

The Perception of Students Mathematics in Classroom Psycho-Social Learning Environment of Private Secondary Schools in Gujrat-Pakistan

Laraib¹, Anum Nisa² and Mehwish Javed³

Abstract

The objective of the study was to assess the perceptions of students in mathematics classroom Psychosocial Learning Environment of private secondary schools in Gujrat. Population of the study consisted of 10th graders enrolled in private secondary schools in Gujrat City. Census sampling technique was used to select the sample. Data were gathered through What is Happening In This Class? Questionnaire. CVI of instrument was 0.94. Reliability of instrument was found 0.86. Data were analyzed using one sample t-test, independent sample t-test, and One-way ANOVA. Significant difference between Students perceptions about psychosocial learning environment in mathematics classes was found for Student Cohesiveness, Teacher Support, Involvement, and Equity. Insignificant difference between Students perceptions about psychosocial learning environment in mathematics classes was found for Task Orientation and Cooperation. Secondary school students feel more conducive learning environment in their mathematics classes.

Keywords: Students Perceptions, Mathematics Classroom, Psychosocial Learning Environment, Private Secondary School

Introduction

Mathematics plays a very important role in our daily life because it is used to solve daily life problems. If someone knows the concept of mathematics, then he/she can easily solve daily life problems. The scope of mathematics is being broadened day by day. It helps the individuals in every field of life like business, engineering, medical, information technology, and education etc. (Keith, 2000). Mathematics is the inescapable need to be understood to improve the knowledge of world.

Teaching of mathematics is totally different from other teaching of subjects. Teaching of mathematics is an art and abstract subject. It develops critical thinking in teacher and students. It is based on facts and figures. Effective teaching is one of the major reasons to ensure the effective learning. Educational policies developed by the policy maker in Pakistan. Since its inception, only development of physical environment is being focused. Development of psychosocial environment is a grey area in educational policies in Pakistan. Hence it is mostly neglected in our educational system.

Klarner (2003) stated that psychosocial learning environment plays a vital role in the improvement of teaching and learning process. "A positive learning environment nurtures these feelings by allowing students to explore and expand their knowledge without undue risk or fear". Dorman (2003) argued that positive classroom learning environment increases cognitive plus affective outcomes of the students' (Allen & Fraser, 2007).

Classroom environment has significant importance for students learning at all level of education. Different aspects of the environment including psychosocial aspects contribute significantly in the students leaning performance. Classroom psychosocial learning

¹ PhD Scholar, Department of Education, University of Gujrat, Punjab, Pakistan

² PhD Scholar, Department of Education, University of Gujrat, Punjab, Pakistan

³ PhD Scholar, Department of Education, University of Gujrat, Punjab, Pakistan

environment gives teachers more opportunities to communicate with students through teaching ethics, attitudes and values considerably. If students' perceptions are not positive of learning environment in mathematics classes their learning objectives would not be achievable. A positive classroom learning environment might be helpful in achieving educational objectives (Islam, 2012).

The study's foremost objective was to determine the students' perceptions about psychosocial learning environment in mathematics classes. To assess the variables adapted questionnaire of the WIHIC "what is happening in this class?" was used.

Literature Review

A location, culture, context setting or place that is affecting the learning of students is called learning environment. Fraser (1998) defined Learning environment as psychological, pedagogical and social setting which not only affects the achievements and the attitude of students but learning also occurs in this setting.

Pappas (1990) identified four basic components of a healthy learning environment i.e. Physical environment, psychosocial environment, interactive environment and role of tradition. Vosoko (1984) has defined four segments of environment i.e. social system, Ecology, culture, and milieu. Galbraith (1990) indicated that learning environment involved physical plus psychosocial learning environment.

Classroom environment represents both climate and structure, fostered and created by the instructors. Classroom climate is defined as the level of relationship between the students and teachers and the respect or regard they show for each other in classroom. Structural elements consist of the use of enforcement, routine and establishment of clear protection and expectations of instructional time. Each framework defined the significance of classroom environment to facilitate for effective teaching. According to the Danielson (2007) the framework of teaching explains the classroom environment by the degree to which teacher (a) creates a culture of learning, (b) manages physical space, (c) creates an environment of rapport and respect, (d) manages classroom procedures, and (e) supervises student behavior.

There are many types of learning environment such as physical learning environment, instructional learning environment and psychosocial learning environment. Blended approach is recommended while designing the classrooms, to provide an adaptable environment for traditional and technical approaches towards education. We can get favorable outcome by creating such environment which can encourage the learners to be engaged and develop a healthy relationship between learners and different aspects of learning environment. According to this phenomenon effectiveness relies on the active involvement of all individuals who get involved in the process of education (Aspden & Helm, 2004).

