



IMPACT OF HOME ENVIRONMENT AND SCHOOL ORGANIZATIONAL CLIMATE ON LEARNING ACHIEVEMENT IN LANGUAGE AND MATHEMATICS

Dr. Suresh Chand

Principal, Nalanda College of Education, V.P.O. Jhaniari, Teh. & Distt. Hamirpur, Himachal Pradesh, India.

Abstract

This study intended to investigate the impact of home environment and school organizational climate on learning achievement in language and mathematics. A sample of 1345 sixth class students and 301 teachers (who taught these sampled students) from 52 schools was selected. The data was collected by using School Organizational Climate Description Questionnaire. (SOCDO) developed and standardized by Motilal Sharma (1978), Home-Environment Inventory (HEI), developed and standardized by Mishra (1986) and Language Achievement Test (Hindi) and Mathematics Achievement Test developed and standardized by Chand, S. (2002). Two way analysis of variance was used to study the main and interaction effects of school organizational climate and home environment on learning achievement of elementary school students in Hindi and mathematics. Results shows that level of learning achievement of elementary school students in Hindi is moderate (41.50%) and in mathematics is low (33.14%). The familiar school climate is comparatively more facilitator in enhancing learning achievement of elementary school students, both in Hindi and mathematics. The closed school climate is most debilitating condition in the learning achievement of elementary school students, both in Hindi and mathematics. The elementary school students perceiving home environment to be better or poor do not differ significantly in their learning achievement in Hindi and mathematics. The interaction effect of school organizational climate and home environment turned out to be non-significant in explaining learning achievement of elementary school students in Hindi and mathematics.

Key Words: *Home Environment, School Organizational Climate, Learning Achievement.*

Introduction

Learning achievement is synonymous to academic achievement or scholastic achievement and is used invariably only to reflect on the levels of performance by the recipients, i.e., learners as per the prescribed course content. Academic achievement of a pupil refers to the knowledge attained and skills developed in the school subjects, generally indicated by the marks obtained in tests, may be teacher made or standardized, following psychometric principles. Good (1959) has defined academic achievement as "the knowledge attained or skills developed in the school subjects" usually designated by test scores or marks assigned by teachers or by both. Since achievement is a continuous process in teaching-learning, it is desirable to refer to term learning achievement, rather than academic performance or achievement with a purpose to assess levels of achievement during the academic session.

School Organizational Climate

The school is one of the most important formal agencies of education having most intimate influence on the child's academic performance. Forehand and Gilmer (1959) defined organizational climate as a set of organizational properties which may influence the behavior of individuals in an organization. The dimensions of interaction facilities, willingness to change, student autonomy, feedback of students, instructor's contribution and task concern are also considered as major components of climate in an institution (Hall, 1970). Organizational climate can be viewed as a relatively enduring quality of the internal environment of an organization,



experienced by its members that influence their behavior. Group norms are the powerful shapers of organizational climate through which it makes itself felt, and influences the organizational behavior (perceptions, values, attitudes etc.) of incumbents, both teachers and students in a varied manner, with certain conditions in the environment being more conducive for enhancing performance of the individuals – may be providers or recipients.

Home Environment

The family is man's oldest, most pervasive and most powerful factor in the development of human personality – for learning how to be human rather than animal. The interrelationships of the family members create a whole (family), which is greater than the sum of its parts (Compton and Galaway, 1979). Misra (1986) conceived home environment as a measure of the quality and quantity of social, emotional and cognitive support that has been available to the child within the home. Family factors are important determinants of achievement because home is the place where the child spends most of his time and where all his physical and emotional needs are met. Home is expected to be the most secure and stabilizing condition in the developments process of child (Morrison and McIntyre, 1973). It is a well-established fact that the child completely depends on parents for basic physical, emotional and social needs, especially in the first years of his life. In the process of growth and development the child picks up myriad influences from family as parents transmit their concepts to the child through their day-to-day interaction with him/her and these provide direction to the child's growth and development. The child deprived of parental affection and proper care adversely affects the emotional development of the child (Mehta, 2002).

Review of related literature

It was noticed that high percentage of marks were secured by the students of open climate, the least was found out in closed climate (Khan, 1995; Panda et al. 1995). Naidu (1998), also found that home and school environment are most significant variables in academic achievement of formal stream students. Littman (2000) sees the effect of child-centered and school-centered parent involvement on children's achievement and found that child-and school-centered involvement have a significant positive effect on achievement. Holding family context constant, child-centered involvement, as well as child-and school-centered involvement, have an equal effect on math achievement. Sundaram (2000) concluded that socio-economic status of students significantly related to the concept development and learning environment positively affects the concept development in social studies. Basantia and Mukhpadhaya (2001) reported that high and low achievers differed significantly in their perceptions on home and school environment. Further regression analysis results indicated that academic achievement of the secondary school students was significantly related to their home environment, but not with school environment. Narad and Abdullah (2016) found significant positive relationship between academic performance of secondary school girls with parental encouragement and school environment. Family environment has positive influence on the academic achievement of students. (Bajwa, 2006; Kakkar, 2016) and Significant positive relationship exists between school climate and academic achievement of school students. (Bhat and Mir, 2018; Purkait, 2019; Mathialahan 2020).

