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وزارة التربية والتعليم العالي الفلسطينية Palestinian Ministry of Education and Higher Education	¹ اسم الجامعة والدولة (لأول) باللغتين العربية والإنجليزية	The role of improving the physical, psychological and social school environment in stimulating students' motivation towards learning – Boys' School, Kharbatha Al-Misbah Primary School for Boys
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الملخص:

هدفت هذه الدراسة إلى التعرف على دور تحسين البيئة المدرسية سواء من الناحية البدنية أو النفسية أو الاجتماعية في تعزيز دافعية الطلاب نحو عملية التعلم. قامت الباحثة بدراسة حالة مدرسة ذكور خربثا المصباح، واتخذت هذه المدرسة نموذجاً للتحليل. وتضمنت طريقة الدراسة جمع البيانات وتحليلها، بما في ذلك مراجعة الأدبيات المتوفرة حول الموضوع، وإجراء المقابلات مع الطلاب والمعلمين وإدارة المدرسة، بالإضافة إلى الملاحظة المباشرة للبيئة المدرسية. واستخدمت الباحثة عينة من الطلاب والمعلمين والإدارة المدرسية لتقييم أثر تحسين البيئة المدرسية على تحفيز الطلاب. وتم تحليل البيانات التي تم جمعها لاستخلاص النتائج الرئيسية. وأظهرت النتائج أن هناك أثراً إيجابياً لتحسين البيئة المدرسية الجسدية والنفسية والاجتماعية على دافعية الطلبة نحو التعلم، كما أوصت الدراسة بضرورة إعطاء المدارس الأولوية لخلق بيئة إيجابية تغذي دافعية الطلاب ومشاركتهم. ومن خلال تنفيذ استراتيجيات تشجع التنوع الثقافي، وتتصدى لتهديدات الصور النمطية، وتقدم تجارب تعليمية مخصصة من خلال التقنيات الرقمية، تستطيع المدارس تحسين رضا الطلاب، والنتائج الأكاديمية، والرفاهية العامة. وبالنظر إلى المستقبل، من الضروري أن يواصل القادة التربويون استكشاف طرق لتعزيز المناخ المدرسي ودعم الطلاب في تحقيق إمكاناتهم الكاملة.

كلمات مفتاحية: (البيئة المدرسية، التحفيز، التكنولوجيا، القيم)

Abstract:

This study aimed to identify the role of improving the school environment, whether physically, psychologically or socially, in enhancing students' motivation towards the learning process. The researcher studied the case of Kharbatha Al-Misbah Boys School, and took this school as a model for analysis. The study method included data collection and analysis, including reviewing the available literature on the subject, conducting interviews with students, teachers, and school administration, in addition to direct observation of the school environment. The researcher used a sample of students, teachers, and school administration to evaluate the impact of improving the school environment on student motivation. The collected data was analyzed to extract the main conclusions. The results showed that there is a positive impact of improving the physical, psychological and social school environment on students' motivation towards learning. The study also recommended that schools should give priority to creating a positive environment that nurtures students' motivation and participation. By implementing strategies that encourage cultural diversity, address stereotype threats, and provide personalized learning experiences through digital technologies, schools can improve student satisfaction, academic outcomes, and overall well-being. Looking to the future, it is essential that educational leaders continue to explore ways to enhance school climate and support students in achieving their full potential.

Keywords: (School environment, motivation, technology, values)

1. Introduction

1.1. Background of the Study

The academic success of students is impacted by a variety of factors, both environmental and personal, that have been extensively explored in educational studies. Among these factors, the school atmosphere and student drive play pivotal roles in shaping students' educational experiences. Previous research has indicated that the school climate, which encompasses relationships, norms, and values, along with students' motivational processes such as self-efficacy and intrinsic motivation, are closely tied to academic accomplishments. However, there has been limited exploration into how the overall school environment influences student motivation beyond just teacher-student interactions.

The objective of the current study is to address these gaps by examining the interaction between school climate, student motivation, and academic success. By investigating the direct connections between various aspects of perceived school climate (including teacher-student relationships and order/safety/discipline) and motivational beliefs (self-efficacy and intrinsic motivation), this study aims to uncover the mechanisms through which the school environment impacts student academic performance. Furthermore, the study will explore how student motivations act as mediators in the relationship between perceived school climate and academic achievements.

Through an in-depth analysis of these intricate connections, this study aims to offer valuable insights into how enhancing the school environment can improve student motivation and ultimately enhance academic outcomes. This research is crucial for comprehending the complex dynamics at play within schools and for paving the way for targeted interventions to establish a more supportive and stimulating learning environment for students. See reference (Fan & Williams, 2018)^[5].

1.2. Research Aim and Objectives

The goal of this study is to explore how enhancing the school environment impacts student motivation. By delving into the connections between school climate, student motivation, and academic achievement, this research aims to uncover the ways in which improving the school setting can boost student motivation. Specifically, it will investigate how aspects of student motivation like self-efficacy and intrinsic motivation are shaped by perceptions of school climate regarding order, safety, discipline, fairness, and teacher-student relationships. Furthermore, this study aims to determine if student motivation acts as a mediator in the relationship between school climate and academic achievement in reading and math. Through addressing these inquiries, this research strives to add to the existing literature by highlighting the significance of establishing a supportive and engaging school environment to cultivate student motivation and enhance academic performance. See references: (Hafzoglu & Yerdelen, 2019, pages 1-5)^[14], (Fan & Williams, 2018)^[5].

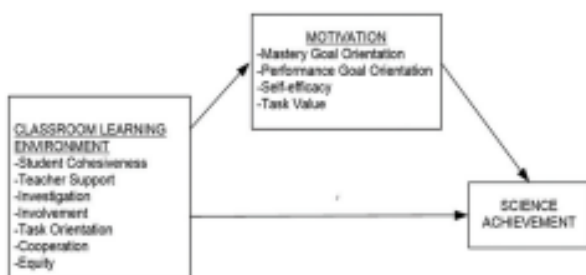


Figure 2: Hypothesized model about the mediator role of motivation in the relationship between the perceived learning environment and science achievement (source: reference (Hafzoglu &

Yerdelen, 2019)^[14]

1.3. Research Methodology

In order to investigate the influence of enhancing the school environment on student motivation, this research will adopt a mixed-methods approach to gather in-depth data and insights. The study will integrate qualitative and quantitative methodologies to offer a holistic perspective on how the school environment affects student motivation.

To collect qualitative data, interviews with students, teachers, and administration will be conducted to capture subjective experiences and perceptions regarding the current state of the school environment. These interviews will shed light on how the physical, psychological, and social aspects of the school setting impact student motivation.

