

Effect of Classroom Climate and Parental Awareness on Academic Achievement of Secondary School Students

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Abstract

The success of school life is judged by academic achievement of the student. Achievement depends on a number of factors like learner's ability, personality, intelligence, socio-economic conditions as well as environment of school, classroom and home. The feelings and emotions being shaped in a particular climate of a particular classroom is the basic source of motivation to learn something. The physical structure of classroom as well as interaction between student and teacher constitute classroom climate which shape the educational attainment of the child and if students feel themselves tense and hostile they may be led to poor learning. Similarly the students whose parents show keen interest in their studies achieve better in exams than the students whose parents show less interest in their studies. Besides the classroom climate and parental awareness it was also observed that location of the school has an important influence on achievement and students of urban area have an edge over the students of rural area in their academic achievement.

The main objectives of the schools are to have the students maintain the positive feelings towards learning, acquire the necessary facts, concepts and principles to solve important problems, arouse and satisfy distinct drives and feel reasonably good about them. To achieve all these broad goals, school's task is to provide classroom environment supportive to these goals. This is necessary because "A child's performance at school is not dependent on any attribute he happens to be born with. Instead, it is

a complex response to his family and home environment, community and its values, his peers and other social contacts, his school or schools and their assessment procedures and overall climate of his school or schools (Gerd and Ugwuegbu, 1980)." Schooling can be conceptualised in a general sense as a process of interaction among the teacher and the students. Various studies have shown the effect of schooling on cognitive development of learners. However, the degree of facilitation due

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to schooling is always subject to the variation depending upon quality of schooling.

Learning takes place within a web of social relationships as teachers and pupil interact both formally and informally. Schools are institutional spaces for communities of learners, including both students and teachers. Play and scuffle with one's friend on the school grounds, free time to sit on the benches and chat with friends during breaks, gathering together for morning assembly and other festive and significant occasions in the school, anxious turning of pages before a class test, and trips made with one's classmates and teachers to places outside the school – all these are activities bringing the community together, giving it the character of a learning community. Behind the scenes, but still significant in giving the school its character, are the teachers and headmaster, planning and carrying out daily routines, examinations and special events that mark the school calendar. The community and schools both are required to organise these activities in such a fashion that their interactions support and enhance both teaching and learning. The physical and psychological dimensions of the environment are important and are interrelated. The space of the school should be nurtured in such a way that children feel safe, happy and wanted, and with teachers find meaningful and professionally satisfying.

The multidimensional development of the students is caused by variety of factors related to school, home and society. School environment that

includes classroom climate and parent's outlook towards their children creates significant difference in the achievement of the students at secondary school level. Classroom climate could be described as a system comprising four sets of variables: the physical environment, organisational issues and characteristics of the teachers and of the learners (Moos, 1979). Classroom climate is a mediator among these variables that is formed or shaped through the interactions between the pupils and between the teacher and the pupils. An important factor, together with the quantity of such interactions and communications, is their quality, which in turn influences the learner's satisfaction, self-image and his/her learning process. Fraser, (1988) defined classroom climate as determined by interpersonal relationships, the personal development of each individual and the systemic characteristics.

Classroom climate refers to the various psychological and social dimensions in the classroom such as degree of formality, flexibility, structure, anxiety, teacher control, activity and stimulation. Different classroom climate leads to different products. A positive classroom climate is essential to promote good students achievement, and it is important to foster positive student attitudes. A favourable classroom climate provides the framework within which students and teachers function co-operatively and productively.

Parental awareness is explored in a number of recent studies; a particular aspect of it is the concept of parents as a complementary educators or partners, with teachers in the learning process.

