

Examining the Relationship Between Classroom Learning Environment and Student Academic Success at Secondary Level

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Abstract

A classroom learning environment is very important in determining whether a student will succeed academically or not. This quantitative survey research assessed the link between the classroom learning environment and student academic success at the secondary school level in District Kotli, Azad Jammu and Kashmir. A descriptive cross-sectional survey design was used. The population consisted of 1050 secondary level teachers in District Kotli, AJ&K. By means of simple random sampling, 320 teachers were picked as the sample. A five-point Likert scale questionnaire (5=Strongly Agree to 1=Strongly Disagree) with 14 items was created and educational experts validated it. Reliability was attained from conducting a pilot study with Cronbach's alpha ($\alpha = 0.81$). Data were analyzed through frequency, percentage, mean scores, standard deviation, and Pearson correlation. According to the findings, teachers agreed that classrooms are adequately sized ($M = 4.60$, $SD = 0.72$), students are encouraged to ask questions ($M = 4.52$, $SD = 0.67$), teachers praise students ($M = 4.69$, $SD = 0.54$), and teachers provide proper feedback ($M = 4.59$, $SD = 0.68$). The overall classroom environment mean was 4.33 ($SD = 0.52$). Academic achievement of students ranged from 52 to 95 ($M = 76.45$, $SD = 10.82$). Pearson correlation found a strong, significant positive association between overall classroom environment and student academic success ($r = 0.78$, $p = 0.000$). Teacher-student interaction recorded the strongest correlation ($r = 0.82$, $p = 0.000$), then classroom engagement ($r = 0.74$, $p = 0.000$) and physical facilities ($r = 0.71$, $p = 0.000$). The research finds that a well-kept classroom environment particularly the supportive teacher-student interaction has a very good positive correlation with student academic success.

Keywords: Classroom Learning Environment, Student Academic Success, Secondary Level, Physical Facilities, Teacher-Student Interaction.

Introduction

The current educational landscape stresses effective teachers and successful learning students. Today's school environment has changed drastically from that of our grandparents, yet quite a few classrooms still follow old ways of teaching that were used several years ago. A learning environment must be able to support student performance by having adequate teaching and learning facilities. In order for the classroom to be a proper place for learning, teaching and learning facilities are what the classroom will require to working properly. Classroom setting consists of two elements: physical and human. Physical elements include such things as blackboards, furnishings, lighting, projection screens, books, computers, etc. Human

elements are teachers and students, fact that teacher-student relationship being the most important aspect of the human component (Fraser, 1986). This behavior pattern is what makes an environment-learning state, circumstances, and atmosphere of using the learner's and the teacher's joint perceptions in that setting is what Fraser (1986) considered sharing, their point of view are (both) valuable for comprehending the class dynamics. According to Walberg (1974), psychological concerns constitute the climate or the atmosphere of the classroom as a social group that may affect what learners learn. From this point of view, learning is not simply an individual's cognitive process but a socially embedded one at that. The classroom learning environment was viewed by Moss and Trickett (1974) as a social system in motion including both teacher and student behavior. Their findings revealed that many relationships at the same time influence the classroom as a complex ecosystem environment. Fraser (1991) pointed out that the classroom environment includes general atmosphere, structures and processes, etc., and has been a major topic for research around the world since the 1960s. The development, measurement, and study of diverse aspects of the classroom learning environment have resulted in a large amount of knowledge that is still guiding educational practice (Fraser, 2015).

Different factors play a role in a student's academic achievement. This research paper, however, focuses only on the physical facilities, interaction between teacher and student, and student engagement. Reynolds et al. (2014) claimed that successful schools automatically stimulate students to learn, so that academic success and the motivation to learn, which are expected, respected, and rewarded, are natural consequences. This type of environment that results in much better academic performance and which is an important feature of an effective school is the very one that attracts and motivates students (Reynolds et al., 2014). Murray (1938) defined educational setting as a mutual reaction between personal needs and environmental press, pointing out that environment is an active agent in determining the educational experiences. This perspective on education points out that surroundings are no mere scenery for learning but a very important element determining the experiences and results of education.

