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Correlation Between the Classroom Environment and Academic Achievement of the Higher Secondary School Students in Kerala

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Abstract



Keywords:

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Classroom environment refers to the physical, social, and emotional context where teaching and learning take place. It includes factors like classroom layout, student-teacher relationships, classroom climate, and instructional practices. Academic achievement reflects the extent to which students, teachers, or institutions achieve their short- and long-term educational goals. Both teachers and students interact in a classroom setting to achieve these goals, and a positive environment promotes a safe, respectful, welcoming, and supportive learning atmosphere. A well-designed classroom is crucial for effective learning. In this study, data were collected from 1,000 higher secondary school students, particularly from XI standard in Kerala, India. The tool used was "The Classroom Environment" developed by the OECD School User Survey (2018). Quarterly examination marks were used to measure academic achievement. The study aimed to identify significant mean differences based on gender, school type, and parents' educational qualifications, revealing a positive and significant relationship between classroom environment and academic achievement.

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INTRODUCTION

Teachers and students alike view schools as places where they may create their lives. A further consideration that our society takes into account is the atmosphere of the schools as well as the level of academic success that each school possesses. As a result, being successful in school has become a measure of a child's future, particularly in a world that is exceptionally competitive. It is the physical, social, and emotional context in which teaching and learning take place that is referred to as the classroom environment, as stated by Levin and Nolan (2014).

Among the elements that are included are the classroom layout, the connections between students and teachers, the atmosphere in the classroom, and the instructional strategies of the teachers. The class environment, on the other hand, is defined by Bullard as a complex interaction of physical, social, and instructional elements that influences student engagement, motivation, and learning outcomes. Class environment is a complicated interplay. It is impacted by the activities of teachers, the students' interactions with one another, and the culture of the school. Taking into account the various educational settings and pedagogical approaches that are utilized in various countries, a global perspective on the classroom environment takes into account the cultural, socioeconomic, and historical aspects that have an impact on the dynamics of the classroom and the outcomes of student learning.

A combination of social and emotional aspects of the classroom, as well as academic components, make up the classroom environment. This particular research endeavor makes use of a classroom questionnaire that is broken down into six different dimensions. This is the first dimension, which focuses on the student: A

person who is enrolled in coursework at a school or another institution of higher education is referred to as a student. The second aspect is the spaces that you make use of. A classroom, sometimes known as a designation space, is a learning area or room that is provided or taught in a manner that allows for learning to take place without interruption from external disturbances. A condition of bodily ease and freedom from peace or restraint is what we mean when we talk about comfort, which is the third dimension! Learning space, also known as learning setting, is a physical setting for a learning environment, which is a place where teaching and learning take place. The fourth dimension is the layout of the space. Feeling comfortable to express one's emotions, having the security and confidence to take risks, and feeling challenged and delighted to say something new are all aspects of the fifth dimension, which is emotional and physical safety and wellbeing. The degree to which students feel they are able to freely express their feelings while they are at school is referred to as emotional safety in schools. Utilization of technology in educational settings constitutes the sixth and final dimension. Smart tables and projectors are examples of instruments that are included in the technology that is used in schools. These tools improve the learning and teaching experience. A more well-structured curriculum is guaranteed by the utilization of an integrated learning system.

REVIEW OF RELATED LITERATURE

The 2022 KCSE examination in Kenya recorded a pass rate of 61.96%, indicating suboptimal performance attributed to factors including poverty, overcrowded classrooms, and inadequate teaching quality. Kamoet and Mbirithi (2024) conducted a study to examine the influence of the classroom environment on academic performance in public secondary

schools in Mombasa County, Kenya. The study aimed to address three primary research questions: the impact of class size on student academic performance, the effect of teacher-student ratio on academic achievement, and the influence of teaching style on students' academic outcomes.

The study also analyzed the book-student ratio. A descriptive research design was employed to collect data for examining the correlation between the classroom environment and academic achievement. The research involved 1000 participants from four public secondary schools located in Mombasa County. The study examined the impact of class size, teacher-student ratio, teaching methods, and resource distribution on the academic performance of secondary students in Mombasa County. The research highlighted the critical influence of particular factors on academic performance. Educators and students both endorsed the beneficial effects of reduced class sizes and a lower Teacher-Student Ratio (TSR) on academic performance and engagement. Students strongly endorsed effective teaching styles, particularly pedagogical approaches and individualized instruction. Educators recognized the beneficial impact of resource allocation, especially subject-specific literature, on academic performance. The objective of Aneke (2022) was to examine the impact of the learning environment on the academic performance of secondary school students in the Makurdi metropolis of Benue State. The study employed a descriptive survey design. Data collection was conducted through a questionnaire, and the analysis involved calculating means and standard deviations. The study's results indicate that sufficient infrastructure facilitates student learning, leading to improved academic achievement compared to inadequate

physical facilities and outdated teaching methods.

