Impact of ILE on Learners' Motivation while Learning Mathematics at Secondary School Level

Saima Afzal
PhD Scholar, Education Department, National University of Modern Languages, Islamabad.
Email: saimakashif15@yahoo.com

Qurat-ul-Ain Hina
Assistant Professor, Education Department, National University of Modern Languages.
Email: quahina@numl.edu.pk

Abstract

This paper reports a quantitative study related to Interactive Learning Environment and motivation of secondary school mathematics students. The aim of this research was to measure the impact of Interactive Learning Environment on Student's motivation. The respondents were chosen from the public secondary schools situated in Islamabad (Federal Territory), working under control of Federal Directorate of school education. There were 101 public schools out of which 56 were for girls and 45 were for boys. This research study was delimited to pupil of grade 10th only. Total 12810 students were studying in these schools in grade tenth, out of which about 2 percent were selected randomly. Thus the sample of the study was 260 students. A questionnaire "What Is Happening in the Class (WIHIC)"was adapted and utilized to study the prevailing practices regarding to learning environment of the classroom. To determine the students' level of motivation "Motivation Assessment Scale (MAS)" was used. The instruments were validated by professionals from the field of education and educational psychology. The reliability of the instrument was determined by using Cronbach Alpha which was found 0.89 for WIHIC questionnaire and 0.82 for MAS. Student's cohesiveness was found most prevailing practice related to classroom learning environment in maths classrooms and maximum number of the students were at medium level of motivation. Findings also reveal that Interactive learning environment motivate the learners utmost. The major recommendation of the study was that learning environment may be interactive and directed in such a way that it should motivate the learners to learn and perform better.

Introduction
Mathematics is one of the compulsory subject in the curriculum of secondary level education.

Mathematics has always been considered an important subject. In this era of science and technology mathematics knowledge and skills are required in almost all spheres of life. Mathematics education has become essential for everyone whether or not they are to pursue it in higher studies. Mathematics nurtures and hones the abilities of reasoning, creativity, and spatial or abstract thinking. There is difference between mathematics and other social science because as claimed by Sharan (2006), mathematics is the learning of abstracts that deals with abstract components. All those elements are not explained in tangible manner. Majority of the students consider Mathematics difficult and boring subject.Hence effective learning of mathematics requires motivated students. Motivation is the derived from the word motive which has meanings like wants, needs, desires or forces within an person. It's a driving force that stimulates a person to take an action. Most difficult and problematic facet of mathematics teaching is to motivate learners to learn mathematical concepts. Motivation has far reaching effects on learning as it increases learner's energy level, helps in persistently pursuing a task to achieve a specific goal, applying variety of learning techniques.

Students, who lack motivation may find it difficult to retain information, and may not participate in learning. They may even become disruptive.There could be a number of reasons for lack of motivation among learners.The students may lack interest in the mathematics because they find teaching method un-engaging or they may be distracted by some other external pressures. Sometimes student feels demotivated because he/she found difficulty while learning mathematics and has a special need of attention.

Motivation affects an individual in a variety of ways. It directs and focuses our attention towards the task at hand, minimizes distractions and helps to resist distractions, enables us to maintain interest for longer time, and to complete the task in shorter period of time. Motivation affects the ability to retain and store the information; it also affects our perception of how easy or difficult the task is. Most importantly it urges an individual to take an action. Without motivation completing even taking up a task is difficult or even impossible. It can be said that motivation affects an individual's preferences, behavior, and achievements.

According to human development professionals, motivation is of two types that is intrinsic motivation and extrinsic motivation. When an individual is intrinsically motivated the stimuli to take an action come from within and not for any reward or appreciation from others. Motivation is intrinsic when an individual wanted to perform some duty or task because its results are important as they fulfill a need or wanted or all these have a harmony with their belief or value system. When an individual is extrinsically motivated he or she wanted to perform a task that is controlled by some external facet because the stimuli come from outside.

Motivation is a psychological phenomenon which can be enhanced or decreased as it is based on a number of different factors. Garrison (2010), has identified a number of factors which affect learner's motivation. These include: classroom environment, curriculum structure, students' attitude, psychological and health related factors, leadership style, skills and abilities of teachers, assessment strategies, parents' role, and social circle.

Learning environment is a key factor affecting learning. It is often said that classroom

environment during group work plays a key role in affective learning. Classroom environment is interplay of a number of factors including physical, social, cultural, and psychological factors. All these environmental factors deeply affect the learning of the student's. If the classroom environment is not conducive to learning it would be difficult for students to remain interested and engrossed and will hinder acquisition of knowledge and skills.