The physical environment of a classroom comprises spaces for activities, proper arrangement of seats, and the materials being well-organized and easily reachable. Literature on school spaces indicates that students' achievement is affected by the environmental features, and that well-executed designs of learning spaces contribute to improved student performance (Espinosa-Andrade et al., 2024). Wang and Holcombe (2010) pointed out that well-fashioned and nurturing atmospheres lead to better behaviors and higher student involvement levels and effectiveness. A nicely laid out physical environment expresses to students that their education is important to the school and that the classroom is a place for serious, quality work.

Teachers are indeed the main component of the teaching-learning cycle. Through the power of their personality, the teacher may be the one who leads the learner to either defeat or success. Studies into teacher-student relationships show that positive teacher-student interactions contribute majorly to students' well-being and academic performance (Zhou et al., 2023). Students are greatly attracted to those teachers who are supportive, caring, loving, and enthusiastic. Teachers need to be receptive to their students so that together they build an environment that is conducive to learning.

One of the most important factors determining the success or failure of a student is the school environment. Wang and Degol (2016) comprehensively surveyed the literature on school climate and revealed its significant impact on student outcomes in various aspects. Suleman and Hussain (2014) studied how the classroom physical environment influences secondary school students' academic achievement and reported that in the conditions of an experimental study in Kohat Division, Pakistan, the physical environment was a major factor that influenced the students' study outputs. Cohen (2006) considers learning climate as the nature of school life that is reflected by the patterns of interactions and the resulting expectations, goals, beliefs, and first of all inter-personal relations, teaching, learning and leadership.

Statement of the Problem

At the secondary level in Azad Jammu and Kashmir, there has been very limited research combining the factors of classroom learning environment, physical facilities, teacher-student interaction, and student engagement. It is important to know how these environmental factors correlate with student academic achievement so that changes can be made to improve educational results. Research from outside the country has established the significance of learning environments but there is a need for research that focuses on the particular conditions of secondary schools in AJ&K. Consequently, this research explored the link between classroom learning environment and student academic success at the secondary level in the District Kotli, AJ&K.

Objectives of the Study

1. To examine the effect of classroom environment on the academic success of secondary school students.
2. To determine whether well-managed classroom environment is more effective than traditional environment regarding student academic success.
3. To explore teacher perceptions regarding physical facilities and instructional support.
4. To investigate the relationship between classroom environment dimensions and student academic success.

Research Questions

1. What is the relationship between classroom learning environments and student academic success?
2. What is the impact of classroom learning environments on student academic success?
3. What are teacher perceptions regarding the availability and adequacy of classroom facilities?
4. Which dimensions of classroom learning environment show the strongest relationship with student academic success?

Significance of the Study

This research gives a fresh perspective on the classroom environment factors that are contributing to effective education in Pakistan and AJ&K. Teachers may use the findings as a reference for the execution of classroom management strategies that foster learning.

Knowing which facets of the learning environment are most closely linked to students' academic performance might enable teachers to focus their time and resources more efficiently. Besides that, students will benefit from well-established learning environments through enhanced educational experiences and academic success. Further, the findings of the research may be used as a basis for decision-making by administrators regarding resource allocations and infrastructure improvement.

In a well-managed learning environment, a student is not only a pupil but also a citizen who is capable of becoming a productive and responsible individual and a positive contributor to the development of the community.

Review of Related Literature

Concept of Learning Environment

The learning environment is a space characterized by educational and co-curricular activities where teachers and students interact in classrooms, libraries, and laboratories, as per Fraser (1986). It features the deep climate, physical structures, and the typical processes that collectively give the character to a classroom. The

social climate is the result of interaction between teachers and students not only at school but also at other places. Fraser (1991) remarked that since the 1960s, the classroom learning environment has been a significant focus of research all over the world, and the conceptualization, assessment, and study of different aspects have yielded an extensive body of knowledge. Fraser (2015) went on to say that classroom learning environments consist of several dimensions including physical, social, and psychological aspects which together determine student success.

