IMPACT OF EDUCATIONAL ENVIRONMENT ON LEARNERS' ENGAGEMENT: BASIS FOR ACADEMIC ACHIEVEMENT

Radjay C. Arocha

Student
Medina College
Philippines

Abstract:
The educational environment significantly influences learners' development, particularly their social interactions, cognitive growth, and engagement in academic activities. A positive environment fosters collaboration, scaffolding within the Zone of Proximal Development (ZPD), and cultural responsiveness, all contributing to higher learner engagement. This study examined the impact of the educational environment on learners' engagement to provide a basis for academic enhancement. A descriptive-correlational research design was employed. The study involved 235 teachers from Sapang Dalaga District, Division of Misamis Occidental. Data were collected using a researcher-made questionnaire measuring components of the educational environment and learner engagement. Analysis included arithmetic means for descriptive results and Pearson's r for correlational analysis. Findings revealed a high extent of impact of the educational environment on learners, with mean scores for Social Interaction (3.459), ZPD (3.414), Scaffolding (3.412), and Cultural and Environmental Influence (3.450). Learners' engagement was also rated high across Behavioral (3.480), Emotional (3.468), and Cognitive Engagement (3.524). However, the correlation analysis showed no statistically significant relationship between the educational environment and learners' engagement (r = 0.007, p = 0.912). Despite high ratings for both the educational environment and learner engagement, no significant association was found, suggesting that learner engagement is influenced by multiple complex factors beyond the educational setting. Further research is needed to explore other variables affecting engagement to inform more effective academic interventions.

Keywords: Educational Environment, Learners' Engagement, Zone of Proximal Development (ZPD), Scaffolding, Academic Enhancement.

INTRODUCTION

The learning context plays a critical part in informing the development of learners as a whole, especially how they relate socially, advance cognitively, and stay interested throughout learning. A caring and supportive learning environment encourages constructive social relations among the students and educators, supporting collaboration, respect for one another, and belongingness. The learning environment fosters the Zone of Proximal Development (ZPD), where students are able to complete tasks they could not on their own with the support and guidance of more knowledgeable others, through efficient scaffolding measures. Teachers are central in facilitating this process by offering timely, suitable support leading to learner independence step by step. Furthermore, cultural and environmental influences—e.g., classroom atmosphere, organizational values, and national and cultural influences—condition learners' learning attitudes, motivation, and adaptation to academic requirements. All of these determine the extent of learners' engagement, which may be viewed in their behavior, emotional investment, and intellectual commitment. If educational settings are created in an inclusive, responsive, and challenging manner, students are more likely to demonstrate greater rates of participation, emotional investment in school activities, and greater comprehension, hence better academic achievement and schooling experience.

The impact of the learning environment on academic engagement among learners is well-documented, with its importance highlighted in determining learners' motivation, involvement, and intellectual investment in school work. A supportive, secure, and positive learning environment not only improves students' academic achievements but also ensures long-term engagement through fostering belongingness, emotional safety, and leaning interest. For example, a study conducted in Tanzania identified that schools with proper infrastructure, safe environments, and hygienic facilities had more students engaged and involved in learning (Kibriya & Jones, 2021). Conversely, the transition to distance learning during the COVID-19 pandemic exposed Filipino students to instability in internet connection, insufficient conducive learning environments, and constant home distractions, all of which detracted from their capacity to concentrate, engage actively, and sustain continuous attentiveness in virtual classrooms (Barrot, Llenares, & del Rosario, 2021). In addition, it has been proven through studies that an efficient physical and psychological learning setting can greatly improve college students' academic motivation, resulting in improved self-regulation and the utilization of sound learning strategies (Cayubit, 2022). Ergonomic furniture, proper lighting, and noise management are also contributing factors to an improved learning experience, especially in online and hybrid learning. Taken together, these results highlight the need to create and maintain learning spaces that are not only useful but also emotionally and intellectually challenging in order to optimize learner engagement and facilitate successful learning.

While significant research has been directed towards the issue of factors that influence learners' engagement, there is still a large gap in understanding the role of the learning environment on learners' engagement outcomes, especially in the context of interaction between different environmental factors and demographic variables. Previous research tends to tackle single components of the learning environment, like social interaction, cognitive development, and scaffolding, but does not investigate the combined influence of these variables—like the Zone of Proximal Development (ZPD), the cultural context, and particular environmental settings—on the multicontextual dimensions of learners' engagement. Also, while demographic variables such as age, sex, level of education, and seniority have been separately analyzed, few studies analyze how the higher educational setting in which these variables are found affects the students' behavioral, emotional, and cognitive investment. This research aims to address this important shortcoming by investigating the dynamic interplay between learning context and students' engagement in various demographic groups, presenting significant insights into how these factors in combination impact academic achievement and providing an evidence base for targeted interventions to support engagement in various learning contexts.