The learning environment can refer to an educational approach, cultural context, or physical setting in which teaching and learning occur. The term is commonly used as a more definitive alternative to "classroom",but it typically refers to the context of educational philosophy or knowledge experienced by the student and may also encompass a variety of learning cultures its presiding ethos and characteristics, how individuals interact, governing structures, and philosophy. In a societal sense, learning environment may refer to the culture of the population it serves and of their location. Learning environments are highly diverse in use, learning styles, organization, and educational institution. The culture and context of a place or organization includes such factors as a way of thinking, behaving, or working, also known as organizational culture. For a learning environment such as an educational institution, it also includes such factors as operational characteristics of the instructors, instructional group, or institution; the philosophy or knowledge experienced by the student and may also encompass a variety of learning cultures its presiding ethos and characteristics, how individuals interact, governing structures, and philosophy.

Research Objectives

Objectives of this research study were:
1.   To find out the existing practices regarding Interactive learning environment at secondary school level.
2.   To gauge the motivation level of students of secondary classes while mathematics learning.
3.   To assess the impact of Interactive Learning Environment on motivation of learners while learning mathematics of secondary classes.

Literature Review

The importance of Mathematics cannot be denied in this age of science and technology. The mathematics knowledge proved to be an essential vehicle to train the minds of the learners to think logically, objectively and reasonably in solving day to day problems. According to Sharan (2006) subject of Mathematics is a different from all other subjects like social sciences. It is the study of abstract systems that deals intellectual or abstract elements. And all these components are not discussed in a concreter manner. Utsumi and Mendes, (2000) said that the learning and teaching of Mathematics demands positive teachers' behavior and perfect knowledge of subject matter and from students it require deep thinking and proper learning attitude in terms of learning styles. Ofenly it is said that better and positive learning environment not only helps during group work but also improve the learning by strengthening the concepts of learners. The fashion in which students learn mathematics influences how well they understand its concepts, principles, and practices. Many researchers have argued that to promote learning with understanding, mathematics educators must

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consider not only the tasks, problem-solving situations, and tools used to represent mathematical ideas but also motivate the learners. Arend (2007) said that from the distance all classrooms looks same or similar but those are different in process and procedures. Steve and Richard (2013) said that students make judgements about the class in which they are going to study while entering in the classrooms. They used to watch how the infrastructure is managed in classroom. The learners also notice that which type of wall hangings are used in the class. It is also observed by the students how their teacher communicate with them and how he allows them to communicate with each other and their teacher also. In addition to all these it is also observed by the learners that what type of activities and learning experiences are being offered in the classroom . The educational environment has been increasingly acknowledged as vital for high-quality mathematical education (Roff 2005; WFME 2003, 2007; Genn 2001). Important components of the educational environment include atmosphere, number of (formal) learning opportunities and available facilities. The value of the educational environment for the quality of education is underpinned by research outcomes, showing that students' perceptions of the educational environment quality influence their involvement, satisfaction and success Karagiannopoulou and Christodoulides 2005; Müller and Louw 2004).For instance, Prenzel Drechsel & Kramer(2001) declared six encouraging conditions for learning of learners namely relevance of content or subject matter, quality and style of imparting instructions, teachers interests, social affiliation, competence support and support of autonomy. Research results of Kudari (2016) has favored the significance of these situations in connection with the intrinsic motivation of learners. Teaching has been described by Scheerens (2007) as a comprehensive set of conditions which should smooth the progress of teaching and enhance the learning of learners. It is commonly accepted fact child more time is spent in classrooms of the schools. It is only the Classroom is where the students learn different skills which are considered essential and appropriate for them to attain success in the society. Kim, Fisher and Fraser (2000) reported that it in only the classroom where students expand an understanding of their place in the world and the contributions which they have to offer it. It is the only place from where students develop their future as well as knowledge and skills required to achieve their settled goals.