The classroom environment is an important factor that influences the academic success of secondary school students, which shows that creating supportive learning environments cannot be ignored. When exposed to certain conditions and influences, a person gradually learns new skills, acquires knowledge, and develops competencies that are manifested in continuous changes of behavior, further leading to academic growth.

Physical Environment and Learning

The physical environment refers to the educational setting in which effective learning happens. Dorman (2002) pointed out that research on the classroom environment has been progressing very well and that the physical dimension is the one that is most often investigated. Studies of educational spaces show that the school infrastructure is closely related to learning outcomes, and therefore well-designed facilities result in better student performance (Espinosa-Andrade et al., 2024).

Through an experimental study in Kohat Division, Pakistan, Suleman and Hussain (2014) explored the impact of the physical environment of classrooms on academic achievement scores of secondary school students and observed that a favorable classroom environment was markedly more effective in enhancing academic achievement scores than unfavorable ones. Physical conditions that fail to accommodate the educational process lead to student decline and disengagement. The existence and suitability of educational aids and other services are among the major factors accounting for various levels of student performance. UNICEF (1990) described poor learning environments in developing countries as a key factor leading to low levels of public secondary school results.

School Environment and Learning

Wang and Degol (2016) conducted an extensive review on the topic of school climate, discussing what it is, how it can be measured, and its influence on student results. They reported that, very reliably, a good school climate correlates with not only academically successful students but also those who are behaviorally less problematic and psychologically much better off. The school setting is like an ever-present source of motivation for pupils to strive for knowledge.

School Climate as a Factor in Student Learning

According to Wang and Holcombe (2010), one of the largest-scale studies on national data investigating adolescents' perceptions of school environment, engagement, and academic achievement. Their findings showed that high senses of school connectedness and safety were most highly related to higher academic achievement.

A democratic classroom allows more freedom, gives more permission, and also ensures safe student-teacher relationships and independent work. Cohen (2006) characterizes learning climate as the nature of school life constituted by interaction patterns that reveal expectations, goals, beliefs, personal relations, teaching, learning, and leadership.

A school atmosphere that nurtures and supports the well-being of young people assists them not only in their development but also in acquiring the skills necessary for leading productive lives in a democratic society.

Students-Teacher Relations

Teacher partnership, classroom management, and teaching techniques are necessary components of the

learning process.

The teacher plays a major role in creating the classroom atmosphere as the individual who delivers lessons, measures progress, and reforms conduct. Zhou et al. (2023) showed that teacher-student relationships, subjective well-being, and academic achievement were interrelated through supporting data from Chinese fourth and eighth graders. Their research demonstrated that strong teacher-student ties had higher correlations with positive subjective well-being and academic achievement results.

Marzano and Marzano (2003) pointed out that the work of teachers greatly influences the success of students. Specifically, having good interactions with students is a main factor in making teachers effective. In fact, a teacher who cannot communicate with students will inevitably fail in delivering a good performance. Reynolds et al. (2014) carried out a review of educational effectiveness research and concluded that teacher quality is still one of the most powerful factors at the school level that determine student outcomes. Chen et al. (2016) assert that teachers who are supportive, loving, enthusiastic, and friendly can make a difference in the academic growth of students by creating a culture in which students can flourish intellectually.

Classroom Facilities and Learning:

Improved academic performance is linked to adequate classroom facilities, sufficient library resources, well-equipped laboratories, as well as adequate sanitation and water facilities. Research on educational spaces confirms that the connection between school infrastructure and learning outcomes is strong. (Espinosa-Andrade et al., 2024) Their article, based on data from UNESCO standardized tests in Ecuador, also highlights that academic achievement is correlated significantly with the quality of the educational environment in schools. UNICEF (1990) pointed out the existence of poor learning environments in developing countries as a major reason why public secondary school results remain at low levels. He stressed how crucial facilities and resources are. Classrooms with good management and more than enough resources have a positive impact on student performance. Besides that, they can be a factor in raising the quality of education as a whole. Suleman and Hussain (2014) experimentally showed that conducive physical classroom environments lead to statistically higher academic achievement scores among secondary school students.