Moreover, observations within the school premises will be carried out to objectively evaluate the existing conditions and pinpoint potential areas for enhancement. This data collection method will assist in understanding how various elements within the school environment either contribute to or impede student motivation.

Sampling techniques will be employed to select a diverse group of participants for interviews and observations. By ensuring a broad range of perspectives, this research aims to encompass various viewpoints on school environment and student motivation.

Overall, this research methodology seeks to offer a thorough analysis of how improving the school environment can have a positive influence on student motivation. By combining qualitative insights with quantitative data, this study aims to generate practical recommendations for enhancing the school environment to foster increased student engagement and academic success. See references: (Pont et al., 2008, pages 36-40)^[12], (Pont et al., 2008, pages 86-90)^[12], (Pont et al., 2008, pages 1-5)^[12].

2. Literature Review

2.1. Importance of School Environment on Student Motivation

The atmosphere within a school setting plays a fundamental role in influencing students' drive and academic accomplishments. Schools with positive climates, characterized by robust connections among students, teachers, families, and the community, providing safety from violence and bullying, as well as supportive environments with clear disciplinary guidelines, have been correlated with increased attendance rates, test scores, promotion rates, and graduation rates. Research has shown that schools with favorable climates are ten times more likely to exhibit significant improvements in reading and math compared to those with less favorable climates. The impact of school climate on student motivation can be observed through various facets such as teacher-student relationships, high expectations, structured classroom teaching, effective leadership, and the general sense of belonging within the school environment.

Studies suggest that a positive school climate nurtures bonds between students and educators, offers emotional security and a sense of identity, and cultivates a feeling of purpose and belonging among students. This nurturing atmosphere leads to enhanced academic performance beyond what might be predicted based on socioeconomic factors alone. Furthermore, the structural aspects of the school environment, including physical conditions and available resources, influence how students experience care and personalization on a daily basis. By establishing an environment conducive to learning where students feel supported, secure, challenged, and engaged in their studies, schools can boost student motivation towards achieving success.

In conclusion, it is evident that creating a positive school environment is crucial for enhancing

student motivation. Emphasizing the development of strong relationships within the school community, upholding high expectations for academic achievement, implementing supportive leadership strategies, and ensuring a safe and stimulating learning environment for all students can significantly enhance their engagement in academic pursuits. See references: (Cook-Harvey, 2018, pages 1-5)^[6], (Fan & Williams, 2018)^[6], (School Climate Improvement, 2024)^[3], (Cook-Harvey, 2018, pages 21-25)^[6], (Zhao et al., 2023)^[7].

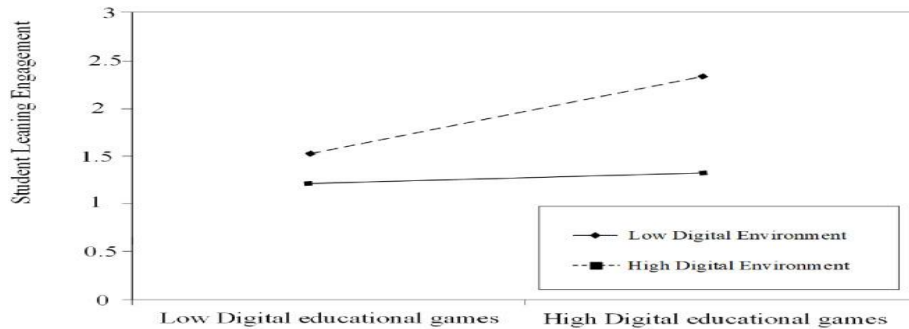


Figure 3: The moderating role of digital environment on the relationship between digital educational games and student learning engagement. (source: reference (Li et al., 2024)^[15])

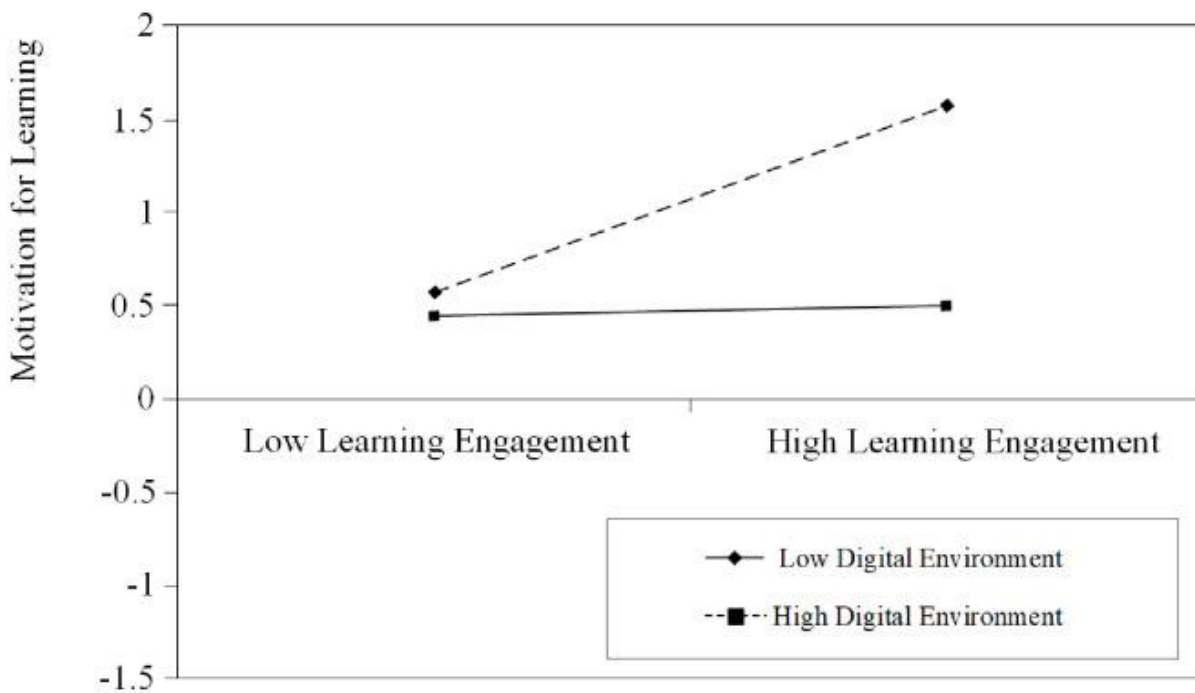


Figure 4: The moderating role of digital environment on the relationship between student learning engagement and motivation for learning. (source: reference (Li et al., 2024)^[15])

Predictor	Student Engagement	Learning Motivation	for
B	SE	B	SE
Moderation model			
Constant	1.592***	0.367	0.761*
City	0.067	0.076	-0.068

