

Impact of Classroom Environment on Student Motivation, Engagement and Academic Performance

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ABSTRACT

In this research, an attempt has been made to understand the influence of classroom environment on the motivation, engagement, and performance of the students. In order to achieve this objective, the researchers have used the quantitative method of correlation. The data has been collected from 300 respondents by adopting the stratified random sampling technique among the departments of Social Sciences and Science at the University of Sargodha. Structured questionnaire and CGPA of the participants were used as sources of data. The results indicated that there was a significant positive correlation between classroom environment and student motivation ($r = .960$), engagement ($r = .997$), and academic performance ($r = .956$). Regression analysis also showed that classroom environment was a good predictor of the three variables.

Keywords: Classroom Environment, Student Motivation, Student Engagement, Academic Performance, Classroom Climate, Teacher–Student Interaction.

INTRODUCTION

Classroom learning environment is viewed by many as one of the most essential elements of quality education, contributing significantly to the daily learning experience of students. This learning environment refers to the direct environment where learning takes place, including both physical and psychological factors. The physical variables include classroom design, lighting, arrangement of seats, ventilation, and space availability, while social and educational variables include interactions between teachers and learners, classroom management strategies, emotional environment, and instructional strategies. All these factors are what helps to ensure safety, support, motivation, and appreciation of education by the learners. (Qureshi et al., 2021).

The level of engagement and motivation of the learners is also associated with the classroom setting. Motivation may be defined as the internal drive that pushes learners to initiate, sustain, and complete tasks despite encountering problems. In a well-organized classroom setting, the students would be motivated to see their efforts and realize that their mistakes are not barriers but learning experiences. It will result in behavior engagement (involvement and adherence to rules), emotion engagement (interest and enthusiasm), and cognition engagement (thinking deeply and strategically) (Brink, Loomans, Mobach, & Kort, 2020).

Academic performance doesn't only depend on students' cognitive skills but also depends on some other variables, one of which is the literacy resources. Effective classroom management, learning resources, and relations between the teacher and students play pivotal roles in fostering better study and learning attitudes, therefore promoting academic success(Graduate School, 2025). Classroom management affects students' academic performance through aspects such as study habits, engagement in class assignments, study participation, and engagement in academic conditioning.(Mahnaz, Mehmood, & Umar, 2022).

Problem Statement

Many schools are facing challenges where students show low motivation and participation in learning. For instance, the challenges could be evident in various forms of poor participation levels, low interest in lessons, poor attendance regarding completing school activities, and low levels of commitment towards academic progress. One of the reasons why these issues are of concern is the classroom learning environment. There may be instances where the classroom does not promote a suitable condition that fosters an active-learning state of mind, emotional well-being, or a suitable teacher-student interaction outcome. Physical limitations and concerns related to social-instructional issues can cause a classroom to become a “non-connecting” classroom where the student is not connected to the learning process or atmosphere itself (Jafari & Asgari, 2020).

Objectives of the Study

The present study has the following specific objective:

1. Examine the relationship between classroom environment and students' motivation.
2. Investigate the relationship between classroom environment and students engagement.
3. Analyze the effect of classroom environment on academic performance.

Research Question

1. How does classroom environment influence students' motivation?
2. What is the relationship between classroom environment and students engagement?
3. To what extent does classroom environment affect academic performance?

LITERATURE REVIEW

The classroom is regarded as a vital factor in shaping scholars' literacy skills and educational achievements. Classroom terrain encompasses the physical, social, emotional, and literacy conditions in which literacy and tutoring occur. These conditions cover the physical conditions of the classroom, the arrangement of classroom learning resources teacher- pupil relations, connections among scholars, method of of literacy, and the general climate of the learning environment. Colorful studies concerning educational psychology and literacy styles emphasize that the literacy terrain significantly conditions the learning achievements and motivation of students (Fraser, 2012; Wang & Degol, 2016).

Motivation and engagement are two important features of effective learning. While motivation determines students disposition to share in learning processes, engagement describes students' behavioral, emotional, and cognitive involvement in the conditioning going on at the academy. According to the exploration findings, scholars who perceived their literacy terrain as socially easing, structurally competent, and emotionally positive showed advanced situations of motivation and engagement, which further improved their learning performance.Students' Motivation has also been related to learners' learning attitudes and beliefs, which, as discussed, are not purely related to content and coverage but also encompass the

perceptions and attitudes students develop regarding the place and circumstances where, and the conditions in which, the learning takes place. Physical Classroom Environment: This term refers to the physical, concrete circumstances that exist. These refer to the seating arrangements, room dimensions, lighting, ventilation, temperature, hygiene, noise level, and materials, equipment, and technology used. (Nwokedi, 2023).

A classroom environment shapes motivation not for students alone, not alone for teachers, but both, and motivation is co-constructed through joint routines, interaction patterns, and through the classroom climate developing over time". That is, when teachers feel supported, respected, and effective in managing classroom processes, they are more likely to show enthusiasm, give worthwhile guidance, and put in effort in engaging students-all aspects that students perceive as encouragement and academic support. His perspectives are also in consonance with the overall arguments from the broader field of motivational climate studies, which treat the teacher as a determining factor in terms of learning norms, tasks, and the degree of learning participation fostered within the class. In the same light, Zajda (2018) emphasized the fact that teachers' strategies, such as fostering autonomy support, acknowledging effort, giving constructive feedback, and promoting learning on students' own, are critical for the sustenance of students' intrinsic motivations etc. (Wang & Degol, 2016).