Parents as partners with a shared sense of purpose with teachers, provide the basis for improving students learning. Parental involvement, in almost any form produces measurable gains in students' achievement (Dixon, 1992:16). The concept of parental involvement with the student and the school is a vital one and can produce great rewards for all concerned. It has been found that schools do not always know what the term parental involvement really means. According to Vandergrift and Greene (1992: 57), two key elements work together to make up the concept of parental involvement. One of these is level of commitment to parental support. This includes such things as encouraging the students, being sympathetic, reassuring and understanding. The other element needed is level of parental activity and participation, such as doing something that is observable. "This combination of level of commitment and active participation is what makes involved parents". Parents' involvement actually declines as students grow older so that it is less in secondary schools than in elementary (Stouffer, 1992).

Achievement of the students is influenced by three factors: parents (family factors), teachers (academic factors) and students (personal caused factors). Degree of parental awareness is directly related to facilities and encouragement that students get from their parents which in turn creates motivation in class-room learning. Personality of the teacher, his values and teaching methodology and students personal factor, interacting all create classroom climate.

Objectives of the Study

The present investigation is led by the following objectives:

1. To compare the educational attainments of students belonging to schools with enriched and poor climate classrooms.
2. Comparison of educational attainments of students of schools located in urban and rural areas;
3. Comparison of educational attainments of wards of high aware and low aware parents.
4. To find out the effect of interaction of location of school, classroom climate and parental awareness on educational attainments of secondary school students in their board examination.

Hypothesis Tested

The following null hypotheses were formulated and tested to arrive at conclusions during the present study:

- Achievement of students of enriched climate classrooms and poor climate classrooms does not differ significantly.
- Academic achievement of wards of high aware parents is significantly higher than that of wards of low aware parents.
- Academic achievement of students of urban institutions and rural institutions does not differ significantly.

Delimitations and Scope of the Study

The study is confined to the students of class X studying in various institutions of rural and urban areas of Eastern U.P.

The reason for delimiting the study to only secondary stage is that this stage of education is considered more vital and is linked to the whole system of education. The applicability of findings of the research is greater for this stage.

The study is also limited to the students of eastern Uttar Pradesh only. Eastern part of U.P. differs in many respects. Socio-economic status and other facilities which are available to those people dwelling in western part of U.P are better in comparison to the eastern U.P.

The academic achievement which is a part of school learning has been used as dependent variable in the present study. Total marks as well as marks in science obtained by the students were taken as their achievement scores.

Design of the Study

This study was primarily aimed at finding out the effect of classroom climate and parental awareness on the academic achievement of high school students. For determining the effect of independent variables on dependent variables, relevant measuring devices were required. The researcher developed a scale to measure the classroom climate and parental awareness, because hardly any suitable scale was available to measure these variables. Two important intervening variables i.e. intelligence and socio-economic status of students were also measured and controlled by keeping their mean and standard deviation(S.D) equal. Total marks as well as marks in science obtained by students in high school examination of U.P. Board, were treated as achievement scores for this study. The scores

obtained were subjected to 2 (rural and urban) 2 (enriched and poor classroom climate) 2 (high and low aware parents) analysis for the statistical treatment and interpretation.

Population and Sample

The sample included 435 students of class-X from 12 institutions belonging to rural and urban areas of Gorakhpur and Balrampur districts who appeared in high school board examination in 2008 selected randomly for the purpose of this study.

Variables for the Present Study

(i) Independent Variables

The independent variables for the study were:

- (a) Classroom Climate;
- (b) Parental Awareness; and
- (c) Location of the schools.

(ii) Dependent Variables

The dependent variables for the study are total achievement and achievement in Science of secondary school students.

(iii) Controlled Variables

The socio-economic status and intelligence were controlled during the study by keeping the mean and SD equal for each group.

Measuring Devices

The following measuring devices have been developed and used in the present investigation. These are:

- a) Classroom Climate Scale
- b) Parental Awareness Scale

Administration of Tools

Each and every student included in the sample was approached during the month

of July/August 2008. The investigator took the prior permission of the heads of the institutions for data collection. First of all the test of General Mental Ability was administered and then SES scale was administered. It was decided to complete the tests in two sessions of a day so that students may not develop fatigue and boredom and there are no dropouts on subsequent test.