According to Opdenakker & Minnaert (2011) stated the classroom environment can be arranged and organized in such a way that it brings innovation and creativity and does not uphold a negative learning environment. There are various factors which greatly affect the learning environment. Physical elements of the classroom like arrangement of desk , wall art, or resources also make classroom environment interactive. Skinner, Kindermann & Furrer(2009) explained that there are immaterial elements such as the energy for the classroom, the rules and the sound within the classroom. Worswick (2004) described one of the most important area which make a noticeable influence on students success is the physical environment of the classroom. It can be association of learners with each other, structure of classroom, arrangement of resources, color scheme of the classroom etc. All these elements can play a very important role in determining whether the classroom is conducive for learning. Each of them may not be influential factor individually. Though, together they can effort to strengthen a student's ability to learn and prosper. Most of the theories about interactive learning environment are supported by the constructivism. The constructivists

learning theory claims that active learning environments are better for learning(Charles, 2005). It is because the constructivism suggests that world has no definite meaning which may be tried to understand, rather there are multiple ways to structure the world and infer the meanings of events. According to Cummings (2001) we all have different views of how the world works. The study by Typhoon International Corp (2004) attempted to find out the relation between learning environments of mathematics classrooms and the attitude of students towards the subject in Australia using the "What is happening in the class (WIHIC)" questionnaire. It was administered to 490 students and it was found that the attitude of learners were related to the environment scales. A positive association was found between students attitude to class, teacher support, learners involvement, task orientation and equity. In an attempt to discover the potentials of cross-cultural researches. In an attempt to explore the potential of cross-cultural studies, Fraser and Aldridge (2000) observed the effectiveness of class room environment by using English and Chinese version of the questionnaire "What Is Happening In The Class (WIHIC)" and found strong relationship between classroom learning environment, motivation and self-efficacy of learners.

For the achievement of goals, fulfillment of needs and dispositions human being acquire the sufficient motivation. Especially for students of mathematics motivation for learning mathematics is necessary. It is only the motivation which can stimulate the students to complete their assignments in time and successfully for sake of achievement of goals or a degree of qualification required for their professions (Mohamadi, 2006). Motivation is the only factor which can enhance learning of mathematics and interactive learning environment can motivate the learners for learning and make better achievements. Many scholars and practitioners, Grammatik Opoulos et al. 2013) regard motivation as the most important factor in influencing individual and organizational success.

Conceptual Framework

In this research there were two variables the "interactive learning environment" and "student's motivation". Interactive learning Environment was treated as independent variable while student's motivation was taken as dependent variable.
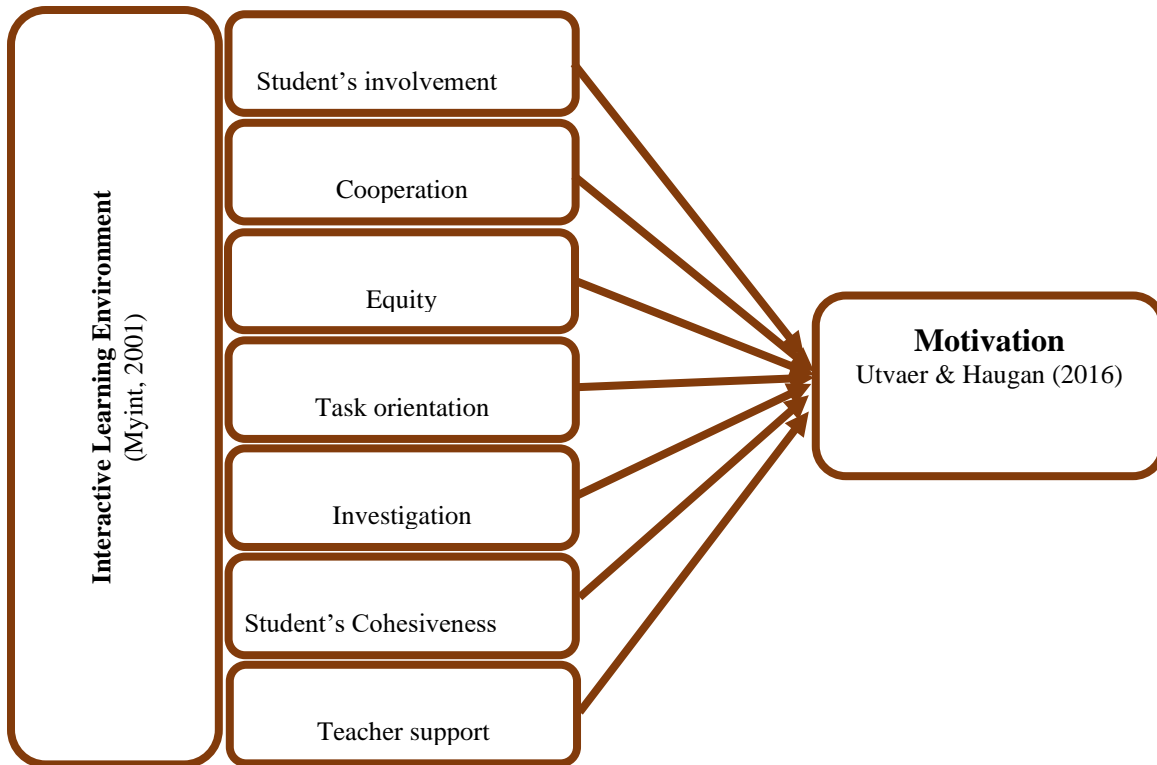
Research Hypothesis
Following hypothesis was developed to accomplish the study:
H_1:   There is statistically positive effect of Interactive Learning Environment on student's motivation at secondary level.