The classroom environment also affects how motivated students are to learn. This is influenced by things, such as where students sit how bright the room is, how much space there is and how the teacher and students interact with each other. Some researchers, like Nwokedi in 2023 Orun in 2024 Firmin and Sanders in 2024 and Wang and others in 2020 have found that when the classroom is comfortable and supportive students are more motivated to learn. When students feel good about themselves and their abilities they are more likely to participate in class.. When the classroom is crowded, noisy or uncomfortable students are less motivated. Student motivation and engagement are closely related. They go together to affect how well students do in school. (Firmin & Sandiarsa, 2024).

METHODS AND PROCEDURE

The research involved the use of quantitative research methodology with correlational design, as there was no need for manipulation of variables, but rather the determination of their relationship among each other, i.e., classroom environment, student motivation, student engagement, and academic achievement. The population included undergraduate students of different faculties and departments of the University of Sargodha. Stratified random sampling technique was applied to select the samples that would represent all departments and semesters. In total, 300 students took part in the research. The data collection tools comprised a well-designed questionnaire and the grades of the participants in their subjects. The content of the questionnaire included demographic details, classroom environment, student motivation, and student engagement. Validity of the research tool was ensured through expert review.

Reliability

Table1. Reliability Statistics

Variables	No of Items	No of respondents	Cronbach's Alpha
Classroom Learning Environment	14	40	0.824
Student Motivation	14	40	0.817
Student Engagement	14	40	0.854

The Reliability analysis of the pilot test carried out on 40 respondents regarding three research variables; Learning Environment, Student Motivation, and Student Engagement. Classroom Learning Environment scale with 14 items yielded Cronbach's Alpha value of 0.824 which shows that the scale is reliable. Student Motivation scale which also contains 14 items gave a Cronbach's Alpha value of 0.817 which indicates good reliability. This shows that the items on this scale are reliable and consistent. On the other hand, the Student Engagement scale, having 14 items yielded a Cronbach's Alpha value of 0.854 which indicated very good reliability.

RESULTS AND FINDINGS

Table 2. Descriptive statistics for Classroom Environment, Student Involvement, Motivation, and Engagement

Variable	Mean Range	Overall Interpretation	Highest Rated Statement	Mean	SD
Classroom Environment	3.90 – 3.94	Students showed positive perceptions regarding classroom conditions, facilities, and learning atmosphere.	Wall displays, charts, and visuals make the classroom more engaging	3.94	1.041
Student Involvement	3.91 – 3.93	Students actively participated in discussions, collaboration, and classroom activities.	Students often share ideas during lessons	3.93	1.042
Intrinsic Motivation	3.92 – 3.94	Students demonstrated strong internal interest and enjoyment in learning.	I enjoy solving complex questions that require deep thinking	3.94	1.037
Extrinsic Motivation	3.90 – 3.94	External rewards, praise, and competition positively influenced students' motivation.	I aim for high grades to gain recognition or rewards	3.94	1.027

Behavioral Engagement	3.91 – 3.94	Students remained attentive, participate, and responsible in classroom activities.	I participate actively in group discussions	3.94	1.037
Emotional Engagement	3.91 – 4.80	Students showed strong emotional attachment and positive feelings toward classroom learning.	I enjoy working on classroom projects	4.80	0.403

The descriptive statistics, it can be seen that students have positive perceptions of classroom environment, involvement, motivation, and engagement. The average score for classroom environment was within the range of 3.90 to 3.94, depicting satisfaction with classroom facilities, with visual aid receiving the highest score ($M = 3.94$, $SD = 1.041$). Additionally, the students were very much involved ($M = 3.91$ -3.93), particularly in idea sharing ($M = 3.93$, $SD = 1.042$).

The students had high intrinsic motivation ($M = 3.92$ -3.94), where their motivation was based on interest and challenge. Additionally, extrinsic motivation was motivated by reward system and grades ($M = 3.94$, $SD = 1.027$). There was consistent behavioral engagement among the students ($M = 3.91$ -3.94), showing engagement characterized by active involvement and responsibility. In addition, emotional engagement was also high, particularly enjoyment in classroom projects ($M = 4.80$, $SD = 0.403$).

Independent sample t-test

t-test with 0.05 as the level of significance. to compare means by gender (male and female).