Baafi (2020) examined the impact of classroom environment on the academic achievement of students in Ghana. Participants were selected through a multi-stage sampling technique. A regression model is employed to analyze the impact on the dependent variable. An effective learning environment is significantly more beneficial for improving students' achievement than a non-conducive environment. Schools may be provided with adequate facilities to enhance student performance.

The research by Qamar and Nawaz (2021) examines the influence of classroom environment on student learning. This study is characterized as descriptive. A questionnaire was employed to gather the data. The study's results indicated that the lecture room environment—encompassing placement, classroom redecoration, chair arrangement, student communication and feedback management, exercise setup, rule development, and rule communication—significantly influenced student learning.

PURPOSE OF THE STUDY

In today's increasingly competitive landscape, individuals strive for exceptional levels of achievement as a reflection of their performance. The entire educational framework is focused on the academic success of students, creating an ideal environment for scholarly investigation. Effective learning occurs only when a proper and conducive environment is provided for students in the classroom. The learning environment or atmosphere pertains to the conditions under which the learning process fundamentally occurs. Each individual classroom fundamentally necessitates its own unique teaching and learning environments.

Arends (2007) suggests that classes ought to be depicted in a way that connects them from afar while also differing in their dynamics and methodologies. Additionally, a classroom setting encompasses two main elements concerning both physical and human dimensions. The physical aspect of the classroom encompasses all tangible items such as the blackboard, equipment, furniture, lighting, projector, desktops, and books. The human element consists of the educators and learners present within the classroom environment. Umar (2017) highlights the crucial influence of the classroom environment on students' academic achievement and overall development. The classroom serves as more than just an intellectual space for students; it is also a social, emotional, and physical environment.

A successful classroom environment must achieve a balance among teaching methods, classroom resources, and the diverse learning styles present within the class. Integrating learning and teaching fosters an environment that benefits both students and educators, leading to a more enriching educational experience. Academic achievement refers to the degree to which a student, educator, or institution has fulfilled their immediate or extended educational objectives. The interaction between the teacher and students in a classroom setting is essential for achieving their objectives. A positive environment fosters safety, respect, warmth, and support for student learning. An effectively designed classroom is essential for optimal learning outcomes.

The classroom environment significantly influences the development of an individual's inherent potential, and schools have consistently been recognized as a crucial element in a child's educational journey. The educational outcomes of students and their achievements are significantly influenced by

the diverse and evolving roles of educators, as well as the resources they offer to support student learning. Given that the classroom environment impacts students' academic achievement, the study aims to explore the relationship between classroom environment and students' academic achievement.

METHODOLOGY

This study employed a survey method directed at higher secondary school students participating in private, government, and government-aided programs. A total of 1000 higher secondary school students, specifically those in the XI standard, from Kerala, India, participated in this study. A random sampling method is utilized for the survey. The instrument employed for the study is The Classroom Environment, developed by the OECD school user survey (2018), which assesses the classroom environment experienced by students. The assessment evaluates the classroom environment across six dimensions: student-related factors (4), spatial utilization (9), comfort (8), spatial arrangement (2), emotional and physical safety and wellbeing (4), and technology usage in school (11), comprising a total of 29 questions. The marks from the quarterly examination were utilized for the academic accomplishment score.

RESEARCH QUESTIONS

Is there is any significant difference between male and female higher secondary school students in their classroom environment and academic achievement?

Is there is any significant difference among the type of school like Government, Government Aided and Private schools in their classroom environment and academic achievement?

Is there is any significant difference between the father's educational qualification namely

School level and graduate level in their classroom environment and academic achievement?

Is there is any significant difference between the mother's educational qualification namely school level and graduate level in their classroom environment and academic achievement?

Is there is significant correlation between the classroom environment and academic achievement?

FINDINGS OF THE STUDY

Is there is any significant difference between male and female higher secondary school students in their classroom environment and academic achievement?