Predictor	Student Engagement	Learning Motivation	for	
B	SE	B	SE	
Education	-0.079	0.082	-0.041	0.080
Network equipment	0.056	0.036	-0.015	0.036
Frequency of playing online games	-0.316	0.256	0.660	0.249
Digital games educational	0.260***	0.049		
Student engagement learning			0.284***	0.045
Digital environment	0.350***	0.046	0.315***	0.046
Digital games educational x Digital environment	0.205***	0.050		
Student engagement learning x Digital environment			0.263***	0.047

Table 1: Regression results for moderating effect. (source: reference (Li et al., 2024)^[15])

Moderated mediation model	Effect Value	BootSE	BootLLCI	BootULCI
Low Digital environment (Mean - 1 SD)	0.0073	0.0282	-0.0504	0.0617
Digital environment (Mean)	0.0770	0.0194	0.0400	0.1177
High Digital environment (Mean + 1 SD)	0.1466	0.0270	0.0964	0.2021
Difference	0.1393	0.0388	0.0691	0.225

Table 2: Regression results for moderated mediation model. (source: reference (Li et al., 2024)^[15])

2.2. Previous Studies on Improving School Environment

Prior research has underscored the negative impact of punitive school atmospheres, especially on students from marginalized communities and those with disabilities. Policies that involve suspensions and expulsions have been associated with adverse effects such as decreased learning opportunities, poor academic performance, involvement in the criminal justice system, and high dropout rates. Studies reveal that punitive disciplinary actions disproportionately affect minority students, resulting in higher suspension and expulsion rates for Black students in comparison to their White counterparts. This disproportionate representation is not due to a higher rate of misconduct among Black students but rather stems from harsher penalties for similar infractions.

The implementation of zero-tolerance strategies has led to schools implementing security

measures like surveillance cameras, metal detectors, and an increased presence of law enforcement personnel. Consequently, minor incidents have escalated to involving the police, further contributing to the criminalization of Black and Brown youth through what is commonly referred to as the school-to-prison pipeline.

Conversely, research has demonstrated that restorative approaches within educational institutions can serve as a more beneficial alternative to exclusionary disciplinary policies. Instead of deterring future misbehavior, exclusionary practices have been found to heighten the likelihood of recurrent offenses. Restorative methods concentrate on addressing the harm caused by delinquent behavior by tackling its root causes and fostering accountability within a nurturing school environment.

In essence, these prior studies stress the significance of transitioning away from punitive disciplinary actions towards establishing inclusive and supportive school settings that prioritize student welfare and academic achievement. See reference (Klevan, 2021)^[6].

3. Theoretical Framework

3.1. Physical Environment in Schools

The setup of school environments is a key factor in shaping students' eagerness to learn. It includes the layout, resources, and organization within the learning area, directly affecting student concentration and behavior. The physical structure of a school can impact student involvement and imagination, creating opportunities for learning throughout the space. Additionally, the cleanliness, orderliness, and attractiveness of facilities, along with sufficient resources and materials, are crucial elements of a positive physical environment that boosts student motivation.

Studies suggest that a supportive physical setting can enhance students' sense of belonging in the school community. By establishing a welcoming and student-oriented environment that is well-lit and structured, schools can convey that students are central to the educational process. Showcasing student artwork, projects, and writings further reinforces this feeling of belonging. Moreover, integrating multicultural visuals and texts into the physical surroundings promotes inclusivity and diversity within the school environment.

Moreover, a positive physical atmosphere can increase feelings of security among students. When students feel protected from physical harm and other forms of aggression or exclusion on school grounds, their overall well-being is nurtured. This sense of safety contributes to a conducive learning environment where students can excel academically and socially.

In summary, the physical environment in schools has a significant impact on student motivation by providing a suitable space for learning, fostering a sense of belonging, ensuring safety, and improving overall well-being. By prioritizing the creation and upkeep of a positive physical environment in educational settings, schools can effectively bolster student motivation and academic achievement. See references: (Motivation and the Learner Environment, 2024)^[9], (Cook-Harvey, 2018, pages 21-25)^[6].

3.2. Psychological Factors Affecting Student Motivation

The psychological aspects impacting student motivation within the school setting are pivotal in determining academic achievement. One crucial element is the support provided by teachers, which plays a key role in nurturing students' motivation and involvement. Research indicates that teachers can boost students' engagement and motivation levels through supportive actions, ultimately leading to improved academic results. This becomes even more essential for vulnerable students who lack parental care, as teacher support helps them maintain their interest in learning. Additionally, the theory of social support emphasizes the significance of perceived supportive behaviors from teachers in fostering students' mental well-being and growth. When students feel

that their teachers cultivate a genuine learning environment, they strengthen their connection to the school community, resulting in heightened motivation for academic success. Furthermore, educators who embrace cultural diversity and acknowledge students' abilities contribute significantly to overcoming stereotypes and enhancing academic achievements.

Moreover, establishing an emotionally supportive environment within schools by fostering positive relationships between students and teachers is vital for promoting educational development. Tailoring the educational experience to meet individual students' needs and interests also leads to better academic outcomes. Building strong bonds and positive connections within the school setting can lead to increased attendance rates, a stronger commitment to learning, and overall student triumph.

To sum up, psychological factors such as teacher support, cultural acceptance, and emotional connections play a crucial role in influencing student motivation within the school environment. By prioritizing these factors and cultivating a supportive ambiance for students, schools can effectively boost student engagement and academic success. See references: (Zhao et al., 2023)^[7], (Darling-Hammond et al., 2019)^[4], (Cook-Harvey, 2018, pages 31-35)^[6].



3.3. Social Environment and Student Engagement

The social atmosphere holds a key position in driving student motivation and involvement in the school environment. The connections that students form with their peers, educators, and school administrators have a profound impact on their overall learning experience and attitude towards education. Positive social exchanges establish a feeling of belonging and encouragement, which in turn cultivates intrinsic drive and academic achievement.

Studies have indicated that smaller schools or educational communities with tailored structures tend to enhance student performance, attachment, attendance, attitudes towards schooling, behavior, motivation, and graduation rates. In such settings, educators are able to create strong bonds with students by understanding them on various levels, fostering a sense of camaraderie within the institution. Teachers express an increased sense of effectiveness in personalized environments, while parents feel more at ease reaching out to the school for support.

Additionally, promoting trustful relationships among teachers, parents, and school leaders is crucial for establishing a supportive social environment that bolsters student success. Schools that prioritize trust and positive connections are more likely to witness improvements in academic achievement and other student outcomes. Cultivating robust relationships between staff and parents through consistent communication and cooperation can enrich the overall school atmosphere and contribute to enhancing student well-being.