Along with role of school organizational climate, home environment has been one of the most influencing environmental conditions in the development of the child, not only in the educational endeavors, but also throughout the life span. Since the child grows in home environment and prepares for future life through schooling processes, both these aspects i.e. home and school are having their specific as conjoint role in shaping of the personality of child and his/her performance, being assessed as learning achievement. Hence it was



worthwhile to look into the learning achievement of elementary schools students along with its relationship with school organizational climate and home environment.

Objectives of the Study

1. To study learning achievement of elementary school students in Hindi and mathematics in relation to school organizational climate.
2. To study learning achievement of elementary school students in Hindi and mathematics in relation to home environment.
3. To study interaction effect of home environment and school climate on learning achievement of elementary school students in Hindi and mathematics.

Hypotheses

1. The elementary school students belonging to schools having open, autonomous and familiar climate will perform significantly better in their learning achievement than their counterparts belonging to schools having controlled, paternal and closed climate in Hindi and mathematics.
2. The elementary school students having better home environment will perform significantly better in their learning achievement in Hindi and mathematics than their counterparts having poor home environment.
3. There will be significant interaction effect of home environment and school climate on learning achievement of elementary school students in Hindi and mathematics.

Methodology

Descriptive method of research was followed in the conduct of the present study.

Tool Used

1. School Organizational Climate Description Questionnaire. (SOCDDQ) developed and standardized by Motilal Sharma (1978) was used to collect the data to identify type of school on the basis of the psycho-social dynamics operating in a school, as perceived by the school teachers. The SOCDDQ has 64 items divided into six sub tests of school organizational climate to classify school as naming: open climate; autonomous climate; familiar climate, controlled climate; paternal climate, and closed climate.
2. Home-Environment Inventory (HEI), developed and standardized by Mishra (1986) was used to collect the data students pertaining to their home environment. The inventory contains 100 items.
3. Language Achievement test (Hindi) developed and standardized by Chand, S. (2002). Test consist of 75 questions. Maximum marks of test are 75.
4. Mathematics Achievement test developed and standardized by Chand, S. (2002). Test consist of 50 questions. Maximum marks of test are 50.

Sample

A sample of 1345, 6th grade students studying in middle, high and senior secondary school students was selected by randomly selecting 13 schools each from four randomly selected districts of Himachal Pradesh namely, Kangra, Kullu, Shimla and Chamba for assessment of learning achievement and home environment. Further all the teachers (total 301 teachers) teaching 6th, 7th and 8th students in 52 selected schools constituted the sample for assessing school organizational climate.



In present study 6X2 factorial design thought worthwhile for analysis of data. Due to varying number of students in each of 6X2 classification, to apply two-way analysis of variance with a fixed number in each conditions. So, a total sample of 300 subjects was used for the purpose of analysis of data.

Statistical Treatment of Data

Two way analysis of variance was used to study the main and interaction effects of school organizational climate and home environment on learning achievement of elementary school students in Hindi and mathematics.

Result and Discussion

Learning Achievement in Hindi in terms of School Organizational Climate and Home Environment

The means and S.D. of learning achievement in Hindi in 6x2 factorial design, to be used for analysis of variance are given in the table 1 and summary of ANOVA is presented in table 2

Table 1: Means And Standard Deviations Of Learning Achievement Of Elementary School Students In Hindi In Terms Of School Organizational Climate And Home Environment

Home Environment(B)		School Organizational Climate (A)						Total (B)
		Open	Autonomous	Familiar	Controlled	Paternal	Closed	
Better	M	31.60	34.68	45.84	30.12	30.24	17.88	31.73
	SD	9.68	13.19	20.42	14.65	14.35	9.27	16.30
Poor	M	32.12	30.88	47.40	28.96	27.12	16.76	30.54
	SD	11.82	9.27	11.74	14.03	14.16	9.95	14.95
Total	M	31.86	32.78	46.62	29.54	28.68	17.32	31.13
	SD	10.81	11.57	16.67	14.36	14.34	9.38	15.66

Table 1 shows moderate level (M=31.13; 41.50%) learning achievement of elementary school students in Hindi language.