It is observed that female students have better classroom environment and academic

achievement than the counterpart at 1% level. Hence it is proved that there is a significant mean difference between male and female higher secondary school students in their classroom environment and academic achievement.

Is there is any significant difference among the type of school like Government, Government Aided and Private schools in their classroom environment and academic achievement?

It is noted that private school students have better classroom environment than the government school students followed by the government aided school students at 1% level. Whereas, it is also able to observed that government school students have better academic achievement than the government aided students followed by the private higher secondary school students.

Table 1 significant difference between male and female higher secondary school students in their classroom environment and academic achievement

Variables	Gender				't' value	Level of Significance		
	Male (N=612)		Female (N=388)					
	Mean	S.D	Mean	S.D				
Classroom Environment	119.12	29.263	125.61	24.690	3.767	P<0.001		
Academic Achievement	55.73	18.743	64.73	20.532	7.126	P<0.001		

Table 2 significant differences among the type of school like Government, Government Aided and Private schools in their classroom environment and academic achievement

Variables	Type of Institution						'f' value	Level of Significance		
	Government (N=173)		Government Aided (N=496)		Private (N=331)					
	Mean	S.D	Mean	S.D	Mean	S.D				
Classroom Environment	120.58	7.921	116.27	31.462	130.24	26.368	26.578	P<0.001		
Academic Achievement	63.51	21.004	58.41	19.627	58.18	19.586	4.905	P<0.001		

Table 3 significant difference between the father's educational qualification namely

Variables	Father's Educational Qualification				't' value	Level of Significance		
	School Level (N=692)		Graduation Level (N=308)					
	Mean	S.D	Mean	S.D				
Classroom Environment	116.31	20.301	133.21	37.010	44.170	P<0.001		
Academic Achievement	55.78	18.282	67.13	21.282	38.506	P<0.001		

Table 4 significant difference between the mother's educational qualification namely

Variables	Mother's Educational Qualification				't' value	Level of Significance		
	School Level (N=616)		Graduation Level (N=384)					
	Mean	S.D	Mean	S.D				
Classroom Environment	116.29	21.217	130.05	34.156	31.170	P<0.001		
Academic Achievement	54.86	18.184	65.99	20.595	41.539	P<0.001		

Is there is any significant difference between the father's educational qualification namely School level and graduate level in their classroom environment and academic achievement?

It is observed that students father's educational qualification as graduation level have better classroom environment and academic achievement than the school level at 1% level. Hence it is proved that there is a significant mean difference between higher secondary school student's father's educational qualification in their classroom environment and academic achievement.

Is there is any significant difference between the mother's educational qualification namely school level and graduate level in their classroom environment and academic achievement?

It is observed that students mother's educational qualification as graduation level have better classroom environment and academic achievement than the school level at 1% level. Hence it is proved that there is a significant mean difference between higher

secondary school student's mother's educational qualification in their classroom environment and academic achievement.

Is there is significant correlation between the Classroom Environment and Academic Achievement?

Table 5 significant correlation between the Classroom Environment and

Variables	Classroom Environment	Academic Achievement
Classroom Environment	1	0.948**
Academic Achievement	X	1

It is observed that there is significant and positive correlation between the classroom environment and academic achievement at 1% level. Hence it is proved that there is a strong and positive relationship between the classroom environment and academic achievement of the higher secondary school students.

CONCLUSION

Classrooms should be well-organized, equipped, and facilitated with all necessary materials (learning resources such as audiovisual aids and multimedia, as well as physical resources such as furniture) to increase student motivation and active participation in activities that may lead to higher achievement. Classroom Environment and Academic Achievement are inextricably linked, so it is the primary responsibility of educators, administrators, government bodies, and other related institutions to provide opportunities for students to improve their Classroom Environment, which will have a direct impact on their Academic Achievement. Students' classroom experiences assist them improve their behavioural, social, and academic skills. Teachers and students agree that the learning environment has an important role in influencing academic success, emphasizing the importance of creating a conducive, supportive, and rewarding environment.

Ethical Approval

No ethical approval was necessary for this study.

Author Contribution

All authors made substantial contributions to the conception, design, acquisition, analysis, or interpretation of data for the work. They were involved in drafting the manuscript or revising it critically for important intellectual content. All authors gave final approval of the version to be published and agreed to be accountable for all aspects of the work, ensuring its accuracy and integrity.

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