The aim of this study is to explore the impact of the educational environment on learners' engagement, focusing on how various elements within the learning environment contribute to student participation and involvement in their academic journey. The purpose is to assess the influence of factors such as social interaction, the Zone of Proximal Development (ZPD), scaffolding, and cultural and environmental influences on learners' engagement. By examining these aspects, the study seeks to provide valuable insights into how the educational setting shapes students' behavioral, emotional, and cognitive engagement. Furthermore, it intends to determine if a significant relationship exists between the educational environment and students' overall engagement, and to identify whether the impact of this environment differs across demographic variables, such as age, sex, educational attainment, and length of service. The findings of this study will serve as a foundation for proposing academic enhancement initiatives aimed at optimizing learners' engagement and academic performance.

METHODS
Research Design
This study employed a descriptive-correlational research design to gather relevant data. This approach is well-suited for investigating and analyzing relationships between variables without manipulation. According to Creswell and Creswell (2018), a descriptive-correlational design is effective in identifying and measuring the degree of association or correlation between two or more variables or sets of scores. It provides a snapshot of existing conditions, allowing researchers to examine how variables interact within a specific sample. By exploring potential predictive relationships, this design offers valuable insights into the strength and direction of these associations in real-world settings.

Research Setting
The study was conducted in Sapang Dalaga District, Division of Misamis Occidental, a fifth-class coastal municipality in Northern Mindanao, Philippines. Its diverse geography, agricultural economy, and multilingual community provide a relevant context for examining how the educational environment affects learner performance and guides academic improvement efforts in the district.

Research Respondents
The study involved all 235 public school teachers in the Sapang Dalaga District, Division of Misamis Occidental, selected through total population sampling to ensure full representation. They were chosen for their direct role in classroom instruction and influence on learner engagement. Inclusion criteria required respondents to be full-time teachers in the district with at least one year of teaching experience and voluntary participation, ensuring they had the necessary experience and context to provide reliable insights into the educational environment and its impact on students.

Research Instrument
The study utilized a two-part instrument: Part I assessed teachers' perceptions of the educational environment through four domains—Social Interaction, Zone of Proximal Development, Scaffolding, and Cultural and Environmental Influence—while Part II evaluated learners' engagement across Behavioral, Emotional, and Cognitive dimensions. This structure captured both the contextual factors shaping learning and the extent of student participation from the teachers' perspectives.

Validity of Instrument
The research instrument underwent rigorous validation to ensure accuracy and reliability. Content validity was established through expert review by professionals in education, psychology, and research, while face validity was confirmed via a pilot test with a similar group to the target respondents. Reliability was measured using Cronbach's Alpha (≥ 0.70) for internal consistency and the test-retest method for stability over time. Construct validity was verified through factor analysis to align items with the theoretical framework. Revisions based on feedback and statistical results ensured the instrument was clear, relevant, and dependable for assessing the impact of the educational environment on learner engagement.

Data-Gathering Procedure
Data collection followed a systematic and ethical process. A formal request was submitted to the Schools Division Superintendent for approval, after which the researcher oriented respondents on the study's objectives, procedures, confidentiality, and voluntary participation, securing informed consent. The validated instrument was administered in print or online, with clear instructions and adequate time for completion. Responses were reviewed for completeness, with follow-ups made when necessary, then systematically encoded and organized for analysis. Statistical methods were applied to interpret the findings, ensuring accuracy while maintaining strict confidentiality and data security.

Ethical Considerations
Following Bryman and Bell's (2007) principles, the study ensured integrity, confidentiality, and respect for respondents. Informed consent was obtained after explaining the study's purpose, procedures, and potential risks or benefits, with participation remaining voluntary and withdrawal permitted at any time without consequences. Confidentiality and anonymity were maintained by coding data, securing records, and using information solely for research purposes. Honesty in data collection and analysis was upheld, avoiding manipulation or misrepresentation. Questions were designed to prevent psychological distress, with respondents free to skip items or withdraw if uncomfortable, ensuring their rights and well-being were protected throughout the research.