Table 2: Summary of Complete Analysis of Variance

Source of Variation	Sum of Squares(SS)	df	Mean Square(MS)	F-Value
School Organizational Climate (A)	22122.11	5	4424.24	24.97**
Home Environment (B)	105.62	1	105.62	0.60
A x B	262.86	5	52.57	0.33
Within	51038.08	288	177.22	
Total	73528.67	299		

** P< .01



Main Effects

School Organizational Climate

Table 2 reveals significant F-value for main effect of school organizational climate ($F=24.97$, $p < .01$). Hence, it can be interpreted that the learning achievement of elementary school students in Hindi differs significantly in terms of six types of school organizational climate.

To locate the significant mean differences across different school organizational climates, matrix of mean differences based on the mean scores was drawn and Tucky test used to explain the mean differences at .05 and .01 levels of confidence.

It is evident from the table 3 that elementary school students studying in familiar school organizational climate have highest level of learning achievement in Hindi (46.62) and differ significantly from their counterparts studying in closed (17.32), paternal (28.68), controlled (29.54), open (31.86) and autonomous (32.78) types of school organizational climate.

Table 3: Matrix Of Mean Differences in Learning Achievement of Elementary School Students in Hindi across Types of School Organizational Climate averaged over the Levels of Home Environment

School Organizational Climate	Closed (17.32)	Paternal (28.68)	Controlled (29.54)	Open (31.86)	Autonomous (32.78)	Familiar (46.62)
Closed (17.32)	-	11.36**	12.22**	14.54**	15.46**	29.30**
Paternal (28.68)	-	-	0.85	3.17	4.09	17.93**
Controlled (29.54)	-	-	-	2.32	3.24	17.08**
Open (31.86)	-	-	-	-	0.88	14.76**
Autonomous (32.78)	-	-	-	-	-	13.84**

Least Significant Difference (LSD): 7.41 (.05) and 9.79 (.01)** $p < .01$

Further, the closed school organizational climate students, having lowest level of learning achievement in Hindi, differ significantly from those studying in paternal, controlled, open, autonomous and familiar school organizational climate. Further, the students belonging to autonomous, open and paternal school organizational climate do not differ in their learning achievement in Hindi.

Home Environment

Table 2 further reveals that F-value for the main effect of home environment came out to be 0.60 which is not significant even at .05 level. This is indicative of the fact that mean learning achievement of the students in Hindi does not differ significantly across poor and better home environment (31.73:30.54). In other words, this means that learning achievement of elementary school students in Hindi is independent of home environment.



Interaction Effect

The non-significant interaction effect ($F=0.33, p > .05$) of school organizational climate and home environment indicates that the mean differences in learning achievement of students in terms of types of school organizational climate do not change in case of better or poor home environment conditions, and home environment does not affect the significant mean differences, observed in terms of types of school organizational climate, in learning achievement of elementary school students in Hindi.

Learning Achievement in Mathematics in terms of School Organizational Climate and Home Environment

The means and S.D. of learning achievement of in mathematics in 6x2 factorial design are given in table 4 and summary of ANOVA presented in table 5.

Main Effects

School Organizational Climate

Table 5 shows that the main effect of school organizational climate on the learning achievement of the students in mathematics turned out to be significant ($F=30.37, p < .01$). Hence it may be inferred that learning achievement of elementary school students in mathematics differs significantly with respect to type of school organizational climate.

On the basis of these mean learning achievement scores, matrix of mean differences was generated and then Tucky test applied to identify significant differences among different school organizational climate students in their learning achievement.

Table 4: Means and Standard Deviations of Learning Achievement of Elementary School Students in Mathematics in Terms of School Organizational Climate and Home Environment

Home Environment (B)		School Organizational Climate (A)						Total (B)
		Open	Autonomous	Familiar	Controlled	Paternal	Closed	
Better	M	18.08	19.60	24.20	14.56	14.40	10.84	16.95
	SD	6.34	4.77	5.95	5.76	6.54	5.43	7.23
Poor	M	16.96	19.40	23.16	15.20	11.76	10.68	16.19
	SD	5.47	3.26	5.88	7.27	7.20	5.41	7.31
Total (B)	M	17.52	19.50	23.68	14.88	13.08	10.76	16.57
	SD	5.95	4.09	5.94	6.56	7.00	5.42	7.28

Table 5 reveals low level ($M=16.57; 33.14\%$) of learning achievement of elementary school students in mathematics.

Table 5: Summary of Analysis of Variance

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-value
School Organizational Climate (A)	5441.59	5	1088.32	30.37**
Home Environment (B)	42.56	1	24.56	1.19
A x B	79.70	5	15.94	0.44
Within	10321.66	288	35.84	
Total	15885.51	299		

** $P < .01$



Table 6 reveals that mean learning achievement of elementary school students in mathematics with familiar school organizational climate (23.68) differs significantly from open (17.52), controlled (14.88), paternal (13.08) and closed climate students (10.76) at 0.01 level, and from those with autonomous school organizational climate (19.50) at .05 level of confidence (Fig. 6.2). The mean achievement of autonomous school organizational climate students differs from closed, paternal and controlled school organizational climate students at .01 level.