To conclude, the social milieu within a school exerts significant influence on students' motivation and engagement. By fostering customized learning communities, nurturing positive relationships among stakeholders, and valuing relational trust, schools can elevate student experiences and

ultimately foster academic success. See references: (Cook-Harvey, 2018, pages 26-30)^[6], (Darling-Hammond et al., 2019)^[4].

4. Case Study: Kharbatha Al-Misbah Primary School for Boys

4.1. Overview of the School

Kharbatha Al-Misbah Primary School for Boys is a foundational establishment committed to molding young intellects and fostering academic advancement. Located in a diverse neighborhood, the school encounters distinctive obstacles and chances that impact its leadership framework and overall efficiency. The notion of principalship at Kharbatha Al-Misbah is deeply ingrained in the traditional model of education, where one person bears primary responsibility for the institution. Nevertheless, as education progresses in the 21st century, there is a growing acknowledgment that shared and cooperative leadership strategies may be more effective in addressing contemporary issues.

The school's surroundings play a crucial role in shaping the leadership strategies of its administrators. Aspects like student demographics, school size, location, and type all influence the leadership hurdles confronted by the principal. To cater to the diverse requirements of its student body, Kharbatha Al-Misbah must offer inclusive and multicultural educational schemes. This requires an emphasis on individualization and customization of learning journeys to enhance student results.

Moreover, nurturing organizational learning and constructing capacity for continual enhancement are fundamental responsibilities of school leadership at Kharbatha Al-Misbah. The school head serves as a key liaison between central policies and classroom methodologies, translating overarching objectives into tangible enhancements in teaching and learning. By establishing an environment conducive to shared learning and utilizing data-informed approaches to curriculum design, the school leader plays a pivotal role in enriching student accomplishments.

In summary, Kharbatha Al-Misbah Primary School for Boys showcases the convergence of conventional leadership paradigms with contemporary educational requisites. As the school continues to maneuver through intricate challenges and prospects, effective leadership practices will be indispensable in propelling positive outcomes for students, educators, and the broader society. See references: (Pont et al., 2008, pages 21-25)^[12], (Pont et al., 2008, pages 16-20)^[12].

4.2. Current State of the School Environment

Understanding the current situation at Kharbatha Al-Misbah Primary School for Boys is crucial for enhancing student motivation. Research shows that smaller schools foster stronger connections and trust among educators and students, leading to improved attendance and academic performance. Compact learning communities within schools offer tailored instruction, collaborative learning, and support for all students. The school's atmosphere, including safety, belonging, and resources, significantly impacts student drive. Feedback surveys from students, parents, and teachers can identify areas for improvement, while setting norms for respectful conduct and conflict resolution training can create a positive environment.

Addressing infrastructure issues is essential for creating a conducive learning environment at Kharbatha Al-Misbah Primary School for Boys. Disparities in building conditions can hinder academic progress, especially for students from underprivileged areas. Ensuring proper maintenance of school structures over time is necessary to support student success.

In conclusion, by focusing on school size, tailored learning communities, supportive climate, and infrastructure upkeep, Kharbatha Al-Misbah Primary School for Boys can cultivate an environment that enhances student engagement and academic achievement. See references: (Cook-Harvey,

2018, pages 46-50)^[6], (Darling-Hammond et al., 2019)^[4], (Barrett et al., 2018, pages 31-35)^[11].

5. Research Methodology

5.1. Data Collection Methods

Methods of data collection play a vital role in acquiring pertinent information to assess the impact of enhancing the school environment on student drive. Diverse qualitative data collection techniques can be utilized to delve into the viewpoints of students and educators regarding the school setting. One efficient approach involves conducting interviews with students, teachers, and administrators to gather in-depth qualitative data about their experiences, perspectives, and challenges within the school environment. These interviews can yield valuable insights into how the current school atmosphere influences student motivation and participation.

Moreover, classroom observations serve as a valuable tool to capture real-time interactions and activities within the learning environment. Observations enable researchers to evaluate teaching methods, levels of student engagement, and overall classroom dynamics that contribute to student motivation. By observing these interactions, researchers can pinpoint areas for improvement in classroom layout or social dynamics that may have a positive impact on student motivation.

Additionally, holding focus groups with students, parents, or educators can offer valuable qualitative data on specific topics related to the school environment and student drive. These discussions provide participants with a platform to express their opinions, concerns, and suggestions for improving the school environment to better support student motivation. Open-ended surveys allowing detailed responses can also be beneficial in gathering qualitative data on perceptions of teaching practices, learning approaches, and overall school ethos.

In essence, employing a combination of qualitative data collection methods such as interviews, observations, focus groups, and open-ended surveys can provide a comprehensive understanding of how enhancing the school environment impacts student motivation. By engaging with various stakeholders in the educational domain, researchers can acquire valuable insights that inform recommendations for improving the school environment to promote increased student engagement and academic achievement. See references: (Ratinho & Martins, 2023)^[1], (Renaissance, 2023)^[10].

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> • Published in 2005 or later • Review and meta-analysis studies • Formal education K-12 • Peer-reviewed articles • Articles in English • Reports from professional/international bodies • Governmental reports • Book chapters 	<ul style="list-style-type: none"> • Ph.D. dissertations and theses • Conference poster papers • Conference papers without proceedings • Resources on higher education • Resources on pre-school education • Individual studies

Table 3: Inclusion and exclusion criteria for the selection of resources on the impact of digital technologies on education (source: reference (Timotheou et al., 2022)^[17])

	<i>M(SD)</i>	1	2	3	4	5
1. Gender	1.53 (0.50)	-	-	-	-	-
2. Age	12.05 (1.81)	0.024	-	-	-	-
3. School climate	4.01 (0.63)	-0.009	-0.099***	-	-	-
4. Achievement	3.92 (0.53)	0.016	-0.094***	0.475***	-	-

	<i>M(SD)</i>	1	2	3	4	5
motivation						
5. Learning adaptability	4.08 (0.66)	0.036	-0.095***	0.606***	0.561***	-
6. Teacher support	4.44 (0.62)	-0.001	-0.056*	0.765***	0.459***	0.608***

Table 4: Means, standard deviations, and correlations among variables. (source: reference (Zhao et al., 2023)^[7])

Journal Name	Paper count - initial search	Paper count – phase 1	Paper count – phase 2	Final paper count – phase 3
1. Computers & Education	121	32	10	9
2. British Journal of Educational Technology	82	6	3	1
3. The International Review of Research in Open and Distributed Learning	33	5	3	3
4. The Internet and Higher Education	11	1	1	0
5. Journal of Educational Technology & Society (ET&S)	102	18	6	6
6. *Journal of Learning Analytics	0	0	0	0
7. Journal of Computer Assisted Learning	35	7	3	3
8. Education and Information Technologies	91	25	8	8
9. Educational Technology Research, and Development	59	13	5	3
TOTAL	534	107	38	33