Methodology

To carry out the study, quantitative research method was employed alongside a descriptive cross-sectional survey design. The population consisted of all teachers at secondary level in District Kotli, AJ&K, totaling 1050. A sample of 320 teachers (roughly 30% of the total population) was chosen through the use of a simple random sampling technique.

The 14-item questionnaire based on a five-point Likert scale (5=Strongly Agree to 1=Strongly Disagree) was developed by the researcher. It covered three main areas: physical facilities (5 items), teacher-student interaction (6 items), and classroom engagement (3 items). The questionnaire was validated by educational experts and pilot-tested in four secondary schools. Cronbach's alpha reliability analysis yielded a coefficient of 0.81, indicating a good level of internal consistency.

Since the researcher gathered the data himself, the response rate was very high. SPSS was used to carry out the statistical analysis that included frequency, percentage, mean scores, standard deviation, and Pearson correlation. Mean interpretation scale: 4.50, 5.00 = Very Strong Agreement, 3.50, 4.49 = Strong Agreement, 2.50, 3.49 = Moderate, 1.50, 2.49 = Disagreement, 1.00, 1.49 = Strong Disagreement.

Results

Factor 1: Physical Facilities

Table 1: Physical Facilities in the Classroom (N = 320)

Statement	SA%	A%	N%	DA%	SDA%	M	SD
Classroom size is adequate	66	28	1	4	0	4.60	0.72
Sufficient chairs are available	66	28	4	2	0	4.58	0.70
Lights and fans are available	39	52	6	3	0	4.27	0.75
Clean drinking water is provided	44	40	10	4	2	4.20	0.92
Required teaching aids are provided	22	47	9	17	5	3.64	1.15
Category Mean						4.26	0.68

SA=5, A=4, N=3, DA=2, SDA=1

Interpretation of Table 1:

Physical facilities were rated with a category mean of 4.26 (SD = 0.68), which implies that the teachers practically agreed while strongly agreeing. The highest ratings were given to classroom size (M = 4.60, SD = 0.72) and seating (M = 4.58, SD = 0.70) with 94% agreement for both, which means that most classrooms in the schools are sufficiently sized and equipped with a low level of variation.

Additional features including lighting and ventilation (M = 4.27, SD = 0.75) as well as drinking water (M = 4.20, SD = 0.92) reflected strong agreement, but the larger variability for water indicates that not all schools have this facility. Among different facilities counted on, teaching aids came out the least as shown by a score of M = 3.64, SD = 1.15. Furthermore, 22% of the teachers were not in agreement about its provision. The large standard deviation reflects a major difference in the availability of teaching aids and points to the biggest infrastructure problem. This is confirmed by Espinosa Andrade et al. (2024) who revealed that the quality of school infrastructure is an important factor affecting academic performance.

Factor 2: Teacher-Student Interaction

Table 2: Teacher-Student Interaction and Support (N = 320)

Statement	SA%	A%	N%	DA%	SDA%	M	SD
Students are encouraged to ask questions	58	38	3	0	1	4.52	0.67
Student questions are properly entertained	45	47	9	1	0	4.38	0.68

Statement	SA%	A%	N%	DA%	SDA%	M	SD
Students are encouraged to explore talent	56	43	1	0	0	4.55	0.54
Students find solutions to problems	29	68	3	0	0	4.26	0.55
Teacher praises students	71	27	2	0	0	4.69	0.54
Teacher provides proper feedback	66	30	2	1	1	4.59	0.68
Category Mean						4.50	0.48

SA=5, A=4, N=3, DA=2, SDA=1

Interpretation of Table 2:

Teacher-student interaction came out as the highest-rated dimension of the study with a category mean at 4.50 (SD = 0.48), which indicates that respondents strongly agreed with the statements and the variability was least across all the dimensions. Among all the items praising students was the one getting the highest individual mean score (M=4.69, SD =0.54) from the respondents, with 98% of them agreeing. This shows that positive reinforcement is very much part of the teaching practices. The result is in line with the research of Zhou et al. (2023) who found that a positive teacher-student relationship has a great impact on a student's well-being and performance. Other two items: giving feedback (M= 4.59, SD=0.68) and supporting talent (M=4.55, SD=0.54) also reflected very high levels of agreement. On the other hand, items like asking questions (M= 4.52, SD=0.67), and making questions funny (M= 4.38, SD=0.68) received strong to very strong agreement from the respondents, while encouraging solution-finding (M= 4.26, SD=0.55) seems to leave more room for improvement. Altogether the small discrepancies in the scores (low standard deviations) show that the positive teacher-student interaction is a norm in the secondary schools of District Kotli.

Factor 3: Classroom Engagement

Table 3: Classroom Environment and Student Engagement (N = 320)

Statement	SA%	A%	N%	DA%	SDA%	M	SD
Classroom is comfortable for students	49	41	5	2	2	4.35	0.80
Creative activities are provided	27	53	9	10	0	4.00	0.89
Students participate in discipline	30	57	9	4	0	4.13	0.76
Category Mean						4.16	0.68

SA=5, A=4, N=3, DA=2, SDA=1

Interpretation of Table 3:

Classroom engagement obtained an overall average score of 4.16 (SD = 0.68) showing that people mostly agreed with the item.

The comfort level of classrooms was rated the highest (M = 4.35, SD = 0.80) with 90% agreement. This is indicative that well-equipped facilities and teacher behaviors that support students are the main factors in creating comfortable learning environments. This result corroborates Wang and Holcombe's (2010) findings, who observed that positive perceptions of the school environment are closely related to higher student engagement and performance.

The average score for student involvement in discipline was also quite high (M = 4.13, SD = 0.76), with 87% agreement, which means that classroom management is being done in a participatory manner.

Engaging students in creative activities got the lowest average score (M = 4.00, SD = 0.89), with only 27% strongly agreeing and 10% disagreeing. The larger standard deviation points to the fact that creative instructional methods are not consistently used, which means that the traditional methods can still be dominant even though the overall environment is very supportive.

Factor 4: Student Academic Success

Table 4: Student Academic Success Scores (N = 320)

Measure	Minimum	Maximum	M	SD
Student Academic Success Scores	52	95	76.45	10.82

Interpretation of Table 4:

Student academic success scores ranged from 52 to 95, with the average being 76.45 (SD = 10.82). The average level of academic achievement reflects generally good performance in the school. However, because the standard deviation is 10.82 and the range is 43 points, there's a considerable spread, meaning that while some students excelled, others performed poorly. This broad spread might be explained in part by differences in the learning environments in classrooms in different schools since Suleman and Hussain (2014) have shown that conducive physical classroom environments lead to significantly greater academic achievement scores.

Factor 5: Relationship Between Classroom Environment and Student Academic Success

Table 5: Correlation Between Classroom Environment Variables and Student Academic Success (N = 320)

Variable	M	SD	r	p-value
Physical Facilities	4.26	0.68	0.71	0.000
Teacher-Student Interaction	4.50	0.48	0.82	0.000
Classroom Engagement	4.16	0.68	0.74	0.000
Overall Classroom Environment	4.33	0.52	0.78	0.000
Student Academic Success	76.45	10.82	—	—

* $p < 0.01$ (2-tailed)*

Interpretation of Table 5:

Pearson correlation analysis revealed that overall classroom environment has a strong, significant positive relationship with student academic success ($r = 0.78$, $p = 0.000$). This indicates that as the quality of the classroom learning environment improves, student academic success scores tend to increase substantially. Among the three dimensions, teacher-student interaction demonstrated the strongest correlation ($r = 0.82$, $p = 0.000$), establishing it as the most critical environmental factor. This finding aligns with Zhou et al. (2023), who found significant associations between teacher-student relationships and academic achievement. Classroom engagement showed the second strongest correlation ($r = 0.74$, $p = 0.000$), followed by physical facilities ($r = 0.71$, $p = 0.000$). All correlations were statistically significant at $p < 0.01$, confirming these relationships are not due to chance. The correlation hierarchy suggests that the human dimension of education exerts greater influence on academic success than physical infrastructure, consistent with Wang and Degol's (2016) comprehensive review of school climate effects.