Methodology
Following methodology was adopted to accomplish this research.

Research Design
The current study is descriptive in nature based on quantitative data. To carry out this research survey method was used. The research design was based on collection of information about prevailing practices regarding to interactive class room environment and its analysis to assess the effect of interactive learning environment developing student's motivation in mathematics at secondary school level under the umbrella of Federal Directorate of Education Islamabad.

Population
Population of this research study was comprised of 12810 students of class 10th studying in public secondary school of Islamabad working under Federal Directorate of Education. According to available record in IT Section of FDE data base.among those 12810 there were

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5231 boys and 7579 girls studying in public secondary schools (2018-2019). A detailed list of school with students' strength was obtained from IT Section of Federal Directorate of Education (FDE) Islamabad. According to the information obtained from IT Section of Federal Directorate of education, there are 101 public secondary schools from which 45 were boys schools and 56 were of girls secondary schools working under Federal Directorate of Education Islamabad. All students studying in class 10th of the public secondary schools of FDE comprising total number of 12810 were treated as the population to carry out this research.

Table 1
Population for the Study

Sr. No.	Category	No of Schools	No. of Students
1.	Boys	45	5231
2.	Girls	56	7579
3.	**Total**	**101**	**12810**

The above mentioned population was divided into two major divisions' i.e boys public secondary schools and girls public secondary schools.

Sampling
The number of students in both categories were not equal. There were 5231 boys studying in 45 boys secondary schools of FDE, whereas 7579 girls were studying in 56 secondary schools of the FDE. Thus number of girl students were greater than boys'. So, to give appropriate share to each division. 2% of both categories were selected as sample. Thus 260 students from which 110 were boys and 150 were girls, selected as sample. Thus initially about 260 questionnaires were distributed among the sample respondents. Out of 260 questionnaires 243 were returned. Further 25 questionnaires were rejected due to incomplete data. Only 218 questionnaires were served to provide data.

Instrument
To explore the practices regarding to Interactive Learning Environment a questionnaire was adapted which was used by Myint (2001).

Table 2
List of Items in What Is Happening In the Class Questionnaire

What Is Happening In the Class Questionnaire	Sr. No.	Subsections	Items
	1.	Investigation	I1, I2, I3, I4, I5, I6, I7, I8
	2.	Equity	E1, E2, E3, E4, E5, E6, E7, E8
	3.	Student's Involvement	SI1, SI2, SI3, SI4, SI5, SI6, SI7, SI8
	4.	Student's	SC1, SC2, SC3, SC4,

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		Cohesiveness	SC5, SC6, SC7, SC8
	5.	Task orientation	TO1,TO2, TO3, TO4, TO5, TO6, TO7, TO8
	6.	Teacher Support	TS1, TS2, TS3, TS4, TS5, TS6, TS7, TS8
	7.	Cooperation	C1, C2, C3, C4, C5, C6, C7, C8
Total No. of Items			**56**

Motivation Assessment Scale (MAS) used by Utvaer & Haugan (2016) was adapted and used to determine the motivation level of learners. It was consisted of three subscales i.e, (i.) intrinsic motivation which is further subdivided into three categories (i.e., knowledge, accomplishment, and stimulation), (ii) extrinsic motivation which is also subdivided into three categories (i.e., identified, introjected, and external), and amotivation.

