A Study on Class Room Climate in Relation to Academic Achievement among Higher Secondary Level

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Abstract: "The density of the country is shaped in the millions of her classrooms.'' The Indian Education Commission (1964 -66) reveals that the school environment is as important and plays a role into the students' educational experience, social and cognitive development as the child's have environment. The school effectiveness is largely depending on institutional climate. The school climate includes interpersonal relationship, physical facilities and psychological support which ultimately lead better achievement. The idea of "Global Village" of Darer's Commission came to by providing better education to the masses. Creating a positive climate was identified as a prime characteristic of quality teachers in a study of teaching in so many countries. The present study is a "Normative Survey" method is adopted. The simple random sample technique is used and sample of 200 students from 6 schools drawn randomly from Erode District of Tamil Nadu. The standard tool was Classroom climate scale for school children constructed by SHEFARL PANDYA was adopted. Reliability of the scale was established by split half and test – retest methods. The following are the reliability coefficients. The content validity was established by obtaining opinions of experts in the field of education in the items. Descriptive and inferential statistics were employed for the analysis of the data.

Key Words: Class room, Climate, Relation, Academic Achievement and Higher secondary

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I.   INTRODUCTION

"The density of the country is shaped in the millions of her classrooms.'' **The Indian Education Commission (1964 -66)** reveals that the school environment is as important and plays a role into the students' educational experience, social and cognitive development as the child's have environment. Maslow proposed a theory based on a hierarchy of needs. The needs are basic requirements for physical and psychological well being such as safety, love and esteem. These are necessary for providing good educational experience which helps for better output of school effectiveness. The school effectiveness is largely depending on institutional climate. The school climate includes interpersonal relationship, physical facilities and psychological support which ultimately lead better achievement. The idea of "Global Village" of Darer's Commission came to by providing better education to the masses. Creating a positive climate was identified as a prime characteristic of quality teachers in a study of teaching in so many countries.

II.   NEED AND IMPORTANCE OF STUDY

The future classroom will necessary make use of the revolution in information and communication technology and is bound to utilize the technology in the process of instruction. Besides it is expected, the high, the high powered celestial satellites like EDUSAT for communication purpose will percolate into the classroom. In the future the classroom cannot merely teacher-centered or student-centered or subject centered or technology-centered. It will be integrated with life because "The world will come in to the class". Classroom climate, classroom management procedures and interaction with students in teaching will certainly leads to meaningful learning. The trend of the research studies indicates that very few studies made an attempt to know the effectiveness of classroom climate on learners achievement at secondary and higher secondary level. The class higher secondary is the terminal stage of secondary level. The study is undertaken in order to know the effectiveness of classroom climate on learner's achievement at the terminal stage of higher secondary level.

III.   STATEMENT OF THE PROBLEM

The Investigator selected the entitled *"A Study on Classroom Climate in relation to Academic Achievement among Higher Secondary Level at Erode District".*

OBJECTIVES OF THE STUDY

➢ To assess classroom climate including physical and academic facilities and academic achievement of higher secondary students.
➢ To examine the significant difference in academic achievement and classroom climate of higher secondary students with regard to their locality and gender.
➢ To examine the influence of classroom climate on academic achievement of higher secondary students.

HYPOTHESES OF THE STUDY

- There is no significant difference between academic achievements of students belonging to rural and urban localities.
- There is no significant difference between classroom climate test scores of students belonging to rural and urban localities.
- There is no significant difference between male and female students in their academic achievement in half year examination.
- There is no significant difference between male and female students in their classroom climate test scores.
- There is no significant relationship between classroom climate and academic achievement.

IV.   METHODOLOGY

The present study is a "Normative Survey" method is adopted to compare effect of classroom climate on academic achievement. The study focused with an intension to know the facilities that can be improved for promoting learners achievement. The population for the present study was considered as the higher secondary students in the Erode district of Tamil Nadu. The simple random sample technique is used in the present study to select the sample of 200 students from 6 schools drawn randomly from Erode District of Tamil Nadu. The list of 6 schools selected randomly.

In this study investigator selected three types of variables. These are 1) Independent Variables are Physical Facilities and Academic facilities. 2) Dependent variables are Academic achievement, Moderate variables are Local and Gender. The standard tool was Classroom climate scale for school children constructed by SHEFARL PANDYA was adopted. Reliability of the scale was established by split half and test – retest methods. The following are the reliability coefficients. The content validity was established by obtaining opinions of experts in the field of education in the items.

Descriptive and inferential statistics were employed for the analysis of the data. The descriptive and statistics such as mean, median, mode, standard deviation, kurtosis, skewness etc., are calculated for analysis of raw scores.