Table 5: Result-set size for the number of papers of "personalized learning" during each research phase by the journal (source: reference (Shemshack & Spector, 2020)^[18])

Journal Name	"Personalized learning"	"Adaptive learning"	"Individualized instruction"	"Customized learning"
1. Computers & Education	9	6	0	0
2. British Journal of Educational Technology	1	4	0	0
3. The International Review of Research in Open and Distributed Learning	3	1	0	3
4. The Internet and Higher Education	0	0	0	0

Journal Name	"Personalized learning"	"Adaptive learning"	"Individualized instruction"	"Customized learning"
5. Journal of Educational Technology & Society (ET&S)	6	3	2	0
6. International Conference on Learning Analytics and Knowledge/Journal of Learning Analytics	0	0	0	0
7. Journal of Computer Assisted Learning	3	0	0	0
8. Education and Information Technologies	8	2	0	0
9. Educational Technology Research, and Development	3	1	1	0
TOTAL: 56	33	17	3	3

Table 6: Result-set size for the number of papers of "personalized learning," "adaptive learning," "individualized instruction," and "customized learning" by the journal (source: reference (Shemshack & Spector, 2020)^[18])

Measurement model	χ^2	df	$\Delta\chi^2$	CFI	TLI	SRMR	RMSEA
The hypothesized four-factor model	3889.424	3074		0.944	0.943	0.051	0.035
Three-factor model (combining DEG and DE)	5633.681	3077	1744.257***	0.825	0.820	0.091	0.062
Three-factor model (combining DE and ML)	5860.626	3077	1971.202***	0.809	0.804	0.095	0.065
Two-factor model (combining DEG and SLE; DE and ML)	7818.954	3079	3929.530***	0.675	0.667	0.138	0.084
One-factor model (combining DEG, SLE, DE and ML)	10259.192	3080	6369.768***	0.508	0.495	0.141	0.104

Table 7: The results of confirmatory factor analyses. (source: reference (Li et al., 2024)^[15])

Variable	α	M	SD	1	2	3	4	5	6	7
(1)	.54	3.84	.85							

Variable	α	M	SD	1	2	3	4	5	6	7
Rehearsal										
(2) Organization	.52	3.70	.79	.139 **						
(3) Critical thinking	.56	3.69	.61	.143 **	-.004					
(4) T & S Env. Mgmt	.54	3.51	.66	.335 ***	.192 ***	-.192 ***				
(5) Effort regulation	.68	3.21	.79	.629 ***	.486 ***	.294 ***	-.294 ***			
(6) Peer learning	.56	3.68	.91	.166 **	.023	-.169 **	-.463 ***	.463 ***		
(7) Help seeking	.62	3.10	.64	.738 ***	.596 ***	.403 ***	.110 **	.572 ***	-.572 ***	

Table 8: Coefficient alphas, means, mean differences, and one-way repeated-measures ANOVA pairwise comparison results for learning strategies of participants. (source: reference (Gbolli & Keamu, 2017)^[2])

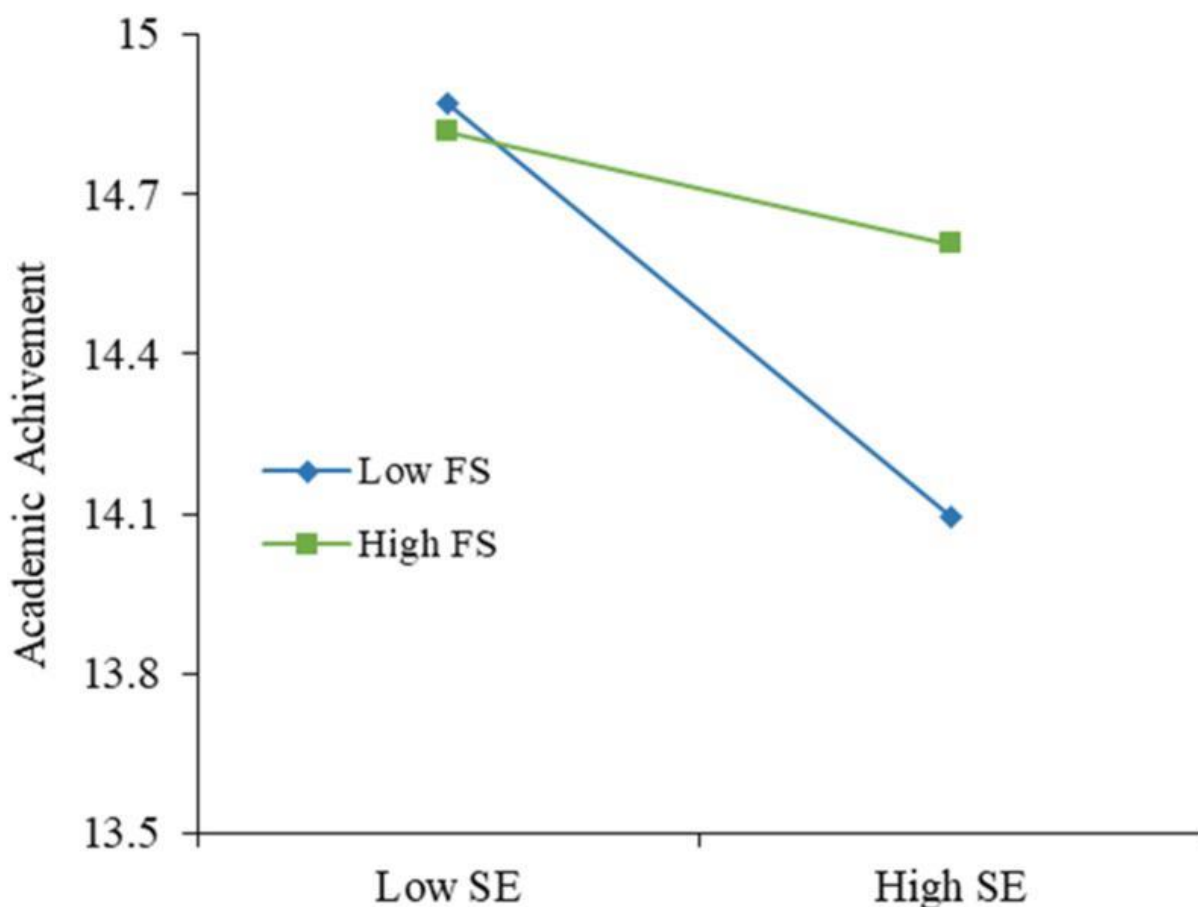


Figure 6: Structural model (variance-based technique) for academic achievement. (source: reference (Simoes et al., 2022)^[19])