Table 3
Detail of Items in Motivation Assessment Scale

Motivation Assessment Scale	**Sections**	**Subsections**	**Items**
	Intrinsic Motivation	Knowledge	IMK1, IMK2, IMK3, IMK4, IMK5
		Accomplishment	IMA1, IMA2, IMA3, IMA4, IMA5
		Stimulation	IMS1,IMS2, IMS3, IMS4
	Extrinsic Motivation	Introjected Regulation	EMI1, EMI2, EMI3, EMI4
		Extrinsic Regulation	EMER1, EMER2, EMER3, EMER4
		Identified Regulation	EMIR1, EMIR2, EMIR3, EMIR4
	Amotivation	-----	A1, A2, A3, A4, A5
Total No. of Items			**31**

Pilot Study
After adaption both tools were validated by the experts. The reliability of the tools was tested through a pilot trial. The data obtained from pilot test was used to assess the correlation between the individual items and the sub sections of the questionnaires. In order to ensure the reasonable assessment responses from 40 respondents were subjected for analysis.

Table 4
Statistical Reliability Analysis (n=50)

Tool		Reliability	Items
What Is Happening In the Class		0.87	56
	Investigation	0.83	8
	Equity	0.89	8
	Involvement	0.91	8
	Cohesiveness	0.86	8
	Task orientation	0.84	8
	Teacher Support	0.93	8
	Cooperation	0.96	8
Motivation Assessment Scale		0.81	31
	Knowledge	0.79	5
	Accomplishment	0.95	5
	Stimulation	0.89	4
	Introjected Regulation	0.91	4
	Extrinsic Regulation	0.80	4
	Identified Regulation	0.81	4
	Amotivation	0.85	5

This table indicates the results for reliability analysis for both tools. According to the results shown in table both tools were reliable. The "What Is Happening In the Class (WIHIC)" was found reliable. At 0.87 (Cronbach's Alpha) and Motivation Assessment Scale (MAS) was found reliable at 0.81 (Cronbach's Alpha).

Statistical Analysis

Prevailing Practices Related to Classroom Learning Environment
Objective No1: To explore the major prevailing practices related to Interactive learning environment at Secondary schools in mathematics.

Table 5
Major Prevailing regarding Interactive Learning Environment at Secondary Schools

Variables	N	Minimum	Maximum	Mean	Mean of the Mean
Student's Cohesiveness	218	13.00	40.00	38.66	4.51

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Equity	218	17.00	38.00	37.64	3.55
Involvement	218	17.00	38.00	32.64	4.45
Investigation	218	10.00	40.00	23.77	2.11
Task orientation	218	16.00	39.00	29.89	3.22
Teacher Support	218	08.00	37.00	33.08	4.63
Cooperation	218	12.00	39.00	35.18	3.54
Valid N (listwise)	218				

Table 5 indicated the major prevailing practices related to interactive learning environment.

Mean of Interactive Classroom Learning Environment related to Student's Cohesiveness was 38.66 whereas mean of mean was 4.51 which declared Student's Cohesiveness as the most prevailing practice related to Interactive Classroom Learning Environment. Interactive classroom learning environment related to Investigation scored mean of 23.77 and mean of mean score was 2.11 which declared Investigation as the least prevailing Interactive Classroom Learning Environment.

Level of Motivation
Objective No. 2:   To explore the level of motivation of the Secondary school students.

Table 6
 Level of Motivation of secondary school students

Variable	Score	Levels of Self Esteem	N	Percentage
Self Esteem	20-49	Low	09	4.1%
	50-79	Medium	122	56 %
	80-109	High	87	39.9%

The table 6 indicated the level of motivation of the secondary school students. For this purpose score was divide into three levels ranging from 20-49 for low, 50-79 for medium and 80-109 for high level of motivation. The results thus obtained from the above table revealed that only 4.1 % students had low level of motivation, 56 % had medium level of motivation and 39.9 % had high level of motivation. Thus it is evident from the above table that majority of the student had medium level of motivation.

Objective No 3: To measure the effect of Interactive Learning Environment on student's motivation at secondary school level while learning mathematics.

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Table 7
 Effect of Interactive Learning Environment on student's motivation at secondary school level.
(N=1350)

Independent Variable	Dependant Variable	R²	β (Coefficient)	T	Sig
Interactive Classroom Learning Environment	Motivation	.76	.261	14.94	.000

*P<0.05
a. Dependent Variable: Motivation
b. Independent Variable: Interactive classroom learning environment

Table   displayed that R^2 Value was .76. Which represents that the independent variable (Interactive classroom learning environment) described 76% variation in students motivation level and the rest was due to some other factor. While the coefficient (β= .261) shows that this effect was positive and statistically significant at 0.05 level of significance. Thus the hypothesis 'there is no statistically significant effect of Interactive learning environment on student motivation of the secondary school students' is failed to be accepted.