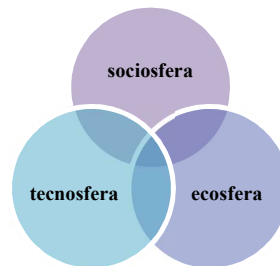
Instructional environment which encompasses the recognition and operationalization needs to be handled carefully because it can influence the results of a student (Lewis, Parsad, Carey, Bartfai, Farris, & Smerdon, 1998). Teaching framework organizes the responsibilities of instructor into four domains: (a) classroom environment, (b) professional responsibilities, (c) planning and preparation, and (d) instruction. Each domain is additionally divided into different components. From the four domains, only instruction and classroom environment reflect behaviors that happen during the instruction. Alternate domains represent skills, abilities and knowledge which are required for teachers outside the classroom.

Classrooms promote interaction between students and teachers. It motivates Students and develops a connection between teachers and peers. It gives a positive route of development in social as well as in academic areas. Learning cannot be guaranteed without desirable and supportive psychosocial environment. Rawnsley and Fisher (1998) described psychosocial environment as psychological as well as social relationships between the students and teacher. In other words, learning environment contains both the physical plus socio psychological

perspectives that influence the learning of students in classroom settings. Johnson and Johnson (2009) claimed that desirable and quite long-lasting change in behavior is called learning. Tanner (2000) explained that learning environment refers to an appropriate educational community designed to support all learners in accomplishing their learning goals up to the highest.

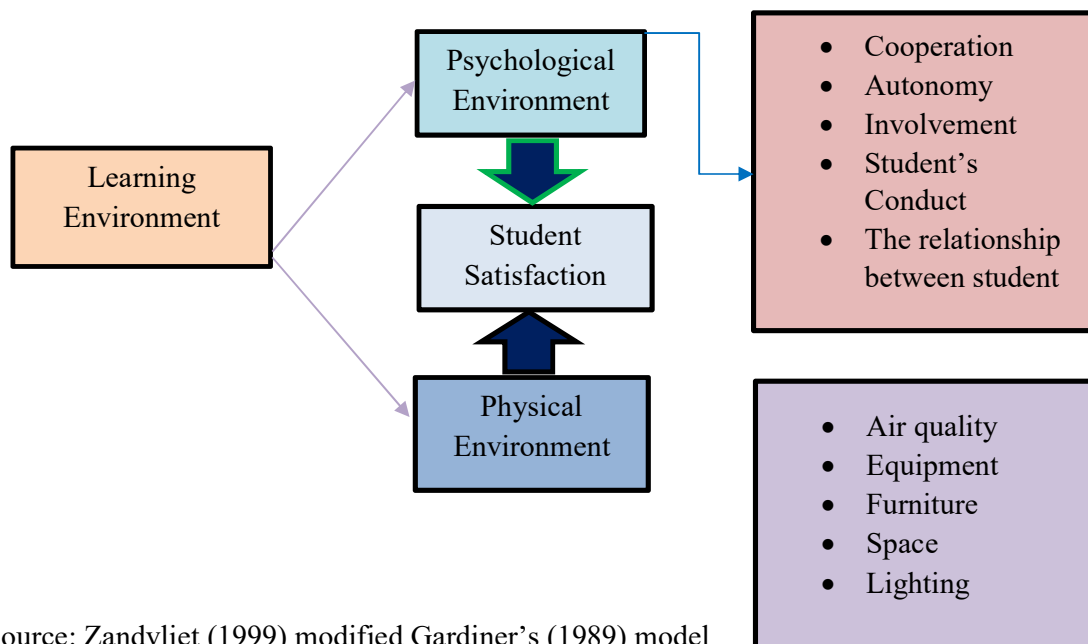
Gardiner (1989) introduced model of learning environment in which he describes three covering circles “ecosfera (physical environment), sociosfera (psychosocial environment) and tecnosfera (artificial learning environment)”. As indicated by Gardiner, learners are the greatest multifaceted segment during the procedure of learning and they are affected by the physical and psychosocial parts of learning environment.

Figure 1 *Model of Learning Environment*



Zandvliet (1999) revised Gardiner's (1989) model of learning environment and further divided it into two types named as physical and psychological environment. Moreover, either type has different critical elements.

Figure 2 *Model of Psychosocial and Physical Learning Environment*



Source: Zandvliet (1999) modified Gardiner's (1989) model

Hamre and Pianta (2007) define the importance of emotional and social interactions in classroom between and among the students. WHIC is an imperative instrument commonly used to evaluate learning environment of classroom. It is a mixture of different classroom learning environment determining questionnaire. The original version of this instrument comprised of nine scales with ninety statements but later it was enriched. Now latest version

of WIHIC comprised of seven factors and each factor has eight statements. And those factors have been enlisted by researcher in first chapter. McCleod and Fraser (2010) translated Arabic version of WIHIC for Arabic countries. Kim (2000) presented the korain version of same questionnaire and also discussed the cross-cultural validity.