Two tests — Classroom Climate Scale and Parental Awareness Scale were used to categorise the sample. These scales were administered in the second half of the day. Thus the data collection for a school was completed in one day.

As a measure of the achievement of students selected in the sample, total marks as well as marks obtained in science by them in High School Examination were used.

Results and Discussion

The raw scores collected from different tests and scales were tabulated and analysed with the help of statistical procedure. There are a number of statistical procedures that are used for different purposes depending on needs and the nature of data. The present study has necessitated the use of following statistical procedures:

- (i) Mean and Median
- (ii) Standard Deviation and Standard Error.
- (iii) Skewness and Kurtosis
- (iv) Analysis of Variance

The data collected were treated using the statistical techniques mentioned above. A $2 \times 2 \times 2$ analysis of variance was done to test the effect of various variables on the achievement.

Analysis Of Variance for the Academic Achievement Scores Obtained by Students

The obtained academic achievement scores by students were subjected to $2 \times 2 \times 2$ analysis of variance. The three factors, school location, classroom climate and parental awareness were classified at two levels. Table 1 shows the results obtained. Table 4.1 shows that all the main variables, i.e. school location, classroom climate and parental awareness have significant effect on academic achievement. To be significant at 0.01 level, the F-value should be 6.91 for 95 degrees of freedom. The value of F regarding school location is 15.59 and significant beyond the 0.01 level. It shows that location of schools exerts different effects on total academic achievement of high school students. In the same way, classroom climate is also significant ($df = 95-1$, $F = 19.95$, $P > 0.01$). It reveals that students having enriched classroom climate have secured higher marks in comparison to students having poor classroom climate. Similar is the case with the effect of parental awareness. The F-ratio for this variable is also significant ($df = 95-1$, $F = 14.56$, $P > 0.01$). This value shows that wards of high aware parents secure higher marks than the wards of low aware parents. Table 1 indicates that all the interactive effects between variables fail to reach the level of significance even at 0.05 level of confidence.

Analysis of variance for the academic achievement scores in science

Achievement scores in science obtained by students were subjected to $2 \times 2 \times 2$ analysis of variance. Table 2 shows

that all the main effects, i.e. school location, classroom climate and parental awareness are significant. Interaction between treatments is not significant. Obtained values have been given in the Table 2.

The Table 2 shows that the first treatment i.e. the location of schools is significant ($df = 95-1$, $F = 50.20$, $P > 0.01$) at 0.01 level, indicating a significant difference in the total academic achievement between the urban and rural location of institution. It shows that urban students score higher marks in science than that of rural students. The second treatment i.e. the classroom climate is also significant ($df = 95-1$, $F = 58.18$, $P > 0.01$) which indicates that students from enriched climate schools are better in their academic achievement than the students belonging to schools having poor climate. The F-ratio for parental awareness is 22.54 which is significant at 0.01 level. This indicates that wards of high aware parents secure significantly higher marks than wards of low aware parents. None of the two factors or three factors of interaction effects is significant even at 0.05 levels.

The basic problem taken up in this study was to investigate the relationship between classroom climate, parental awareness and achievement of the students in terms of total marks as well as marks in Science obtained by them in high school examination. It was assumed that whatever a child achieves or memorises in his school life is the outcome of complex variables operating upon him in situations he lives and grows up. Each of such situations is unique in the sense that operating variables in

each of the situations are not the same. This uniqueness of the situations is also seen in classroom climate and parental awareness. Thus, the classroom climate and parental awareness are considered important variables in the academic achievement of the students. Following such expected relationship between these variables like classroom climate, parental awareness, location of schools and academic achievement, three hypotheses were developed in the study for verification. In the following lines data for testing each of the specific hypotheses have been presented and discussed.