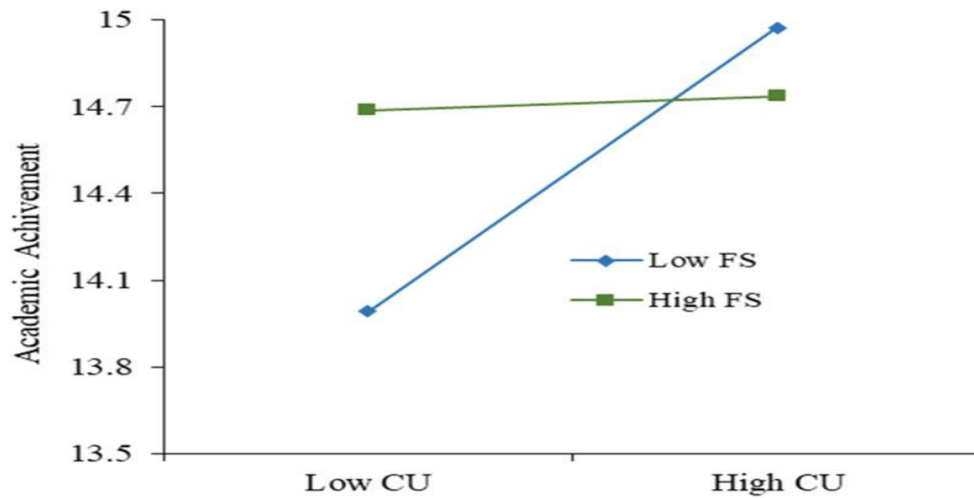


Figure 7: Structural model (variance-based technique) for academic achievement. (source: reference (Simoes et al., 2022)^[19])

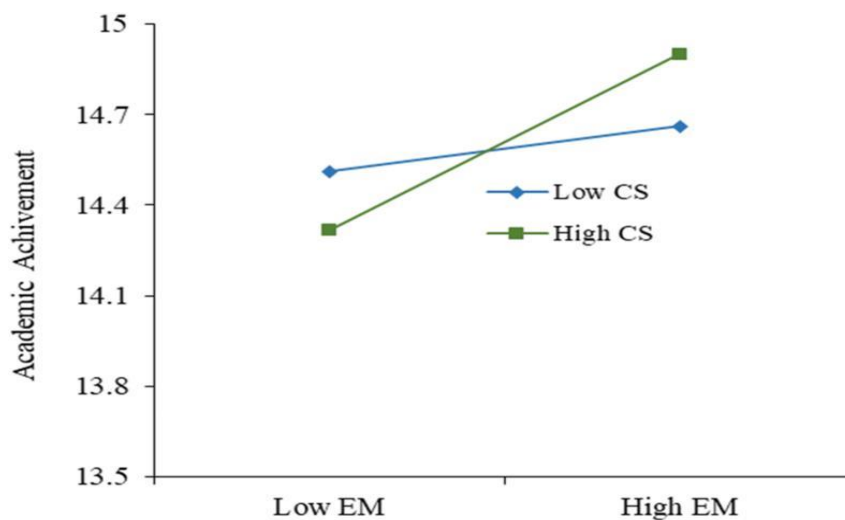


Figure 8: Structural model (variance-based technique) for academic achievement. (source: reference (Simoes et al., 2022)^[19])

Effect of	Indirect effect (a x b) (t-value)	Direct effect (c) (t-value)	Sign (a x b x c)	Interpretation	Conclusion
HE -> CU -> AA	0.117* (2.025)	0.111 (1.560)	+	Full mediation	sub-ref-H4c supported
SE -> CU -> AA	0.086* (2.271)	-0.246 *** (3.958)	+	Complementary mediation	sub-ref-H4c supported

Table 9: Hypotheses testing on mediation. (source: reference (Simoes et al., 2022)^[19])

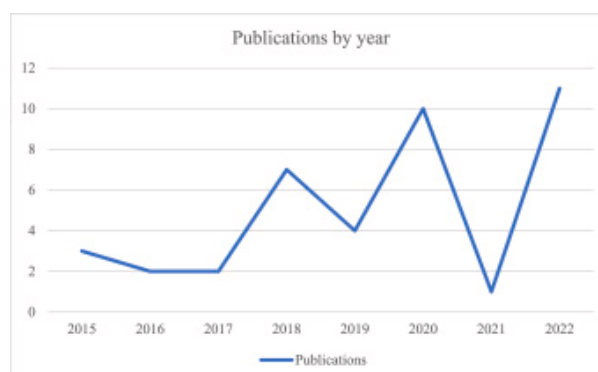


Figure 9: Publications by year. (source: reference (Ratinho & Martins, 2023)^[1])

Study from (Nation)	N
Spain	10
United States of America	7
Turkey	4
China	3
Germany	2
Saudi Arabia	2
Jamaica	1
Canada	1
Lithuania	1
Ireland	1
Singapore	1
Ecuador	1
Serbia	1
Taiwan	1
Belgium	1
Hong Kong	1
Finland	1
United Arab	1
Total = 17 Countries	Total of Papers = 40

Table 10: Countries of the publications (n = 17). (source: reference (Ratinho & Martins, 2023)^[1])

5.2. Sampling Techniques

In the careful selection of sampling techniques for the investigation into the effects of enhancing the school environment on student motivation, specific criteria were meticulously established to

guarantee the relevance and accuracy of the data collected. The inclusion criteria focused on quantitative studies carried out in English, with a particular emphasis on exploring elements of gamification and assessing motivational factors such as self-determination, self-efficacy, and autonomy. Furthermore, the samples were required to consist of students in high school or higher education settings within school or academic environments.

Conversely, exclusion criteria were applied to filter out irrelevant findings. These excluded literature reviews, qualitative studies, theses, books, and studies that did not relate to motivational factors or educational contexts. Samples that did not align with high school or higher education settings, studies not published in English, and research solely centered on educational games or simulations were also disregarded.

By adhering rigorously to these stringent inclusion and exclusion criteria during the sampling process, the study aimed to collect data directly addressing the research objectives concerning the influence of enhancing the school environment on student motivation. Through this systematic approach to sampling techniques, the study aimed to ensure that only pertinent and high-quality studies were included in the analysis corpus for a thorough exploration of the correlation between enhancements in school environment and student motivation. See reference (Ratinho & Martins, 2023)^[1].