According to Fraser (1998) there lies a slight difference between environment of mathematic classroom and environment of other subject classroom. Throughout the years, different questionnaire have been used in various schools and classroom settings. There exists a wealth of literature on the investigation, conceptualization and evaluation of student as well as teacher's perceptions about different aspects of classroom learning environment (Tsao, 2004). Learning is defined as the cognitive process that describes the individual cognition and it is related to the learner's mind (Howard, Mazintas, & Kanai, 2009).

Methodology

Instrument Development

In this Study Students' perceptions about psychosocial learning environment in mathematic classes were examined. To assess the variables adapted questionnaire of the WIHIC "what is happening in this class?" was used. It was developed by Fraser et al. (1996) and consists of eight factors. It is mostly used to assess the classroom environment in different researches (Fraser, 2007, 2012). It is cross-validated in different cultures e.g. United Kingdom, Canada, Asia, India, Thailand, china, Pakistan and Australia (Dorman, 2003, 2008). In this study, only six dimensions (Student Cohesiveness, teacher support, involvement, task oriented, cooperation, and Equity) were used for Students'. Dorman, Fisher, and Waldrip (2006) reduced the response format of participants on each statement gathered by using a five-point Likert scale (Almost never = 1, Seldom = 2, Sometimes = 3, Often = 4, Almost always = 5). Likert scale describes the degree of agreement or disagreement with the statements about the person, object, or situation (Fraenkel, 2012; Gay, 2009). Detail of each dimension with no. of items has been reported in the table given below 3.3.

Table 1

Name of Dimension with their number of statements of Students Questionnaire

Dimensions of Scale	No. of Items	Serial No. of Statements in Final Questionnaire
Students Cohesiveness	6	1,7,13,19,25,29
Teacher Support	5	2,8,14,20,26
Involvement	4	3,9,15,21
Task Orientation	5	4,10,16,22,27
Cooperation	5	5,11,17,23,32
Equity	7	6,12,18,24,28,30,31

Expert Validation

The experts reviewed the preliminary version of the WIHIC "what is happening in this class?" Questionnaire. These experts professional professors belong from different universities. Experts are requested to provide their judgment and feedback on each scale statement. According to the suggested comments and feedback of the experts, the document was modified and improved.

Content Validity

The Content Validity Ratio (CVR) for each statement and Content Validity Index (CVI) of the overall scale was calculated to enhance the quality and validity of the questionnaire, known as the WIHIC “what is happening in this class?” Questionnaire. Highlighted Items in table were removed from the final instruments of the study due to the low CVR. Later on CVI of the 32 items is calculated below.

Table 2
Detail of Content Validity Ratio

Sr. No.	E	N	UN	CVR	Sr. No.	E	N	UN	CVR
WI1	14	0	0	1	WI 19	14	0	0	1
WI 2	13	1	1	0.857	WI 20	14	0	0	1
WI 3	13	0	1	0.857	WI 21	14	0	0	1
WI 4	13	0	1	0.857	WI 22	14	0	0	1
WI 5	14	0	0	1	WI 23	13	0	1	0.857
WI 6	14	0	0	1	WI 24	14	0	0	1
WI 7	12	0	2	0.714	WI 25	13	0	1	0.857
WI 8	14	0	0	1	WI 26	13	0	1	0.857
WI 9	14	0	0	1	WI 27	14	0	0	1
WI 10	11	0	2	0.571	WI 28	7	1	5	0
WI 11	12	1	2	0.714	WI 29	11	1	2	0.571
WI 12	14	0	0	1	WI 30	14	0	0	1
WI 13	13	0	1	0.857	WI 31	14	0	0	1
WI 14	13	0	1	0.857	WI 32	13	0	0	0.857
WI 15	13	0	1	0.857	WI 33	14	0	0	1
WI 16	13	0	1	0.857	WI 34	14	0	0	1
WI 17	11	0	2	0.571	WI 35	14	0	0	1
WI 18	14	0	0	1	WI 36	14	0	0	1

Highlighted Items in table were removed from the final instruments of the study due to the low CVR. Later on CVI of the 32 items is calculated below.

$$\text{CVI} = \frac{\sum \text{CVR}}{\text{Retained items}}$$

$$\text{CVI} = \frac{29.857145}{32}$$

$$\text{CVI} = 0.933358$$

Pilot Testing

The required sample size for factor analysis is 10–15 participants for each item (Hof, 2012). As a result, Later on, the questionnaires of the study were piloted on 134 students of 10th grade which were not included in actual sample. Reliability of the Questionnaire for Students’ and Teachers’ (WIHIC) is reported in table 3.3. And Dimension wise reliability of both questionnaires is reported in table 3.4.