(a) Classroom Climate and Academic Achievement

To find out the effect of classroom climate on academic achievement, a three-way analysis of variance (ANOVA) technique was adopted. A summary of ANOVA results is presented in Table 3.

Table 3 shows that number of students in the ANOVA for the enriched classroom climate schools was 52, and for the poor classroom climate schools was 44. The means of the academic achievement for the two groups were 386.62 and 350.68 respectively. The F-ratio for the difference between the two means was 18.10 for 95 degrees of freedom. It is significant beyond 0.01 levels. The significant F-ratio shows that there is less than one chance out of 100 that the observed difference between the two sample means could occur by chance. It can, therefore, be inferred that the academic achievement of students from enriched classroom climate schools is better than that of

TABLE 1
Summary Analysis of Variance for the Total Academic Achievement Scores of Students

Sources of Variation	Sum of Square	Degrees of freedom	Mean Square	F-ratio
A. Location of Schools (Urban-Rural)	20605.04	1	20605.04	15.59*
B. Classroom Climate (Enriched- Poor)	26422.70	1	26422.70	19.95*
C. Parental Awareness (High-Low)	19818.11	1	19818.11	14.56*
A × B	694.25	1	694.25	0.524
A × C	38.39	1	38.39	0.029
B × C	646.77	1	646.77	0.639
A × B × C	1617.47	1	1617.47	1.221
Error Variance	116529.20	88	116529.20	-
Total :	190520.00	95	-	-

* $P > .01$

TABLE 2
Summary Analysis of Variance for the Academic Achievement Scores in Science

Sources of Variation	Sum of Square	Degrees of freedom	Mean Square	F-ratio
A. Location of Schools (Urban-Rural)	1537.44	1	1537.44	50.20
B. Classroom Climate (Enriched-Poor)	1781.67	1	1781.67	58.18
C. Parental Awareness (High-Low)	690.29	1	690.29	22.54
A × B	19.42	1	19.42	0.634
A × C	24.40	1	24.40	0.797
B × C	14.47	1	14.47	0.473
A × B × C	151.71	1	151.71	4.55
Error variance	2694.50	88	-	-
Total :	7156.96	95	-	-

TABLE 3
Means and F-ratios of Enriched Climate Schools and Poor Climate Schools on Different Achievement Tests

S. No.	Achievements	Enriched Classroom Climate Schools		Poor Classroom Climate Schools		df	F-ratio
		N	Mean	N	Mean		
1	Total Academic achievement	52	386.62	44	350.68	95	18.10
2	Achievement in Science	52	67.02	44	57.66	95	38.72

the poor classroom climate schools. The results of comparison of scores in Science of students belonging to enriched climate schools and poor climate schools is presented in Table 4.3 on serial no. 2. It is evident from the table that N was 52 and 44 for groups respectively. The means of the achievement in Science of two groups were 67.02 and 57.66 respectively. The F-ratio for the difference of achievement in Science of students was 38.72 for 95 degrees of freedom. It is significant at 0.01 levels. The significant F-ratio shows that there is one chance out of 100 that observed difference of the two sample means could occur by chance. Therefore, it can be inferred that achievement of students in Science of students from enriched climate classrooms is better than that of the poor climate classrooms. Thus, the null hypothesis H1 is rejected.

To sum up, it may be inferred from the table that academic achievement and achievement in Science of students of enriched climate classrooms is better than that of counterparts in poor climate classrooms. It seems that enriched climate classrooms generate good emotional warmth, cognitive encouragements, show fairness in decisions made by teachers and give more freedom for creative activities.

(b) Parental Awareness and Academic Achievements

To find out the effect of parental awareness on academic achievement, a three-way analysis of variance (ANOVA) technique was adopted. The results of ANOVA have been presented in Table 4.