Exclusion criteria	N = 467
Literature reviews	58
Not gamification in learning contexts	155
Motivational aspects of gamification not explored	154
Higher education or high school samples not included	60
Not published in English language	17
Use other forms of educational games [e.g., game-based learning; serious-games; simulations]	23

Table 11: Justification for excluded articles. (source: reference (Ratinho & Martins, 2023)^[1])

Database name	# Results for initial search on "personalized learning"	Main journals listed (#journal articles)
EBSCOhost	4372	• Computers & Education (130)
• Journal of Educational Technology & Society (72)		
• Educational Technology Research and Development (53)		
• Interactive Learning Environments (48)		
• Computers in Human Behavior (43)		
• International Journal of Emerging Technologies in Learning (36)		
• British Journal of Educational Technology (33)		
• Journal of Computer Assisted Learning (33)		
Scopus	1826	• Computers and Education (18)
• Computers in Human Behavior (10)		
• Educational Technology Research and Development (10)		

Database name	# Results for initial search on Main journals listed (“personalized learning”)	#journal articles)
• Education and Information Technologies (9)		
• Interactive Learning Environments (8)		
Science Direct	796	• Computers and Education (121)
• Procedia-Social and Behavioral Science (80)		
• Computers in Human Behavior (68)		
• Procedia Computer Science (58)		
Web of Science	451	• International Journal of Emerging Technologies in Learning (30)
• Computers Education (18)		
• Educational Technology Society (16)		
• Computers in Human Behavior (10)		
• Educational Technology Research and Development (10)		
IEEE Xplore	426	• Conference Proceedings (398)
• IEEE Access (7)		
• IEEE Transactions on Learning Technologies (4)		
• IBM Journal of Research and Development (2)		
• IEEE Transactions on Emerging Topics in Computing (2)		
JSTOR	241	• Educational Technology & Society (102)
• Educational Technology (32)		
• Educational Technology Research and Development (29)		

[Table 12](#): The search results for "personalized learning" for selected databases (source: reference (Shemshack & Spector, 2020)^[18])

6. Data Analysis

6.1. Interview Findings with Students, Teachers, and Administration

The feedback gathered from interviews with students, teachers, and the administration at Kharbatha Al-Misbah Primary School for Boys provided valuable insights into the current condition of the school environment. Students expressed a strong desire for more interactive learning spaces that could boost their engagement and motivation levels. They stressed the necessity of having access to modern educational tools and technology to aid in their academic development. Teachers highlighted the importance of receiving professional development opportunities to enhance their teaching methods and create a more dynamic learning atmosphere. The administration acknowledged the difficulties in maintaining the school's infrastructure and committed to exploring ways to improve it for the benefit of both students and educators. In essence, the interviews emphasized the crucial role that enhancing the school environment plays in fostering student motivation. By addressing physical elements such as classroom layout

and technological resources, as well as psychological aspects like teacher morale and student involvement, Kharbatha Al-Misbah Primary School strives to establish a supportive setting that fosters academic achievement. By collaborating with students, teachers, and administration, positive changes can be implemented to enrich the overall learning experience at the school. See reference (Association, 2021, pages 1-5)^[13].

6.2. Observation Results in the School Environment

The findings gathered through observations at Kharbatha Al-Misbah Primary School for Boys offered valuable insights into the current condition of the school environment. It was clear from the observations that there is a pressing need to enhance the physical infrastructure of the school. The classrooms were overcrowded, lacked essential resources, and were in a state of disrepair. This subpar physical setting has the potential to impede student motivation and involvement in their learning.

Furthermore, the observations shed light on certain psychological factors impacting student motivation. It was noted that students seemed disinterested and lacking in motivation during classroom activities. This could be attributed to a lack of positive reinforcement, support, and encouragement from teachers. Additionally, the social atmosphere within the school appeared to be deficient in creating a sense of belonging and community among students.

In summary, the observations underscored the significance of improving the school environment to enhance student motivation. By addressing issues like crowded classrooms, insufficient resources, teacher support, and social cohesion, it is feasible to establish a more conducive learning setting that fosters student engagement and academic achievement. See references: (Cook-Harvey, 2018, pages 46-50)^[6], (Zhao et al., 2023)^[7].

Variables	Mean	SD	1	2	3	4	5	6	7
1. City	1.479	0.500							
2. Education	1.649	0.477	-0.069						
3. Network equipment	3.601	1.072	0.069	0.214**					
4. Frequency of playing online games	1.023	0.150	0.037	-0.080	0.115 ⁺				
5. Digital educational games	3.222	0.884	0.013	0.007	0.008	0.102 ⁺			
6. Student learning engagement	3.329	0.928	0.049	-0.019	0.059	0.013	0.386**		
7. Digital environment	3.333	0.948	0.010	0.007	-0.010	0.096 ⁺	0.465**	0.468**	
8. Motivation for learning	3.316	0.961	-0.019	-0.029	-0.018	0.135**	0.430**	0.461**	0.498**

Table 13: Means, standard deviations, correlations. (source: reference (Li et al., 2024)^[15])

Items	VIF	Weights
CU1	1.257	0.220*
CU2	1.016	0.724***
CU3	1.273	0.477*

[Table 14](#): Formative measurement model evaluation. (source: reference (Simoes et al., 2022)^[19])

7. Impact of Improving School Environment on Student Motivation

7.1. Student Engagement and Academic Performance

Studies have demonstrated that the atmosphere in a school can greatly impact how engaged students are and their academic achievements. The connection between the school's environment and students' motivation to succeed is vital, as it influences their drive to excel. Previous research has shown that when there is a positive culture in the school, strong relationships on campus, and conducive classroom settings, students are more motivated to perform well. When students feel that expectations are clear, responses are consistent, support is emotional, and there are opportunities for meaningful learning, they tend to have a better opinion of their academic abilities and focus more effectively on tasks.

In addition, the support provided by teachers is key in boosting student motivation and academic performance. Teachers' care, encouragement, and trust can enhance students' engagement with learning and their ability to adapt, particularly for underprivileged children who may lack support at home. Studies indicate that teachers play a significant role in the psychological well-being and growth of students by promoting a positive learning environment and meeting their fundamental emotional needs.

In conclusion, enhancing the school environment by fostering supportive relationships, setting clear expectations, offering adequate resources for learning, and providing teacher support can result in increased levels of student engagement and better academic performance. By concentrating on creating a positive ambiance that nurtures motivation and meets the needs of students, schools can effectively promote student success. See references: (Gbollie & Keamu, 2017)^[2], (Zhao et al., 2023)^[7].