DELIMITATIONS OF THE STUDY

The study has been limited to the following:

- The present study was confined to Erode District of Tamil Nadu.
- The study was limited to higher secondary students.
- The sample of the study was limited to 200 students drawn from 6 schools.
- The achievements of students in half yearly examination marks are obtained from school records.
- The study is limited to the survey of availability of physical and academic facilities in the classroom depending on their availability.

V.   ANALYSIS AND INTERPRETATION OF DATA

Table-1 Descriptive Statistics

STATISTICS	HALF-YEARLY ACHEVEMENT	TEST SCORES
N	143	143
Mean	229.09	198.31
Std.Error of Mean	8.271	1.670
Median	212.00	199.00
Mode	157	199
Std. Deviation	98.9009	19.975
Skewness	.534	0.72
Std.Error of Skewness	.203	.203
Kurtosis	.454	2.520
Std.Error of Kurtosi	.403	.403

It is seen from the table-1 that the mean score of achievement of higher secondary students is 229.09 with a standard deviation 98.9. Median value is 212 and mode value is 157. The raw scores range from 39 to 974 out of a maximum possible score of 1200. The other statistics obtained is also given in the above table. It also observed that mean is greater than median and median is greater than mode. It means the given distribution is positively skewed curve with a degree of skewness 0.53. That the majority of students are below average.

ACHIEVEMENT

It is seen from the table-1 that the mean score of classroom climate scale of higher secondary students is 198.31 with a standard deviation 19.96. The median and mode are equal with a value 199. The raw scores range from 140 to 230 out of a maximum possible score of 240. The other statistics obtained is also given in the above table. From table it is observed that mean, median mode values are almost equal. Mean = Median = Mode. By this we can conclude that majority of students classroom climate test scores are at average. The given distribution is a normal distribution.

VI.   TESTING OF HYPOTHESES

HYPOTHESIS-1

There is no significant difference between academic achievement of students belonging to rural and urban localities.

Table-2 Comparison of the mean scores of achievement with regard to their locale

Group	N	Mean	SD	df	t value
Rural	120	241.701	94.701	141	1.667
Urban	80	217.88	101.777		

From the table-2 it is seen that the mean achievement scores of rural students are 241.81 with a standard deviation of 94.701 and that of urban students mean achievement score is 217.88 with a standard deviation of 101.777. The obtained 't' value for these groups is 1.667 at 141 degrees of freedom which is less than the 't' critical value 1.960 at 0.05 level of significant difference between rural and urban students in their academic achievement in half yearly examinations.

HYPOTHESIS-2

There is no significant difference between classroom climate test scores among the students of rural and urban areas. The above hypothesis was tested by using t-test for independent samples. The summary of the result is shown in the table-3

Table-3 Comparison of the mean test scores with regard to their locale

Group	N	Mean	SD	df	t value
Rural	120	194.70	20.043	141	2.390
Urban	80	201.50	19.493		

From the above table-3 it is seen that the mean test scores of rural students is 194.70 with a standard deviation of 20.043 and that of urban students mean test scores is 201.50 with a standard deviation of 19.493 the obtained 't' value for these groups is 2.390 at 141 degrees of freedom, which is less than the 't'-critical value 1.960 at 0.05 level of significant and hence the null hypothesis is accepted. That there is no significance difference between classroom climate test scores of students belonging to rural urban areas.

HYPOTHESIS - 3

There is no significant difference between boys and girls in their academic achievement in half yearly examinations. The above hypothesis was tested by using t-test for independent samples. The summary of the result is shown in the table-4.

Table-4 Comparison of the mean achievement with regard to their gender

Group	N	Mean	SD	t value
Male	110	222.59	98.854	1.311
Female	90	240.82	97.050	0.05

From the above table-4 it is seen that the mean achievement scores of male students is 222.59 with a standard deviation of 99.854 and that of female students mean achievement scores is 240.82 with a SD of 97.050. The obtained 't' value for these groups is 1.311 at 141 which is less than the 't;-critical value 1.960 at 0.05 level of significant and hence the null hypothesis is accepted. That is there is no significance difference between male and female students academic achievement in half yearly examinations.

HYPOTHESIS - 4

There is no significant difference between male and female student in classroom climate test scores. The above hypothesis was tested by using t-test for independent samples. The summary of the result is shown in the table-5

Table-5 Comparison of the Mean, Test scores with regard to gender

Group	N	Mean	SD	t value
Male	110	198.15	21.036	0.166
Female	90	198.61	18.102	

From the above table-5 it is seen that the mean test scores of male students is 198.15 with a standard deviation is 21.036 and the female students mean test scores is 198.61 with a standard deviation of 18.102. The obtained 't' value for these groups is 0.166 at 141 df which is less than the 't' value 1.960 at 0.05 level of significant and hence the null hypothesis is accepted. That is there is no significance difference between male and female classroom climate test scores.