It is evident from Table 4 that number of students in ANOVA for

both, high aware parents group and low aware parents group was 48. The mean of the total academic achievement for the two groups were 384.12 and 355.77 respectively. The F-ratio for the difference between two means was 10.92 and the degree of freedom for the difference between the two means was 95 which are significant at 0.01 levels of confidence. The significant F-ratio shows that there is less than one chance out of hundred that the observed difference between the two sample means could occur by chance alone. It can, therefore, be inferred that academic achievement of wards of high aware parents is higher than that of the wards of low aware parents. The comparison of achievement in Science of these groups is available at serial No. 2 of Table 4. It is evident from the table that N was 48 for each group. The mean of achievement in Science for the two groups were 65.29 and 60.17 respectively. F-ratio for the difference between two means of above groups was 9.08 and df for the F-ratio was 95. It is significant beyond the 0.01 level. The significant F-ratio shows that there is less than one chance out of 100 that the observed difference could occur by chance alone. It can, therefore, be inferred that the achievement in Science of wards of high aware parents is higher than that of wards of low aware parents. Thus null hypothesis H2 is rejected.

(c) Location of School and Academic Achievement

A three way analysis of variance was adopted to find out the effect of location of schools on academic achievement. The results have been presented in Table 5.

TABLE 4
Means and F-ratios of high aware parents and low aware parents
on Different Achievement Tests

S. No.	Achievements	High aware parents		Low aware parents		df	F-ratio
		N	Mean	N	Mean		
1.	Academic achievement	48	384.12	48	355.77	95	10.92
2.	Achievement in Science	48	65.29	48	60.17	95	9.08

TABLE 5
Means and F-ratios of Urban and Rural Institutions on Different Achievement Tests

S. No.	Achievements	Urban Institution		Rural Institution		df	F-ratio
		N	Mean	N	Mean		
1.	Total Academic achievement	48	386.08	48	354.21	95	13.80
2.	Achievement in Science	48	67.08	48	58.38	95	32.06

It is evident from Table 5 that N for each group was 48. The means of academic achievement of students from urban institutions and rural institutions were 386.08 and 354.21 respectively. The F-ratio for the above means was 13.80 for 95 df. It is significant at 0.01 levels. This indicates that observed difference between the two means is not by chance. Also, it can be observed that the mean of students of urban institutions is higher than that of rural institutions. Thus the null hypothesis of no difference in the achievement of urban and rural school students is rejected. The students from urban schools have achieved more and hence it can be safely concluded that location has a significant effect on academic achievement.

Table 5, could be seen that N was 48 for each group. The mean of achievement in science of students from urban institutions was 67.08 while that of rural institutions was 58.38. The F-ratio for

difference of above means was 32.06 for 95 df. It is significant at 0.01 levels. The significant F-ratio shows that there is less than one chance out of 100 that of observed difference is by chance alone. Therefore, it can be said that the mean of achievement of students from urban institutions is higher than that of rural institutions. Therefore, the null hypothesis is rejected. It shows that there is clear cut difference between the achievements of two types of location of institutions. Urban students are superior in their academic achievement as well as achievement in science as compared to rural students.

The Findings

The major findings of the present study are as follows:

1. Academic achievement of students of enriched climate classrooms is better than that of students of poor climate classrooms.

2. Achievement of students in Science enriched climate classrooms is better than that of students of poor climate classrooms.
3. Academic achievement of wards of high aware parents is more than that of wards of low aware parents.
4. Achievement of wards of high aware parents in Science is more than that of wards of low aware parents.
5. Academic achievement of students of urban institutions is significantly higher than that of students from rural institutions.
6. Achievement in Science of students from urban institutions is significantly higher than that of students from rural institutions.

Implications

As the classroom climate has been found to be an important contributor of academic achievement, the study has importance for the pre-service and in-service teachers. They should acquaint themselves with the factors contributing better classroom climate. They should be taught the effect of warmth behaviour and cognitive stimulation on the performance of the students. Also the study has importance for curriculum developers and counsellors. The parents should be actively involved in the policy making process for the educational system as the parental awareness has a strong effect on the academic achievement of the students.

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