Moderator support ^a	(teacher Effect	BootSE	CI
Conditional indirect effects of school climate on achievement motivation			
-0.882	0.064	0.025	[0.023, 0.120]
-0.438	0.086	0.019	[0.053, 0.127]

Moderator support) ^a	(teacher Effect	BootSE	CI
0.229	0.118	0.016	[0.088, 0.150]
0.562	0.134	0.018	[0.098, 0.170]
0.562	0.134	0.018	[0.098, 0.170]
Conditional direct effects of school climate on achievement motivation			
-0.882	0.072	0.038	[-0.002, 0.146]
-0.438	0.099	0.032	[0.037, 0.161]
0.229	0.140	0.029	[0.082, 0.197]
0.562	0.160	0.032	[0.098, 0.222]
0.562	0.160	0.032	[0.098, 0.222]
Index of moderated mediation			
	Index	BootSE	CI
	0.049	0.021	[0.006, 0.081]

Table 15: The direct and indirect effects of school climate on achievement motivation. (source: reference (Zhao et al., 2023)^[7])

Strategies								
Motivation	Rehearsal	Organizational	Critical thinking	T & S Mgmt	Env. Effort regulation	Peer learning	Help seeking	
<i>Variable</i>								
Intrinsic	.307	.261 ***	.118 ·	.201 ***	.101	.200 ***	.197 ***	
Extrinsic	.007	.119 ·	-.030	-.029	.203 ***	-.190 **	.128 ·	
Task value	.171 **	.266 ***	.070	.156 **	-.002	.069	.094	
Control beliefs	.160 **	.056	.081	.129 ·	.069	.052	.004	
Self-efficacy	.342 ***	.293 ***	.289 ***	.159 **	-.070	.118 ·	.122 ·	
Test anxiety	-.093	-.044	-.057	-.097	.119 ·	-.095	.116 ·	

Table 16: Intercorrelations between Liberian junior and senior high school students' motivational beliefs and strategy use. (source: reference (Gbollie & Keamu, 2017)^[2])

Variables	Model 1	Model 2	Model 3	Model 4
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X→Y	X→M	M→Y	X→M→Y	
Constant	1.431***	1.993***	1.125**	0.700 [^]
City	-0.057	0.072	-0.087	-0.084
Education	-0.053	-0.065	-0.016	-0.030
Network equipment	-0.003	0.050	-0.023	-0.021
Frequency of playing online games	0.580 [^]	-0.150	0.813**	0.635 [^]
Digital games educational	0.458***	0.407***		0.309***
Student Engagement Learn			0.480***	0.366***
R ²	0.195***	0.155***	0.233***	0.300***
F	20.702***	15.748***	25.943***	30.566***

Table 17: Regression results for direct effect model and mediation model. (source: reference (Li et al., 2024)^[15])

7.2. Teacher Satisfaction and Morale

Enhancing the school environment directly affects teacher satisfaction and morale. Research indicates that teachers working in schools with supportive atmospheres report higher levels of job satisfaction and overall well-being. When teachers feel appreciated, listened to, and supported at work, they are more likely to be motivated, engaged, and committed to their profession. Conversely, schools lacking adequate infrastructure, resources, and facing high levels of stress can lead to decreased teacher morale and job dissatisfaction.

Studies have emphasized the crucial role of school leadership in creating a positive working environment for teachers. Principals are essential in providing opportunities for professional growth, fostering collaboration among staff members, and ensuring that teachers' needs are addressed. When school leaders prioritize the well-being of their staff and establish a culture of trust and respect, teachers are more inclined to feel motivated and content in their roles.

Moreover, research has indicated that factors like school size can also influence teacher satisfaction. Smaller schools tend to promote closer relationships among colleagues, fostering a sense of community and belonging. This feeling of connection can contribute to higher levels of teacher satisfaction and morale.

In summary, enhancing school environments is vital for boosting teacher satisfaction and morale. By focusing on supportive leadership practices, investing in professional development opportunities, and cultivating a positive work culture, schools can create an atmosphere where teachers feel appreciated, inspired, and empowered to impact their students' lives positively. See references: (Pont et al., 2008, pages 51-55)^[12], (Darling-Hammond et al., 2019)^[4].

8. Recommendations for Enhancing the School Environment

8.1. Physical Changes in Infrastructure

When it comes to improving the school environment to boost student motivation, one must consider the importance of making physical changes to the infrastructure that can positively influence students' academic success and overall wellness. Studies have demonstrated that schools with well-constructed facilities, access to essential services, good indoor air quality, and opportunities for outdoor activities can greatly enhance student attendance and health. For example, in environmentally friendly schools, educators have expressed higher satisfaction with their work environments, lower rates of absenteeism among both students and staff, and improved academic achievements compared to schools without green initiatives.

Furthermore, the appearance of school buildings plays a significant role in shaping students' perceptions of their worth and future possibilities. Schools that are well-kept, visually appealing, and integrated into their surrounding communities foster a sense of pride among students and contribute to a positive school atmosphere. The British Commission for Architecture stresses the significance of designing schools that align with their values and identity, fostering pride among students and community members.

In addition, having convenient access to school facilities is crucial for fostering positive academic outcomes. Elements such as smaller school sizes, strategically located campuses for reasonable commuting distances, smaller class sizes, efficient use of space scheduling, among others, are essential factors that contribute to student achievement. By prioritizing safe and conducive learning environments through effective infrastructure planning and execution, schools can establish settings that support student motivation, engagement, and academic success.

Overall, improving the physical infrastructure of schools is vital for creating environments that enhance student motivation. By concentrating on sound architectural design, access to essential services, indoor air quality, aesthetics, safety protocols, and community involvement, schools can significantly impact student well-being and academic performance. See references: (Barrett et al., 2018, pages 51-55)^[11], (Barrett et al., 2018, pages 61-65)^[11], (Barrett et al., 2018, pages 31-35)^[11].

9. Conclusion

To sum up, the investigation into the impact of enhancing the school environment on student motivation has illuminated the crucial role that school atmosphere can play in student academic achievements. Positive school climates, characterized by active participation, safety, and a supportive ambiance, have been linked to increased attendance rates, test scores, promotion rates, and graduation rates. Conversely, negative school atmospheres can result in decreased levels of achievement and create opportunities for violence and harassment. It is imperative to establish conducive learning conditions that cater to students' social and academic needs to cultivate a favorable school environment conducive to all students' success. Moreover, studies emphasize the advantages of small schools with personalized structures that enhance student engagement and academic performance levels.

The results from this analysis underscore the necessity for schools to prioritize creating a positive environment that nurtures student motivation and participation. By implementing strategies that encourage cultural diversity, counter stereotype threats, and offer customized learning experiences through digital technologies, schools can improve student contentment, academic results, and overall welfare. Looking ahead, it is vital for educational leaders to continue exploring methods to enhance school climate and support students in realizing their full potential. See references: (Klevan, 2021)^[8], (School Climate Improvement, 2024)^[3], (Cook-Harvey, 2018, pages 31-35)^[6].

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