Table 3. Gender Differences in Classroom Environment, Student Motivation, and Student Engagement

Variable	Gender	N	Mean	S.D	S.E	T value	P value
Classroom Environment	Male	102	46.667	8.9096	2.3004	-1.901	0.065
	Female	198	48.400	11.9512	2.3902		
Student Motivation	Male	102	44.000	10.253	2.6475	-0.486	0.630
	Female	198	49.920	9.0871	1.8174		
Student Engagement	Male	102	54.266	8.0929	2.0895	0.403	0.689
	Female	198	53.120	9.0568	1.81137		

The t-test for independent samples was used to determine gender differences in the classroom environment, student motivation, and student engagement of students. In relation to the classroom environment, the mean value of male students was 46.667, and the standard deviation was 8.9096, while the mean value of female students was 48.400, and the standard deviation was 11.9512; there is no statistical significance in $t = -1.901$ and $p = 0.065$. The motivational levels of the students, there exists no significant difference between males ($M = 44.000$, $SD = 10.253$) and females ($M = 49.920$, $SD = 9.0871$), $t = -0.486$, $p = 0.630$, implying

that there is no difference in the level of motivation of these two groups regardless of their gender in this population.

Furthermore, in terms of academic engagement of this group of students, there also exists no difference between males ($M = 54.266$, $SD = 8.0929$) and females ($M = 53.120$, $SD = 9.0568$), $t = 0.403$, $p = 0.689$.

Inferential Statistics

The current study connection between classroom Environment, motivation, engagement, and academic performance, which is conducted through the Pearson correlation.

Table 4. Correlation Matrix of all study Variables

Variables	Level of significance	
	r-value	Table -value(p)
classroom environment and student motivation	.960**	0.000
classroom environment and student engagement	.997	0.000
classroom environment and academic performance	.956**	0.000

There is a very high positive correlation between classroom environment and motivation among the learners ($r=.960$, $p=.000$) implying that a good classroom environment can help raise the level of both intrinsic and extrinsic motivations of the learners. In the same way, there is also a very high positive correlation between classroom environment and engagement of the learners ($r=.997$, $p=.000$) implying that a good classroom environment will help raise the behavioral, emotional and cognitive engagements of the learners. Additionally, there is also a very high positive correlation between classroom environment and academic achievement among the learners ($r=.956$, $p=.000$) implying that those learners who study in comfortable, organized and interactive classroom environments perform better academically.

Table 5: Regression Coefficients for the Effect of Classroom Environment on Student Motivation, Student Engagement, and Academic Performance

Model	Predictor	B	Std. Error	Beta	t	Sig.
Student Motivation	Constant	.012	.018	—	.695	.488
	Classroom Environment	.995	.004	.997	227.006	.000

Student Engagement	Constant	1.278	.049	—	26.290	.000
	Classroom Environment	.709	.012	.960	59.195	.000
Academic Performance	Constant	.261	.067	—	3.897	.000
	Classroom Environment	.929	.016	.956	56.391	.000

Regression analysis classroom environment affects student motivation, engagement, and academic achievement, regression analysis was carried out. The results obtained indicated that classroom environment has a highly statistically significant effect on all the aforementioned variables. Firstly, there is a high positive effect of classroom environment on student motivation ($B = .995$, $\beta = .997$, $t = 227.006$, $p < .001$). Thus, one can conclude that classroom environment changes significantly improve motivation of students. Secondly, student engagement is highly affected by classroom environment ($B = .709$, $\beta = .960$, $t = 59.195$, $p < .001$). Moreover, it is important to note that positive classroom environment is positively correlated with students' academic achievement ($B = .929$, $\beta = .956$, $t = 56.391$, $p < .001$). Therefore, it can be argued that improving classroom environment helps in achieving better academic results.

DISCUSSION

Classroom environment influences the improvement of the students' motivational levels, engagement and academic performance at a very high rate. The correlations between classroom environment and motivation ($r = .960$), engagement ($r = .997$) and academic performance ($r = .956$) have been found to be very high. A positive classroom environment enhances the engagement of students in their studies and their academic performance. All these results are similar to those predicted by the Self-Determination Theory because it posits that good learning environment facilitates the growth of students' intrinsic motivation and engagement. Students, whose studying took place in interactive and resourceful classroom settings, obtained high scores in academics and were more emotionally and behaviorally engaged in academic assignments. No gender and department differences have been identified, thus, it can be said that the impact of classroom environment on academic performance is the same for all students.

CONCLUSIONS

The main purpose of the research was to explore and examine students' motivation, involvement, and performance through higher learning institutions by exploring the effect of the classroom environment and also the role of mediation through motivation and involvement. According to the research conducted, the classroom environment is very crucial and helps students be motivated if the physical conditions and infrastructure of the classroom and the interaction.

Behavioral and emotional involvement was also greatly improved through the positive classroom environments, such as attending classes, participating in class discussions, cooperating with other students, feeling proud of being part of the class, feeling comfortable, and belonging to the classroom community. The academic performance was also enhanced or influenced positively by the overall positive classroom environments, encouraging certain students to perform outstanding tasks in class as a way to showcase their abilities under such conducive environments. Importantly, the research at hand also points out the

mediation by motivation and engagement in the students, on how the class environment influences academic performance, which evidences interdependence between the environmental, psychological, and behavioral elements.

RECOMMENDATIONS

- Teachers should develop supportive and interactive classroom environments.
- Institutions should improve physical classroom facilities.
- Student-centered and interactive teaching methods should be promoted.
- Regular student feedback should be collected to improve classroom conditions.
- Student well being and counseling programs should be strengthened.

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