high schools perceive greater physical climate than the government and aided high school students. (g) There is significant difference between the male and female high school students in their academic achievement. Further female high school students' academic achievement is better than the male high school students' academic achievement. (h) There is significant difference between the urban and rural high school students in their academic achievement. Further urban high school students' academic achievement is better than the rural high school

students' academic achievement. (i) There is no significant difference between in the academic achievement of high school students with respect to type of family. (j) There is significant difference among the high school students in their academic achievement with respect to type of management. And the academic achievement of self- financed high school students is greater than the government high school students.

### Recommendations of the study

The physical climate of the self- financed high schools is greater than the government and aided high school students. Government and the Management may set up a part of reasoned sum of money for improving the physical climate of their schools. Government may come forward to provide additional grants to improve the physical climate of the schools such as classroom, furniture and equipment. These schools can approach the philanthropists and get the financial assistance for the common cause of education. Parent teacher association and village committees can come forward to improve the physical climate of the schools by way of provision of furniture and equipment.

### Conclusion

Academic achievement is one of the most important goals of education. It can be defined as excellence in all disciplines. It encompasses student ability and performance. The effective growth and development, the desirable learning experiences, attitudes and values to be developed in the child depends upon the main factor the physical climate of the schools. The study demands better physical climate of the schools of high school students. Further the educational resources and infrastructure needs to be updated so that the academic achievement can be uplifted in schools.

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