Table 2: Mean, Standard Deviation and Reliability Coefficient on WIHIC (Students)

Respondents of the study	Mean	Std. Deviation	Cronbach Alpha Coefficient
Students'	26.99	2.83	0.86

DeVellis (2003) suggested that Cronbach alpha coefficient is one of the best indicators for checking internal consistency. Ideal value of Cronbach alpha coefficient for any questionnaire should be greater than 0.70. In this study, the value of Cronbach alpha coefficient for students' questionnaire 0.86 and for teachers' questionnaire 0.87 that was very good and acceptable because both values were greater than 0.70.

Table 3: Reliability Cronbach Alpha Coefficient for Dimensions of WIHIC (Internal Consistency)

Dimensions of Scale	No. of Items	Cronbach alpha coefficient
Students Cohesiveness	6	0.67
Teacher Support	5	0.60
Involvement	4	0.75
Task Orientation	5	0.53
Cooperation	5	0.67
Equity	7	0.74

Students' N=134

According to De villis (1991, 2007) acceptable value of alpha reliability is equal to or greater than 0.50. Thus, it was found that the alpha reliability value of questionnaire dimensions is greater than 0.50. Hence WIHIC is questionnaire is reliable for measuring "students' perceptions about psychosocial learning environment in mathematics classes".

Data Collection and Analysis

Data were collected from the selected five steams i.e. Allied Schools, County Public Schools, Shaukat Model Schools, The Educators Schools and Dar-e-Arqam Schools situated in Gujrat City. The researcher was personally visited all the selected schools for data collection. Prior permission before visiting the schools was ensured by the researcher from the Head of school. The data were collected from 10th grade students' about psychosocial learning environment in mathematics classes. Data were collected from all the students who were present there at the time of data collection. Necessary Information, Guidance and Direction were given to the students' about "How to fill the questionnaire?" all the information gathers' from the respondents' of the study were kept confidential. The information was used for research purpose only. Research Hypothesis was tested by using Statistical Package for Social Science (SPSS-21).

H₀1: There exists no statistically significant difference in the mean score of students' perceptions about psychosocial learning environment in mathematics classes and cut value i.e. 3.

Table 4

Comparison of Students Perceptions about Psychosocial Learning Environment in Mathematics Classes

Dimensions of psychosocial learning environment	Mean	Cut Value	S.D	M.D.	t-value	Sig (2 tailed)
Students Cohesiveness	4.22	3	0.57	1.22	67.69	.000**
Teacher Support	4.11	3	0.75	1.11	46.65	.000**
Involvement	3.58	3	0.93	.58	19.69	.000**
Task Orientation	4.29	3	0.64	1.29	63.66	.000**
Cooperation	4.08	3	0.72	1.08	47.34	.000**
Equity	4.18	3	0.74	1.18	50.54	.000**
Overall Students' perceptions	4.06	3	0.52	1.08	66.05	.000**

N= 1006, df= 1005, * $p < .05$, ** $p < .01$

One sample t-test was run to find out the difference of mean sample score from cut value. Mean differences reported in table 4 revealed that students' perceptions on all dimensions of psychosocial learning environment Viz. Students' Cohesiveness (t-value=67.69, $p = .000 < \alpha = .05$), Teacher Support (t-value=46.65, $p = .000 < \alpha = .05$), Involvement (t-value=19.69, $p = .000 < \alpha = .05$), Task Orientation (t-value=63.66, $p = .000 < \alpha = .05$), Cooperation (t-value=47.34, $p = .000 < \alpha = .05$), Equity (t-value=50.54, $p = .000 < \alpha = .05$) differ significantly from cut value. Students' perceive almost always Students Cohesiveness, Teacher Support, Task Orientation, Cooperation and Equity in their mathematics classes at secondary level where as they perceived that they are involved oftenly in mathematics classes. On the whole psychosocial learning environment (t-value=66.05, $p = .000 < \alpha = .05$) differs significantly from cut value. Students' perceived their psychosocial learning environment conducive.

H₀₂: There exists no statistically significant difference in the mean score between male and female students' perceptions about psychosocial learning environment in mathematics classes.

Table: 5

Gender wise Comparison of Students' Perceptions about Psychosocial Learning Environment in Mathematics Classes

Factors of Motivation	Mean		S.D.		M.D.	t-value	Sig. (2 tailed)	eta2
	Male	Female	Male	Female				
Job Commitment	4.14	4.28	0.59	0.54	-0.15	-4.09	.000	0.016
High Performance	4.04	4.16	0.72	0.77	-0.12	-2.55	.011	0.006
Low Turnover	3.51	3.63	0.76	1.04	-0.11	-1.89	.060	0.004
Overall Motivation	4.20	4.37	0.59	0.67	-0.17	-4.16	.000	0.017

df = 1004, No. of Male Students' = 437, No. of Female Students' = 569, * $p < .05$, ** $p < .01$