Discussions

The results of this study reveal that secondary level teachers in District Kotli, AJ&K perceive their classroom learning environments positively across all three dimensions, with all factors demonstrating strong, significant positive correlations with student academic success.

Physical Facilities: Foundation for Academic Success

People strongly agree with the statement that physical facilities contribute to academic success ($M = 4.26$, $SD = 0.68$), and the very significant correlation with academic success ($r = 0.71$, $p = 0.000$) further confirm the fact that the provision of good infrastructure is a necessary basis for education. The extremely high scores for classroom size ($M = 4.60$) and furniture ($M = 4.58$) are clear evidence that basic structural needs in most secondary schools are largely being fulfilled.

The results of the study provide empirical evidence consistent with the work of Espinosa-Andrade et al. (2024), who identified the impact of school infrastructure on learning achievement, as well as with Suleman and Hussain (2014), who experimentally demonstrated that good physical classroom conditions raise student performance.

Nevertheless, the significantly lower score for teaching aids only ($M = 3.64$, $SD = 1.15$) uncovers a major shortage of such resources. The large standard deviation suggests quite a variety in provision, i.e. some schools being well-stocked while some have hardly any teaching materials. The difference between the sufficient basic infrastructure and the shortage of the teaching resources indicates that the priority of the capital investments has been the physical structures rather than the instructional materials. Remedying the situation by a very focused offering of the teaching aids may, in fact, deepen the relationship between the physical environment and the academic success.

Teacher-Student Interaction: The Strongest Predictor of Academic Success

The unanimous opinion about teacher-student interaction ($M = 4.50$, $SD = 0.48$) and its main role in academic success ($r = 0.82$, $p = 0.000$) are two major results of this research work. Firstly, the scores for this area were preferable to the others, secondly, the standard deviation was the least different also, which means that good teacher-student relations are a common feature supported and maintained in all secondary schools of District Kotli. To find out that the correlation between teacher-student interaction and academic success is greater than for physical facilities or classroom engagement is indeed the proof of the dominating role of the human factor in the success of education.

Almost all teachers practice the habit of praising their students ($M = 4.69$, 98% agreement), which is a very

remarkable fact. Such a high level of agreement could be interpreted as the professional culture of secondary teachers in this region relying heavily on positive reinforcement. According to Zhou et al. (2023), teacher-student relations that are positive have a significant contribution to students' happiness and their achievement in school. They provide ample evidence from both elementary and middle schools. Praise might lead to higher self-efficacy of learners, inspiring them to learn and, at the same time, to feel comfortable enough to take risks in learning.

Providing proper feedback, an equally strong practice ($M = 4.59$, 96% agreement), shows that teachers also see assessment as a continuous, formative process. Giving students effective feedback would enable them to recognize where their current achievements stand in relation to the learning objectives and at the same time provide them with clear directions for enhancing their work. Wang and Holcombe (2010) found that a nurturing environment essentially supports student engagement and capacity. Additionally, fostering talent exploration ($M = 4.55$, 99% agreement) and promoting questions ($M = 4.52$, 96% agreement) reflect a student-centered methodology which appreciates the distinct development and inquisitiveness of each learner.

The very strong relationship between teacher-student interaction and academic achievement implies that if there is a decision to be made between professional development directed at enhancing teacher interaction skills and the equivalent investments in physical infrastructure, the former might bring about more substantial changes in student achievement levels. Marzano and Marzano (2003) viewed teacher quality as a main factor student success, and current results corroborate this statement within the AJ&K setting. In a similar way, Reynolds et al. (2014) also confirmed through their extensive review that teacher quality is still one of the most important school-level factors influencing student outcomes.