HYPOTHESIS - 5

There is no significant relationship between academic achievement and classroom climate. To test the above hypothesis chi-square test was used. Students are categorized based on half yearly achievement scores.
   a) Below average group (M) – standard Deviation which consists of the individuals falling above Mean (M) – standard Deviation;
   b) The average group consists of the individuals falling one standard deviation limits both sides of mean, and

c) The above average consists of the individuals who secures the marks above mean (M) + standard division. In the same manner classroom climate scores are also used to categories as least climate, average climate and better climate. The given scores are converted into categorical variables. The contingency table for these categorical variables is shown in table-6 along with expected frequencies in each cell.

Table-6 Academic Achievement-Classroom Climate Cross Tabulation

Half Yearly Marks	Counts	Classroom Climate			Total
		Least Climate	Average Climate	Better Climate	
Below Average Group	Count	1	20	1	22
	Expected Count	3.4	16.2	2.5	22.0
Average Group	Count	20	65	7	92
	Expected Count	14.2	67.6	10.3	92.0
Above Average group	Count	1	20	8	29
	Expected Count	4.5	21.3	3.2	29.0
Total	Count	22	105	16	143
	Expected Count	22.0	105.0	16.0	143.0

The person chi-square was calculated for the observed and expected frequencies of each cell. The chi-square value is 16.762. This value is compared with chi-square table value for dated at 0.05 levels which are more than the chi-square critical, value 9.49 and hence the null hypothesis is rejected. That there is a significant relationship between climates on academic achievement of higher secondary students. It means classroom climate and academic achievement are significantly related. They are not independent. The academic achievement is depending on the classroom climate. The degree of correlation between classroom climate and academic achievement is 0.25 which is significant at 0.05 levels. The degree of correlation between classroom climate and achievement is positive. It indicates that the higher the classroom climate leads to better performance.

VII.   AVAILABILITY OF SCHOOL FACILITIES

a) Availability of physical Facilities

The adequacy of essential physical facilities like furniture, lighting, seating arrangements, electrical gadgets etc., and its condition is given in Table-7

Table-7 Availability of physical facilities

School Name	Architectural	Classroom structure	Furniture	Lighting	Seating arrangement	Electric gadgets
S.V.N. Matric School K. Palayam	Concrete	Good	Sufficient	Sufficient	Good	No
Sri Sathya Sai Matric School Chittode	Concrete	Good	Sufficient	Sufficient	Good	No
Govt. Boys Hr.Sec. School Bhavani	Concrete	Good	Not Sufficient	Sufficient	Good	No
Govt. Girls High School Chittode	Concrete	Good	Not Sufficient	Sufficient	Good	No
B. K. N. Hr. Sec.School Nasiyanur	Concrete	Good	Not Sufficient	Sufficient	Good	No
Diamond Jubile Hr.Sec. School Gobi.	Concrete	Good	Not Sufficient	Sufficient	Good	No

The table-7 gives the information about the availability of physical facilities like architectural barrier, classroom structure, furniture lighting, seating arrangement and electronic gadgets in 6 schools selected for the study in which three are rural and 3 are in urban.

1. Architectural:

    Except Govt. Boys Hr. Sec School all other School had concrete buildings and architecture is also good. But in all schools on adaptation in structure such as romp, and wheel chair accessible path.

2. Classroom Structure:

    All school is having a spacious classroom with appropriate colored walls. Highly ventilated windows pass aeration inside. Sound proof walls and roofing prevent distracting sounds.

3. Furniture:

    Except S.V.N and Sathya Sai School in all other there is no sufficient furniture. Students are sitting on the floor, only teacher is having a table and chair. But in S .V.N and Sathya Sai school students were sitting on the desk bench which was very comfortable.

4. Lighting:

Except S.V.N and Sathya Sai School other schools depend on natural sun light. But S.V.N school is having good natural light and also fully artificial lighting.

5. Seating arrangements:

In all schools there is a proper space for children to stand, sit and move. But in S.V.N school this seating arrangement was very good only two students occupies per desk.

6. Electronic gadgets:

In all school there is no separate protected space for keeping electronic gadgets like OHP machine, LCD, computer and slide projector etc.,

b) Availability of Academic Facilities

To find out the availability of academic facilities in different types of schools. The availability is show in the table-8.

Table-8 Availability of academic facilities

School Name	Display boards	Wall Posters	Black / Writing boards	Projectors	T. Aids	Others
S.V.N. Matric School K. Palayam.	A	A	A	NA	Used	Computer & library
Sri Sathya Sai Mat. School Chittode	NA	NA	A	NA	Not Used	Computer & library
Govt. Boys Hr. Sec. School Bhavani.	NA	NA	A	NA	Not Used	Computer
Govt. Girls High School Chittode.	NA	Charts and oil paintings	A	NA	Not Used	Computer
B. K. N. Hr.Sec. School Nasiyanur	NA	NA	A	NA	Used	Computer
Diamond Jubile Hr. Sec.School Gobi.	A	NA	A	NA	Used	Computer

The table-8 gives the information about the availability of academic facilities like display boards, wall posters, black/ writing boards, projectors and teaching aids etc.