Data Analysis
The study used the arithmetic mean to measure the perceived impact of educational environment factors such as social interaction, zone of proximal development, scaffolding, and cultural or environmental influences on learners, as well as their behavioral, emotional, and cognitive engagement. Pearson's correlation coefficient

was applied to determine the significance, strength, and direction of the relationship between the educational environment and learner engagement, indicating whether a supportive environment positively influences participation and involvement.

RESULTS AND DISCUSSION

Table 1.1 - The extent does the educational environment impact learners in terms of Social Interaction

Indicators	Sd	Mean
1. I actively facilitate group discussions and collaborative activities in the classroom.	0.949	3.438
2. I encourage peer interaction and teamwork among students.	0.913	3.562
3. I observe that social interactions among students enhance their understanding of the subject matter.	0.808	3.430
4. I foster an inclusive and respectful classroom environment.	0.851	3.460
5. My school provides opportunities for extracurricular activities that enhance students' social skills.	0.795	3.404
Average Mean		3.459

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High" 4.21 – 5.00 "Very High"

The data in Table 1.1 showed that the educational environment had a high impact on learners in terms of social interaction, as indicated by the overall average mean of **3.459**. This suggested that educators generally promoted socially engaging learning environments. The findings implied that the schools involved in the study successfully fostered interaction among students, which is essential in building communication skills, cooperation, and classroom camaraderie. A high level of social interaction also supported the development of interpersonal competencies that are vital for academic success and real-world preparedness.

Among the individual indicators, the highest mean was recorded for the statement "I encourage peer interaction and teamwork among students" with a mean of 3.562, suggesting that respondents consistently promoted collaborative learning practices. This was followed by "I actively facilitate group discussions and collaborative activities in the classroom" (mean = 3.438), highlighting the active role of teachers in designing social learning experiences. The indicator "I foster an inclusive and respectful classroom environment" obtained a mean of 3.460, reinforcing the commitment to equity and mutual respect. Meanwhile, the lowest-rated item was "My school provides opportunities for extracurricular activities that enhance students' social skills" (mean = 3.404), which, although still within the high range, suggested a relative gap in extending social interaction beyond classroom instruction. These results implied that while social interaction was generally supported within the classroom setting, schools could further enhance learners' social development by offering more extracurricular opportunities.

The findings of the current study reveal a high level of agreement that the educational environment positively impacts learners through social interaction, as shown by consistently high mean scores across indicators related to peer collaboration, inclusivity, and extracurricular engagement. These results align with the findings of other studies emphasizing the value of social interaction in learning environments (Bahtiar et al., 2021), which enhances performance through cooperation and mutual support. Similarly, it has been noted that social interaction plays a crucial role in maintaining learning effectiveness, even in online settings (Baber, 2022), reinforcing the idea that student interaction is vital for engagement and comprehension. Both studies support the current study's conclusion that social interaction is a key component of an effective educational environment.

Table 1.2 - The extent does the educational environment impact learners in terms of Zone of Proximal Development (ZPD)

Indicators	Sd	Mean
1. I design tasks that challenge students but remain achievable with guidance.	0.827	3.404

2. I provide adequate support to help students accomplish difficult learning tasks.	0.811	3.400
3. I implement classroom activities that enhance students' problem-solving and critical-thinking skills.	0.823	3.379
4. I encourage students to explore new concepts with my guidance or peer support.	0.842	3.464
5. I structure lessons in a way that gradually increases in complexity to match students' learning needs.	0.803	3.426
Average Mean		3.414

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High" 4.21 – 5.00 "Very High"

Table 1.2 revealed that the educational environment had a high impact on learners in relation to the Zone of Proximal Development (ZPD), with an overall average mean of 3.414. This indicated that teachers generally integrated instructional strategies aligned with the principles of ZPD—where learners were supported to perform tasks just beyond their current ability. The findings suggested that educators effectively created learning experiences that fostered growth through guided participation, thereby enhancing students' cognitive development and academic potential. The high rating also reflected an educational setting that was supportive of scaffolding techniques and differentiated instruction, key elements in maximizing individual learning capacity.