Classroom Engagement: Active Learning for Academic Success

High level of agreement on classroom engagement ($M = 4.16$, $SD = 0.68$) along with a very strong correlation of academic success ($r = 0.74$, $p = 0.000$) attest that participative learning setting with enthusiastic and active involvement continue to have a positive effect on student outcomes. Class comfort ($M = 4.35$) was recognized as it was the strongest factor indicating that when a variety of teacher behaviors is supportive combined with a facility that offers minimum needs, these are factors and conditions of which students may feel relaxed. This is in line with Wang and Degol (2016) who provided extensive evidence that a positive school climate is regularly associated with higher academic performance as well as better psychological health.

Student participation in discipline ($M = 4.13$, 87% agreement) points to a transition toward a participatory classroom management where students are partly involved in responsibility for a good learning environment. However, creative activities got a lot fewer ratings ($M = 4.00$) with more significant differences between ratings ($SD = 0.89$) which means that even though classrooms are comfortable and orderly, instructional approaches may largely be traditional. This result shows that there may be a mismatch between the very supportive relational environment and the relatively conventional instructional methods. Teachers who are capable of establishing relationships could be given professional development in different instructional strategies to enhance the engagement-academic success relationship.

Synthesis of Findings

The order of correlations, teacher-student interaction ($r = 0.82$), classroom engagement ($r = 0.74$), physical facilities ($r = 0.71$), gives a scientifically justified basis for education planning. The high overall correlation ($r = 0.78$, $p = 0.000$) supports Fraser's (1986, 1991) claim that classroom environment has a significant impact on learning outcomes, and the study further relates this to the AJ&K context. The order means that although all factors have a role, teacher-student relationships could be the key factor in improving student academic success, as found by Zhou et al. (2023). Also, the results show that international classroom

environment research can be applied in the AJ&K context and point to teacher praise and encouragement as local educational culture's great strengths.

Conclusions

The purpose of this research was to find out the association between classroom environment and student's academic achievement at the secondary level in District Kotli, AJ&K. The study was carried out by collecting data from 320 teachers through a questionnaire and some important results have come out.

Considering physical facilities at secondary level, the results show that they are quite suitable on the whole as most of the schools have big enough classrooms, good seating arrangements, lighting, ventilation, and drinking water availability. These facilities have a strong positive link with student academic success which means that physical infrastructure is an important base for effective teaching and learning. However, the availability of teaching aids and instructional materials is still a problem and irregular. This issue has brought about a direct result that teaching resources continue to be a significant challenge in our context. If this matter is taken care of, then the positive influence of the physical environment on student academic success would definitely be increased.

Regarding the inside of student-led environments, teacher-student interaction is found to be a highlight contributing factor to the success of the student academically and the teachers were in almost complete agreement on the significance of this dimension and it had the highest relation with academic success of the student. Almost all teachers reported practices such as praising students, giving constructive feedback, encouraging questions, and supporting the development of natural talent. This is to say that such teacher behaviors can be counted as major strengths of the secondary education system in District Kotli. Results indicate that the quality of human relationships in classrooms could well be the most powerful environmental factor that influences student academic success. Thus, in the presence of human relationships, it should be the physical infrastructure alone (which naturally also includes the natural surroundings and the materials available for the student) which creates an environment conducive to academic success. However, the human relations factor measures the willingness of students to take advantage of this environment and to do well. This teaching workforce seems to portray professional practices that are well in line with international research on effective pedagogy.

Engagement in learning is generally associated with classroom participation and the results show there is strong agreement as well as a significant positive correlation between it and student academic success. Students consider their classrooms comfortable learning spaces and they even participate to some extent in the maintenance of discipline. But the fact that less attention is being paid to creative activities shows that instructional approaches may still be largely traditional despite the very supportive relational environment. Therefore, in order to work on the already existing teacher-student interaction strengths and to further increase student academic success, a great deal of variety needs to be introduced to the use of activity-based instructional strategies.

The overall connection between the classroom learning setting and student academic success seems to be strong, positive, and statistically significant. This confirms that the learning environment plays a crucial role in determining educational outcomes in the AJ&K region and offers a research-based model for school improvement. The gradation of relationships, with teacher-student interaction being the most significant, provides definite pointers for focusing on the improvement efforts.