1. Display boards:

Bulletin boards are essential in classroom to display new information every day. The news, which is relevant to the academic and general Knowledge, is also displayed here. Except S.V.N school, no other school does not have this facility.

2. Wall posters:

Good charts, oil paintings of different organs internal structures were hanged at comfortable height only in S.V.N school. Other school did not have this facility.

3. Black/ Writing boards:

In general a black board with white chalk is used in classrooms. Green board with yellow chalk and white board with color marker pens can bring about good contras and will be useful for low vision children also. In all school good black board facilities are available.

4. Projectors:

No School did not use the technology properly even though computers are available. All school did not have projector facility.

5. Teaching aids:

In all school some extent teaching aids are available. But only S.V.N school teachers are utilizing. Other school teacher does not properly.

6. Others:

In S.V.N school and Sri Sathya Sai School are having computer labs. These two schools utilize computers some extent. But power is the major problem. Other four schools do not have full facility.

VIII. MAJOR FINDINGS

On the basis of discussion over the data presented in the chapter IV the following conclusions can be made and reported as major findings of the study.

➢ The majority of the students are securing below average marks in half yearly examination. The median of the scores is 212. The mode is 157. It indicates 50% of the students are securing 35%of marks.

➢ The mean score of class room climate scale is 198.31. The median is 199 and mode is 199. It means 50% of the students are securing 83% score on classroom climate test. it indicates that the large number of students are perceiving the better facilities provided in the respective institutions.

➢ In achievement, rural students showed a better performance than urban students. In classroom climate scores it is reversing, urban students showed better performance than rural students.

➤ However, there is no significant difference between rural and urban students in achievement and classroom climate.
➤ Both Achievement and climate test scores indicates female students are on edge over the males. But the test of hypothesis says that there is no significant difference between male and female students.
➤ There is a significant relationship between classroom climate and academic achievement. The degree of correlation is positive and significant.
➤ The physical and academic facilities are not up to the expected level in majority of schools. Based on the above findings of the study the following educational implications are drawn and they have presented below.

IX.   EDUCATIONAL IMPLICATIONS OF THE STUDY

The findings of the present study have certain significant educational implications. These are systematically presented below.

- Classroom climate is an important factor that determines personality and academic achievement of rural and urban students. Therefore school should provide a good pleasant classroom climate for better teaching and learning.
- Though the findings of the study do not reveal any significant difference in academic achievement of rural and urban students, however efforts may be initiated to eliminate rural and urban differences.
- Females showed a better performance in academic achievement than males. But this difference is not significant. So school should provide better teaching learning strategies for both males and females so avoid the differences. This is possible by providing better facilities.
- No school did not have fully academic and physical facilities which showed low levels of achievements. So school should consider this environment.
- Parental support is crucial in the academic growths of children. Parents may be informed at every stage about the progress of their children.
- Need for proper guidance is emerged for the proper development of the children both in academics and non – academics.
- For better class room transaction Technology should be introduced. So that teaching learning process will occur effectively.
- Frequent meetings of mother – teacher associations are required for generating the classroom climate and also to sustain for the development of the institution.

X.   SUGGESTIONS FOR FURTHER RESEARCH

The following suggestions have been given for further research.

- ❖ A study may be conducted in with a large number of samples covering the sample from whole Tamil Nadu to arrive at a better generalization.
- ❖ Comparative studies of similar kind may be undertaken with different classes and in different school subjects with a larger number of samples.
- ❖ More researches may conduct to investigate further the effect of classroom on Academic achievement.
- ❖ Studies may also be conducted to know the effect of physical and academic facilities on academic achievement.

XI.   CONCLUSION

A research activity in specific area is just the beginning of the exploration of the unidentified treasures in that area. Therefore the present study has opened up new horizons in the school environment such as physical facilities, infrastructural facilities, teaching-learning, and evaluation. May the school authorities concerned will revisit the present classroom conditions of the school and restructure it and the basis of the demands raised by the students. Let us be optimist.

REFERENCE
[1]   Journal of **EDUTRACK APRIL 2004**. Positive classroom climate in school.
[2]   Studies on classroom processes and school effectiveness at primary stage. Ncert New Delhi publication.
[3]   **Robert Eslavin (1999)** Research methods in Education, second edition, Allyn and Bawn Boston.
[4]   **NCERT, Indian Educational Review Volume 22, (January 2006)** positive classroom climate in different types of school. NCERT, New Delhi.
[5]   **NCERT, the Primary Teacher (October 2005)**-facilities in schools, NCERT publication, New Delhi.