Table 6: Matrix of Mean Differences in Learning Achievement of Elementary School Students in Mathematics across Types of School Organizational Climate averaged over the Levels of Home Environment

School Organizational Climate	Closed (10.76)	Paternal (13.08)	Controlled (14.88)	Open (17.52)	Autonomous (19.50)	Familiar (23.68)
Closed(10.76)	-	2.32	4.12*	6.76**	8.74**	12.92**
Paternal(13.08)	-	-	1.80	4.44**	6.42**	10.60**
Controlled(14.88)	-	-	-	2.64	4.62**	8.80**
Open(17.52)	-	-	-	-	1.98	6.16**
Autonomous(19.50)	-	-	-	-	-	4.18*

Least significant Difference (LSD): 3.30 (.05) and 4.35 (.01)

* P<.05; ** P<.01.

The open school organizational climate students also differ significantly from closed and paternal school organizational climate students in their learning achievement in mathematics at .01 level of confidence. The table 6 further shows that mean difference between controlled and closed school organizational climate students is also significant at 0.05 level of confidence, in favour of controlled school climate students. A non-significant mean difference exists between 'paternal and closed', 'controlled and paternal'; 'open and controlled' and 'autonomous and open' school organizational climate students in the learning achievement in mathematics.

Home Environment

The F-Value for the main effect of total home environment turned out to be 1.19, which is not significant even at .05 level of confidence (Table 5). This is indicative of the fact that learning achievement of elementary school students in mathematics is independent of levels of home environment i.e. either better (M=16.95) or poor (M=16.19).

Interaction Effect

The table 5 further reveals that interaction effect of school organizational climate and total home environment on learning achievement of elementary school students in mathematics turned out be non-significant (F=0.44 ;df=5/288; P>.05). This indicates that school organizational climate is found to play a positive role in learning achievement of elementary school students, irrespective of levels of home environment.



Testing of Hypotheses

The hypothesis (1) *'the elementary school students belonging to schools having open, autonomous and familiar climate will perform significantly better in their learning achievement in Hindi and mathematics than their counterparts belonging to schools having controlled, paternal and closed climate'* is accepted.

The hypothesis (2) *'the elementary school students having better home environment will perform significantly better in their learning achievement in Hindi and mathematics than their counterparts having poor home environment'*, is rejected.

The hypothesis (3) *'there will be significant interaction effect of home environment and school climate on learning achievement of elementary school students in Hindi and mathematics'*, is rejected.

Conclusions

1. Level of learning achievement of elementary school students in Hindi is moderate (41.50%) and in mathematics is low (33.14%).
2. The mean learning achievement of elementary school students in Hindi is appreciably high in three types of school climate, namely, "familiar, open and autonomous" (ranging from 31.86 to 46.62) as compared to their counterparts in the "closed, controlled and paternal" types of school climate (ranging from 17.32 to 29.54).
3. The learning achievement of elementary school students in mathematics is significantly higher in "familiar, open and autonomous" (ranging from 17.52 to 23.68) school climate as compared to those students studying in "controlled, paternal and closed" (ranging from 10.76 to 14.88) school climate.
4. The elementary school students perceiving home environment to be better or poor do not differ significantly in their learning achievement in Hindi and mathematics.
5. The familiar school climate is comparatively more facilitator in enhancing learning achievement of elementary school students, both in Hindi and mathematics. Whereas open and autonomous school climate conditions are less facilitative in learning achievement of students in comparison to familiar school climate.
6. The closed school climate is most debilitating condition in the learning achievement of elementary school students, both in Hindi and mathematics, as compared to controlled and paternal school climate. Whereas paternal and controlled school climate conditions are somewhat better than closed school climate to explain learning achievement of elementary school students in Hindi and mathematics.
7. The interaction effect of school organizational climate and home environment turned out to be non-significant in explaining learning achievement of elementary school students in Hindi and mathematics. This is indicative of the fact that "familiar, open and autonomous" school organizational climate, irrespective of home environment, plays a crucial role in learning achievement of elementary school students in Hindi and mathematics. In other words "familiar, open and autonomous" school climate conditions are more conducive than "controlled, paternal and closed" school climate conditions in learning achievement of elementary school students in Hindi and mathematics.

Educational Implications

The in-service training programs, being organized for teachers and head masters/principles should have a more psychological orientation in management of teaching-learning process in classroom situation, and harmonious and integrated approach in organization of co-curricular activities in the schools. There is need to strengthen the



"extension" role of institutions of higher education to orient and sensitize adult population for their own educational advancement as well as care for education of their children with a psychological orientation. Parental control in home needs to be again 'child centered' and 'independence oriented', where the child is provided an opportunity to express himself/herself freely and seek satisfaction by interacting more openly with elder/adult members of the family, and in the neighbourhood.

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