Table 8
 Effect of Student's involvement on student's motivation at secondary school level while
learning mathematics (N=1350)

Independent Variable	Dependant Variable	R ²	β(Coefficient)	T	Sig
Student's involvement	Motivation	. 66	.35	13.1	.010

*P<0.05
a. Dependent Variable: Motivation
b. Independent Variable: Student's involvement

Table 7 displayed that R^2 Value was .66. That represents that the independent variable (student's involvement) described 66 % variation in students motivation and the rest was due to some other factor. While the coefficient (β= .35) shows that this effect was statistically significant at 0.05 level of significance.
Thus the hypothesis 'there is no statistically significant effect of Student's involvement related to interactive learning environment on motivation of the secondary school students' is failed to be accepted.
Table 9

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Effect of Student's Cohesiveness among students on student's motivation at secondary level (N=1350)

Independent Variable	Dependant Variable	R²	β(Coefficient)	T	Sig
Student's Cohesiveness	Student's motivation	.67	.39	12.41	.020

*P<0.05

a. Dependent Variable: Student's motivation
b. Independent Variable: Student's Cohesiveness

Table 9 displayed that R^2 Value was 0.67. It represents that the independent variable (Student's Cohesiveness) described 67 % variation in student's motivation and the rest was due to some other factor. While the coefficient (β= .39) shows that this effect was statistically significant at 0.05 level of significance.

Thus the hypothesis 'there is no statistically significant effect of interactive learning environment related to Student's Cohesiveness on student's motivation is failed to be accepted.

Table 10

Effect of task orientation on student's motivation at secondary level while learning mathematics (N=1350)

Independent Variable	Dependant Variable	R²	β(Coefficient)	T	Sig
Task orientation	Motivation	.61	.344	13.71	.010

*P<0.05

a. Dependent Variable: Motivation
b. Independent Variable: Task orientation

Table 10 displayed that R^2 Value was .61. Which represents that the independent variable (Task orientation) described 61 % variation in students motivation and the rest was due to some other factor. While the coefficient (β= .344) shows that this effect was statistically significant at 0.05 level of significance. Thus the hypothesis 'there is no statistically significant effect of interactive learning environment related to task orientation on motivation of the secondary school students' is failed to be accepted.

Table 11

Effect of Investigation on student's motivation at secondary level while learning mathematics (N=1350)

Independent Variable	Dependant Variable	R²	β(Coefficient)	T	Sig
Investigation	Motivation	.54	.34	10.97	.010

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*P<0.05
a. Dependent Variable: Motivation
b. Independent Variable: Investigation

Table 11 displayed that R^2 Value was .54. That represents that the independent variable (Investigation) described 54 % variation in students motivation and the rest was due some other factor. While the coefficient (β= .34) shows that this effect was statistically significant at 0.05 level of significance. Thus the hypothesis 'there is no statistically significant effect of interactive learning environment related to investigation on motivation of the secondary school students' is failed to be accepted.

Table 12
Effect of equity on student's motivation at secondary level while learning mathematics (N=1350)

Independent Variable	Dependant Variable	R^2	β(Coefficient)	T	Sig
Equity	Student's motivation	.71	.361	12.41	.011

*P<0.05
a. Dependent Variable: Student's motivation
b. Independent Variable: Equity

Table 12 displayed that R^2 Value was .71. It represents that the independent variable (equity) described 71 % variation in students student's motivation and the rest was due some other factor. While the coefficient (β= .361) shows that this effect was statistically significant at 0.05 level of significance. Thus the hypothesis 'there is no statistically significant effect of interactive learning environment related on student's motivation of the secondary school students' is failed to be accepted.

Table 13
Effect of teacher support on student's motivation at secondary level while learning mathematics (N=1350)

Independent Variable	Dependant Variable	R^2	β(Coefficient)	T	Sig
Teacher support	Student's motivation	.73	.311	11.91	.010

*P<0.05
a. Dependent Variable: Student's motivation
b. Independent Variable: Teacher support

Table 13 displayed that R^2 Value was .73. It represents that the independent variable (teacher support) described 73 % variation in students student's motivation and the rest was due

some other factor. While the coefficient (β= .311) shows that this effect was statistically significant at 0.05 level of significance. Thus the hypothesis 'there is no statistically significant effect of interactive learning environment related to teacher support on student's motivation of the secondary school students' is failed to be accepted.