An independent sample t-test was conducted to compare the male and female students' perceptions about psychosocial learning environment in mathematics classes. Table 5 revealed that Significant difference between the male and female students' perceptions about psychosocial learning environment in mathematics classes was found for Student Cohesiveness (t=-4.09, $p = .000 < \alpha = 0.01$), Teacher Support (t=-2.55, $p = .01 < \alpha = 0.05$), Task Orientation (t=-4.16, $p = .000 < \alpha = 0.01$), Cooperation (t=-6.03, $p = .000 < \alpha = 0.01$), and Equity (t=-3.45, $p = .001 < \alpha = 0.01$). Insignificant difference between male and female students' perceptions about psychosocial learning environment in mathematics classes was found for Involvement (t=-1.89, $p = .060 > \alpha = 0.05$). Female students perceive more Student Cohesiveness, Teacher Support, Task Orientation, Cooperation and Equity in their mathematics classes as compared to male students. Eta square values revealed small difference in students' perceptions between male and female

students about their mathematics classes for Student Cohesiveness, Teacher Support, Task Orientation and Equity. Moderate differences were found in students' perceptions between male and female students about their mathematics classes for Cooperation. Significant difference between male and female students' perceptions about psychosocial learning environment in mathematics classes was found ($t=-5.05$, $p=.000 < \alpha=0.01$). Female students perceived more conducive psychosocial learning environment as compared to male students. Eta square value revealed moderates difference in students' perceptions between male and female students about their mathematics classes.

H₃: There exists no significant difference of Student Cohesiveness of Students about Psychosocial Learning Environment in Mathematics Classes among different school streams. One way analysis of variance was run to compare the Students Cohesiveness among Students' of five different school streams.

Table 6

Comparison of Students' Perceptions on Student Cohesiveness about Psychosocial Learning Environment in Mathematics Classes across different school streams

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5.639	4	1.410	4.380	.002**
Within Groups	322.205	1001	.322		
Total	327.844	1005			

* $p < .05$, ** $p < .01$

Table 6 revealed that $F(1001, 4) = 4.380$ was found significant because $p = .002 < \alpha .05$. It is therefore concluded that our null hypothesis "There exists no significant difference of Student Cohesiveness of students about psychosocial learning environment in mathematics classes among different school streams" is rejected. Hence there exists significant difference of students Cohesiveness of students about psychosocial learning environment in mathematics classes among different school streams. Since F-value was found significant. Therefore, it was decided to run Post hoc test to explore difference between the groups.

Table 7

Multiple Comparisons of Students' Perceptions on Student Cohesiveness about psychosocial learning environment in mathematics classes

School Name		N		Mean		S.D.		M.D.	Sig.
1	2	1	2	1	2	1	2		
Allied	Dar-e-Arqam	111	292	4.35	4.20	0.60	0.03	0.15	.125
Allied	The Educators	111	314	4.35	4.27	0.60	0.03	0.08	.703
Allied	County Public	111	113	4.35	4.27	0.60	0.05	0.14	.334
Allied	Shaukat Model	111	176	4.35	4.10	0.60	0.05	0.26*	.002**
Dar-e-Arqam	The Educators	292	314	4.20	4.27	0.03	0.03	-0.07	.559

Dar-e-Arqam	County Public	292	113	4.20	4.27	0.03	0.05	-0.01	1.000
Dar-e-Arqam	Shaukat Model	292	176	4.20	4.10	0.03	0.05	0.11	.272
The Educators	County Public	314	113	4.27	4.21	0.03	0.05	0.06	.860
The Educators	Shaukat Model	314	176	4.27	4.10	0.03	0.05	0.18*	.008**
County Public	Shaukat Model	113	176	4.27	4.10	0.05	0.05	0.12	.441

* $p < .05$, ** $p < .01$

Table 7 shows multiple comparisons of Students' Perceptions enrolled in different streams of private schools for Student Cohesiveness, a dimension of psychosocial learning environment. It revealed that comparisons of Students' Perceptions about psychosocial learning environment of mathematics classes on Student Cohesiveness dimensions enrolled in Allied schools stream & Shaukat Model schools stream ($p = .002 < \alpha .05$) and The Educators schools stream & Shaukat Model schools stream ($p = .008 < \alpha .05$) are found significant. Mean scores revealed that Students' Perceptions about psychosocial learning environment of mathematics classes on Student Cohesiveness dimension enrolled in Allied schools stream ($M = 4.35$, $S.D. = .59$) are better as compared to Students' Perceptions about psychosocial learning environment of mathematics classes on Student Cohesiveness dimension enrolled in Shaukat Model schools stream ($M = 4.09$, $S.D. = .05$). Mean scores showed that Students' Perceptions about psychosocial learning environment of mathematics classes on Student Cohesiveness dimension enrolled in The Educators Schools Stream ($M = 4.27$, $S.D. = 0.32$) are better than the Students' Perceptions about psychosocial learning environment of mathematics classes on Student Cohesiveness dimension enrolled in Shaukat Model Schools Stream ($M = 4.09$, $S.D. = .05$).