Student academic success results reflect overall satisfactory performance but accompanied by large disparities. This means that although the system is running at a certain level, there might be some significant gaps between high and low performers. The fact that environment factors are strongly linked to academic success implies that enhancing classroom learning environments, particularly the quality of teacher-student interaction, might lead to decreased variability and increased average levels of academic success.

Recommendations

Following on from the main points and inferences, the recommendations below are drafted for different stakeholders.

For Teachers:

Teachers should reflect on their current practices that praise students and give feedback to students in a positive and constructive way. These practices are strongly linked with student academic success. Feedback that positively reinforces students is almost universally practiced and could be considered a major professional strength to be preserved and further improved over time. It may be inspiring for teachers to delve into finding new ways of teaching aside from using a lecture-only approach. Teachers could think about incorporating various types of learning with more enjoyable and activity-oriented instruction such as project-based learning, group work, and hands-on learning. Because teacher-student interaction is very strongly related to academic success, the teachers who grasp this kindly may in fact seek teacher training which is aimed specifically at professional questioning and techniques which can be used to promote student autonomy and problem-solving. The slightly lower score for encouraging solution-finding conveys a message that teachers may want to consider this as a potential area for their own personal development.

For Administrators:

School administrators may decide to give the acquisition and equitable distribution of teaching aids and instructional materials a higher priority in the light of the fact that it was the largest gap in resources by all aspects. A regular check-up on the existence of teaching aids could be made to pinpoint the specific requirements of the different schools. As the main facilities seem to be sufficient, the investments in the future could be focused on the instructional resources such as models, charts, laboratory equipment, and digital materials. Besides, principals may consider addressing the differences in the availability of drinking water so that all schools could be at the same level of health standards at least.

Given that teacher-student interaction seems to be the strongest factor associated with academic achievement, school leaders may want to design outstanding teacher interaction practices celebration recognition program and initiate a system of mentoring where experienced teachers would assist other colleagues. Work resources could be set aside for professional development, particularly in areas like training constructive feedback, motivating students, and conducting instructional methods artistically.

Curriculum Developers:

It could be decided by curriculum developers that specific support for the creation of a favorable class learning environment be a component of the official documents and the teacher's guides. The curriculum might offer strategies which are not only theoretical but also can be practically used to implement various instructional methods besides the traditional ones, including the suggestions of activities in detail as well as the frameworks of the projects. Great emphasis might be laid on developing teaching materials based on activity-based learning, and the distribution of such teaching aids may take place along with the textbooks so as to provide the teachers with the necessary tools for effective implementation. Since there is such a close link between the classroom environment and the students' academic success, it is strongly recommended that the curriculum documents make the educational environment a major component of the educational process rather than just a setting for instruction.

For Policymakers:

Policy-makers may need to set and implement minimum standards for physical facilities in secondary schools so that classrooms have the right space, furniture, lighting, air, water for drinking, and teaching aids. Regular inspection will reveal which schools do not meet the standards and therefore need resources. Since teacher-student dialogue and student academic achievement are very closely linked, teacher training education can include strong training in establishing a positive classroom environment. Pre-service teaching can be a focus on giving feedback to students, effective praise, student motivation, and building relationships as professional skills that are on a par with content knowledge. In-service training programs

can be informed by these skills. Budgets should be allocated to reflect the recommendation of the study that enhancing the quality of teachers especially their interaction skills leads to better student academic success than even the provision of infrastructure that is usually one of the most expensive.

For Future Researchers:

One step forward researchers can take is to include direct measures of student perceptions together with those of teacher perceptions to paint a fuller picture of classroom environments. Designs that span over a long time period to monitor how the changes in classroom environment affect student academic success can be very helpful in strengthening causal claims. Studies that compare different districts and educational levels can reveal whether these findings apply more generally or not. Research that intervenes and measures the results from specific changes (such as more teaching aids provision or teacher interaction training) can offer experimental findings that go hand in hand with correlational ones. Using both qualitative and quantitative research instruments such as making use of classroom observations and conducting qualitative interviews may give a more thorough picture of how environmental factors affect daily classroom experiences and student academic success.

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