Table 14

Effect of cooperation among students on student's motivation at secondary level while learning mathematics (N=1350)

Independent Variable	Dependant Variable	R^2	β(Coefficient)	T	Sig
cooperation among students	Student's motivation	.53	.371	12.11	.000

*P<0.05

a. Dependent Variable: Student's motivation

b. Independent Variable: Cooperation among students

Table 14 displayed that R^2 Value was 0.53. It represents that the independent variable (cooperation among students) described 53 % variation in student's motivation and the rest was due some other factor. While the coefficient (β= .371) shows that this effect was statistically significant at 0.05 level of significance. Thus the hypothesis 'there is no statistically significant effect of interactive learning environment related to cooperation among students on motivation of the secondary school students' is failed to be accepted.

Discussion

The findings of present study are in congruence with the findings of a study on classroom environment and science students'   motivation, conducted by Sunitadevi and Aldridge (2013). In their study they found that students' cohesiveness had a significant relationship with students' motivation. Similarly Urdan and Shoenfelder (2006) found that supportive peer relationship is an important factor to enhance motivation. They suggested that opportunities for interaction between stunts should be created to enhance their motivation to learn.

Equity, task orientation and cooperation are less prevalent than cohesiveness but comparatively more frequent practices than the rest of the practices of interactive learning environment. However they have a positive and significant relationship with motivation. Mobeen-ul-Islam (2012) finding that cooperation and equity was positively correlated with students' attitude towards Mathematics support the results of the present study.

In the past studies task orientation was found to have significant influence on motivation of students (Sunitadevi and Aldridge, 2013). Middleton and Midgly(2002) emphasized that teachers should encourage and require their students to complete their assignments to enhance their motivation.

Present study shows that investigation emerged as the least prevailing practice in mathematics classroom. However it has a positive relationship with motivation. Findings of this research are in line with past research which also showed a significant and positive relationship between motivation and investigation. Past research on science learning motivation and investigation has revealed that students who are more frequently engaged in

inquiry and problem solving activities are more likely to have a high motivation to learn science (Sunitadevi and Eldridge, 2013). On the basis of previous research and findings of this research it is suggested that investigation and inquiry as learning methods may be used more often to enhance students' motivation.

A comparatively very low frequency of practice related to teacher support and student involvement and yet their significant relationship with motivation suggest that enhancing teacher support can improve students' motivation. Akkey (2006) study suggests that teacher's support gives student a feeling of control and enhance theirconfidence which helps them to change their attitude. Teacher's support encourages involvement in mathematics learning (MobeenulIslam ,2012).

Previous research has also shown that these factors have a significant impact on task value and learning goal orientation. These findings also suggest that teacher plays a significant role in enhancing motivation (Turner et al. 2002). Sunitadevi and Eldridg (2013) on the basis of findings of their study suggest that teacher's support can enhance goal orientation and task value. A significant relationship between intrinsic motivation and teacher support shown in the present study strengthens the view that teacher plays a pivotal role in enhancing students' motivation. The classroom environment that encourage students to express their opinion, ask questions, share ideas enhance student involvement enhance students involvement in learning. Previous and present research have shown a significant relationship between student involvement and motivation. The present research has also shown a significant relationship between intrinsic motivation and student involvement, this finding is in congruence with previous research which revealed that students' involvement effects their goal orientation and task value.

In the light of findings of this study it is concluded that interactive learning environment improves motivation.

Conclusions
Following conclusion were drawn in the light if findings:
1. Student's cohesiveness was found most prevailing practice related to classroom learning environment in maths classrooms and maximum number of the students were at medium level of motivation.
2. Findings also revealed that Interactive learning environment motivates the learners utmost.
3. It was also concluded that from sub-variables related to interactive learning environment "teacher support" can bring maximum level of motivation among students.

Recommendations
The following were the recommendations drawn in the light of findings and conclusions.
1. School authorities and teachers should try to create an interactive learning environment because it was helpful for learners motivation.
2. It is found that teachers support can bring maximum level of motivation therefore teachers should provide supportive environment for learning mathematics.
3. Teacher education departments should train the teachers in such a way that to enable

them to create interactive learning environment.

4. This research was conducted only in context of mathematics learning. Such other researches may be conducted in other fields.

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