H_04 : There exists no significant difference of Teacher Support of Students about Psychosocial Learning Environment in Mathematics classes among different school streams. One way analysis of variance was run to compare the Teacher Support among Students' of five different school streams.

Table 8

Comparison of Students' Perceptions on Teacher support about Psychosocial Learning Environment in Mathematics Classes across different school streams

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.437	4	.859	1.513	.196
Within Groups	568.608	1001	.568		
Total	572.045	1005			

* $p < .05$, ** $p < .01$

Table 8 revealed that $F(1001, 4) = 1.513$ was found insignificant because $p = .196 > \alpha .05$. It is therefore concluded that our null hypothesis "There exists no significant difference of Teacher Support of students about psychosocial learning environment in mathematics classes among different school streams" is accepted. Hence there exists no significant difference of Teacher

Support of students about psychosocial learning environment in mathematics classes among different school streams.

H₀₅: There exists no significant difference of Involvement of Students about Psychosocial Learning Environment in Mathematics Classes among different school streams.

One way analysis of variance was run to compare the Involvement among Students' of five different school streams.

Table 9

Comparison of Students' Perceptions on Involvement about Psychosocial Learning Environment in Mathematics Classes across different school streams

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23.728	4	5.932	7.026	.000**
Within Groups	845.076	1001	.844		
Total	868.803	1005			

*p<.05, **p<.01

Table 9 revealed that $F(1001, 4) = 7.026$ was found significant because $p = .000 < \alpha .05$. It is therefore concluded that our null hypothesis "There exists no significant difference of Involvement of students about psychosocial learning environment in mathematics classes among different school streams" is rejected. Hence there exists significant difference of Involvement of students about psychosocial learning environment in mathematics classes among different school streams. Since F-value was found significant. Therefore, it was decided to run Post hoc test to explore difference between the groups.

Table 10

Multiple Comparisons of Students' Perceptions on Involvement about psychosocial learning environment in mathematics classes

School Name		N		Mean		S.D.		M.D.	Sig.
1	2	1	2	1	2	1	2		
Allied	Dar-e-Arqam	111	292	3.82	3.46	0.82	1.08	0.35*	.005**
Allied	The Educators	111	314	3.82	3.73	0.82	0.96	0.09	.918
Allied	County Public	111	113	3.82	3.49	0.82	0.63	0.33	.058
Allied	Shaukat Model	111	176	3.82	3.40	0.82	0.76	0.41*	.002**
Dar-e-Arqam	The Educators	292	314	3.46	3.73	1.08	0.96	-0.27*	.003**
Dar-e-Arqam	County Public	292	113	3.46	3.49	1.08	0.63	-0.02	.999
Dar-e-Arqam	Shaukat Model	292	176	3.46	3.40	1.07	0.76	0.06	.962

The Educators	County Public	314	113	3.73	3.49	0.96	0.63	0.24	.112
The Educators	Shaukat Model	314	176	3.73	3.40	0.96	0.76	0.33*	.002**
County Public	Shaukat Model	113	176	3.49	3.40	0.63	0.76	0.08	.994

*p<.05, **p<.01

Table 10 shows multiple comparisons of Students' Perceptions enrolled in different streams of private schools for Involvement, a dimension of psychosocial learning environment. It revealed that comparisons of Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimensions enrolled in Allied schools stream & Dar-e-Arqam schools stream ($p=.005 < \alpha.05$), Allied schools stream & Shaukat Model schools stream ($p=.002 < \alpha.05$), Dar-e-Arqam schools stream & The Educators schools stream ($p=.003 < \alpha=.05$), and The Educators schools stream & Shaukat Model schools stream ($p=.002 < \alpha.05$) are found significant. Mean scores revealed that Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimension enrolled in Allied schools stream ($M=3.82$, $S.D. = .82$) are better as compared to Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimension enrolled in Dar-e-Arqam Schools Stream ($M=3.46$, $S.D. = 1.08$). Mean scores showed that Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimension enrolled in Allied Schools Stream ($M=3.82$, $S.D. = .82$) are better than the Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimension enrolled in & Shaukat Model Schools Stream ($M= 3.44$, $S.D. =.76$). Mean scores indicated that Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimension enrolled in Dar-e-Arqam Schools stream ($M=3.46$, $S.D. = 1.08$) better as compare to Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimension enrolled in The Educators Schools stream ($M=3.73$, $S.D. = .96$). Mean scores found that Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimension enrolled in The Educators Schools stream ($M=3.73$, $S.D. = .95$) are better than the Students' Perceptions about psychosocial learning environment of mathematics classes on Involvement dimension enrolled in Shaukat Model Schools stream ($M= 3.40$, $S.D. =.76$).

H₀₆: There exists no significant difference of Task Orientation of Students about Psychosocial Learning Environment in Mathematics Classes among different school streams. One way analysis of variance was run to compare the Task Orientation among students of five different school streams.

Table 11

Comparison of Students' Perceptions on Task Orientation about Psychosocial Learning Environment in Mathematics Classes across different school streams

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.969	4	.742	1.795	.128
Within Groups	414.079	1001	.414		
Total	417.048	1005			

*p<.05, **p<.01

Table 11 revealed that $F(1001, 4) = 1.795$ was found insignificant because $p = .128 > \alpha.05$. It is therefore concluded that our null hypothesis “There exists no significant difference of Task Orientation of students’ about psychosocial learning environment in mathematics classes among different school streams” is accepted. Hence there exists no significant difference of Task Orientation of students about psychosocial learning environment in mathematics classes among different school streams.

H₀7: There exists no significant difference of Cooperation of Students about Psychosocial Learning Environment in Mathematics Classes among different school streams.

One way analysis of variance was run to compare the Cooperation among students of five different school streams.

Table 12

Comparison of Students’ Perceptions on Cooperation about Psychosocial Learning Environment in Mathematics classes across different school streams

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.772	4	.443	.851	.493
Within Groups	520.845	1001	.520		
Total	522.617	1005			

* $p < .05$, ** $p < .01$

Table 12 revealed that $F(1001, 4) = .851$ was found insignificant because $p = .201 > \alpha.05$. It is therefore concluded that our null hypothesis “There exists no significant difference of Cooperation of students’ about psychosocial learning environment in mathematics classes among different school streams” is accepted. Hence there exists no significant difference of Cooperation of students about psychosocial learning environment in mathematics classes among different school streams.

H₀8: There exists no significant difference of Equity of Students about Psychosocial Learning Environment in Mathematics Classes among different school streams.

One way analysis of variance was run to compare the Equity among students of five different school streams.

Table 13

Comparison of Students’ Perceptions on Equity about Psychosocial Learning Environment in Mathematics Classes across different school streams

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.342	4	2.835	5.268	.000**
Within Groups	538.778	1001	.538		
Total	550.120	1005			

* $p < .05$, ** $p < .01$

Table 13 revealed that $F(1001, 4) = 5.268$ was found significant because $p = .000 < \alpha.05$. It is therefore concluded that our null hypothesis “There exists no significant difference of Equity of students’ about psychosocial learning environment in mathematics classes among different school streams” is rejected. Hence there exists significant difference of Equity of students about psychosocial learning environment in mathematics classes among different school streams. Since F-value was found significant. Therefore, it was decided to run Post hoc test to explore difference between the groups.

Table 14
Multiple Comparisons of Students' Perceptions on Equity about psychosocial learning environment in mathematics classes

School Name		N		Mean		S.D.		M.D.	Sig.
1	2	1	2	1	2	1	2		
Allied	Dar-e-Arqam	111	292	4.30	4.27	0.86	0.61	0.03	.998
Allied	The Educators	111	314	4.30	4.19	0.86	0.76	0.11	.681
Allied	County Public	111	113	4.30	3.99	0.86	0.93	0.30*	.017*
Allied	Shaukat Model	111	176	4.30	4.04	0.86	0.65	0.26*	.033
Dar-e-Arqam	The Educators	292	314	4.27	4.19	0.60	0.76	0.08	.655
Dar-e-Arqam	County Public	292	113	4.27	3.99	0.60	0.93	0.28*	.006**
Dar-e-Arqam	Shaukat Model	292	176	4.27	4.04	0.60	0.65	0.23*	.009**
The Educators	County Public	314	113	4.19	3.99	0.76	0.93	0.20	.104
The Educators	Shaukat Model	314	176	4.19	4.04	0.76	0.65	0.15	.193
County Public	Shaukat Model	113	176	3.99	4.04	0.93	0.65	-0.05	.984

* $p < .05$, ** $p < .01$

Table 14 shows multiple comparisons of Students' Perceptions enrolled in different streams of private schools for Equity, a dimension of psychosocial learning environment. It revealed that comparisons of Students' Perceptions about psychosocial learning environment of mathematics classes on Equity dimensions enrolled in Allied schools stream & County Public schools stream ($p = .017 < \alpha = .05$), Dar-e-Arqam schools stream & County Public schools stream ($p = .006 < \alpha = .05$) and Dar-e-Arqam schools stream & Shaukat Model schools stream ($p = .009 < \alpha = .05$) are found significant. Mean scores revealed that Students' Perceptions about psychosocial learning environment of mathematics classes on Equity dimension enrolled in Allied schools stream ($M = 4.29$, $S.D. = .86$) are better as compared to Students' Perceptions about psychosocial learning environment of mathematics classes on Equity dimension enrolled in County Public Stream ($M = 3.99$, $S.D. = .93$). Mean scores found that Students' Perceptions about psychosocial learning environment of mathematics classes on Equity dimension enrolled in Dar-e-Arqam schools stream ($M = 4.27$, $S.D. = .60$) are better than the Students' Perceptions about psychosocial learning environment of mathematics classes on Equity dimension enrolled in County Public schools stream ($M = 3.99$, $S.D. = .93$). Mean scores showed that Students' Perceptions about psychosocial learning environment of mathematics classes on Equity dimension enrolled in Dar-e-Arqam Schools stream ($M = 4.27$, $S.D. = .60$) better as comparative to Students' Perceptions about psychosocial learning environment of mathematics classes on Equity dimension enrolled in Shaukat Model schools stream ($M = 4.04$, $S.D. = .65$).

H_0 : There exists no significant difference of Students' Perceptions about Psychosocial Learning Environment in Mathematics Classes among different school streams.

One way analysis of variance was run to compare Students' perceptions among students of five different school streams.

Table 15

Comparison of Students' Perceptions about Psychosocial Learning Environment in Mathematics Classes across different school streams

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.148	4	1.037	3.932	.004**
Within Groups	263.993	1001	.264		
Total	268.141	1005			

* $p < .05$, ** $p < .01$

Table 15 revealed that $F(1001, 4) = 3.932$ was found significant because $p = .004 < \alpha .05$. It is therefore concluded that our null hypothesis "There exists no significant difference of students' perceptions about psychosocial learning environment in mathematics classes among different school streams" is rejected. Hence there exists significant difference of students' perceptions about psychosocial learning environment in mathematics classes among different school streams. Since F-value was found significant. Therefore, it was decided to run Post hoc test to explore difference between the groups.

Table 16

Multiple Comparisons of Students' Perceptions about Psychosocial Learning Environment

School Name		N		Mean		S.D.		M.D.	Sig.
1	2	1	2	1	2	1	2		
Allied	Dar-e-Arqam	111	292	4.21	4.08	0.52	0.59	0.13	.150
Allied	The Educators	111	314	4.21	4.10	0.52	0.49	0.10	.363
Allied	County Public	111	113	4.21	4.01	0.52	0.40	0.20*	.037*
Allied	Shaukat Model	111	176	4.21	3.98	0.52	0.46	0.22*	.003**
Dar-e-Arqam	The Educators	292	314	4.08	4.10	0.59	0.49	-0.28	.964
Dar-e-Arqam	County Public	292	113	4.08	4.01	0.59	0.40	0.06	.763
Dar-e-Arqam	Shaukat Model	292	176	4.081	3.98	0.59	0.46	0.09	.314
The Educators	County Public	314	113	4.10	4.01	0.49	0.40	-0.09	.478
The Educators	Shaukat Model	314	176	4.10	3.98	0.49	0.46	0.12	.090
County Public	Shaukat Model	113	176	4.01	3.98	0.40	0.46	0.03	.990

* $p < .05$, ** $p < .01$

Table 16 shows multiple comparisons of Students' Perceptions enrolled in different streams of private schools, about psychosocial learning environment. It revealed that comparisons of Students' Perceptions about psychosocial learning environment of mathematics classes who enrolled in Allied schools stream & County Public schools stream ($p = .037 < \alpha .05$) and Allied schools stream & Shaukat Model schools stream ($p = .003 < \alpha .05$) are found significant. Mean scores found that Students' Perceptions about psychosocial learning environment of mathematics classes who enrolled in Allied schools stream ($M = 4.20$, $S.D. = .52$) are better as

compared to Students' Perceptions about psychosocial learning environment of mathematics classes who enrolled in County Public schools stream (M=4.01, S.D. = .39). Mean scores indicated that Students' Perceptions about psychosocial learning environment of mathematics classes who enrolled in Allied schools stream (M=4.20, S.D. = .52) are better than the Students' Perceptions about psychosocial learning environment of mathematics classes who enrolled in & Shaukat Model Schools stream (M=3.98, S.D. = .46).

Conclusion

Male students' perceptions level enrolled in private schools about student cohesiveness, teacher support, task orientation, cooperation and equity is low as compared to female students. There is need to improve male students' perceptions level in mathematics classes. The male Students' perceptions on these dimensions may be enhanced through conducting workshops.

Recommendations

- Teachers may incorporate in student cohesiveness, teachers support, cooperation, and equity in their classroom teaching more to improve male students' perceptions about these dimensions.
- Teachers teaching to the mathematics classes during the session may aware the significance of psychosocial learning environment.
- This study was conducted to explore mathematics classroom psychosocial learning environment at secondary level. It may be conduct to explore the psychosocial learning environment in other subjects across different levels.

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