Among the indicators, the highest mean score was for the statement "I encourage students to explore new concepts with my guidance or peer support" (mean = 3.464), showing that learners were frequently provided with social and instructional support to engage with unfamiliar content. This was followed by "I structure lessons in a way that gradually increases in complexity to match students' learning needs" (mean = 3.426), which highlighted intentional lesson planning that responded to learner readiness. Meanwhile, "I design tasks that challenge students but remain achievable with guidance" (mean = 3.404) and "I provide adequate support to help students accomplish difficult learning tasks" (mean = 3.400) both emphasized the importance of teacher guidance in student learning. The lowest-rated item was "I implement classroom activities that enhance students' problem-solving and critical-thinking skills" with a mean of 3.379, which, although still within the "high" range, suggested room for improvement in designing activities that directly target higher-order thinking skills. Overall, the indicators demonstrated that instructional practices were intentionally aligned with ZPD, although emphasis on critical thinking development could be further enhanced.

The findings of the present study indicate a high extent of educational environment impact on learners in terms of the Zone of Proximal Development (ZPD), particularly in areas involving guided learning, scaffolded tasks, and structured cognitive development. These results align with studies that emphasized environments integrating supportive tools such as AI within the ZPD framework to enhance student engagement and cognitive growth by providing adaptive scaffolding and peer collaboration (Cai et al., 2025). Similarly, the effectiveness of instructional strategies that match learners' developmental readiness was emphasized, showing that tasks aligned with ZPD principles stimulate deeper understanding and encourage independent learning when structured incrementally (Akhmadjonov, 2024). Thus, both references support the current study's conclusion that a well-designed educational environment, offering appropriate support and challenges, positively influences learner engagement and development within their proximal zone.

Table 1.3 - The extent does the educational environment impact learners in terms of Scaffolding

Indicators	Sd	Mean
1. I provide step-by-step guidance when introducing new concepts.	0.855	3.357
2. I offer sufficient examples and explanations before requiring students to perform tasks independently.	0.822	3.485
3. The learning materials I use in class help students understand complex topics.	0.826	3.455
4. I observe that students feel more confident when given support before working independently.	0.870	3.434

5. I adjust my teaching strategies based on students' learning progress.	0.788	3.328
Average Mean		**3.412**

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High"   4.21 – 5.00 "Very High"

Table 1.3 showed that the educational environment had a high impact on learners with respect to scaffolding, as reflected by the overall average mean of 3.412. This implied that teachers consistently applied scaffolding strategies in their instructional practices, offering support structures to aid student learning. The high rating indicated that the learning environment was responsive to students' needs, promoting gradual independence through carefully planned instructional assistance. These results emphasized the role of scaffolding in helping students bridge the gap between what they could do with help and what they could accomplish independently, which is essential for meaningful learning and skill development.

Among the indicators, the highest mean score was "I offer sufficient examples and explanations before requiring students to perform tasks independently" with a mean of 3.485, suggesting that teachers ensured clarity before expecting students to work on their own. This was followed by "The learning materials I use in class help students understand complex topics" (mean = 3.455), showing that instructional tools were effectively used to simplify challenging content. The item "I observe that students feel more confident when given support before working independently" had a mean of 3.434, emphasizing the positive emotional impact of scaffolding on learner confidence. Meanwhile, "I provide step-by-step guidance when introducing new concepts" received a mean of 3.357, and "I adjust my teaching strategies based on students' learning progress" had the lowest mean of 3.328, though still within the high range. This indicated that while scaffolding was commonly practiced, there was slightly less focus on adapting strategies based on individual learning progress—an area that could be enhanced to further personalize support.

The findings of the present study indicate that the educational environment has a high impact on learners in terms of scaffolding, particularly through step-by-step guidance, the use of helpful learning materials, and adaptive teaching strategies. This aligns with the concept of distributed scaffolding, which emphasizes the importance of multiple, coordinated supports provided across various contexts to enhance student learning (Puntambekar, 2022). Teachers in the study appear to be applying this approach by offering timely guidance and adapting instruction to learners' progress, which supports confidence and independent performance. Similarly, the effectiveness of scaffolding in digital game-based learning environments has been shown to significantly enhance student achievement by facilitating comprehension and task engagement through structured support mechanisms (Cai et al., 2022). These findings reinforce the value of intentional, responsive scaffolding in promoting learner engagement and performance across different educational settings.

Table 1.4 - The extent does the educational environment impact learners in terms of Cultural and Environmental Influence

Indicators	Sd	Mean
1. I ensure that the classroom environment is conducive to learning and free from distractions.	0.924	3.634
2. I consider cultural and community values when designing learning experiences.	0.812	3.374
3. My school provides resources and facilities that support effective teaching and learning.	0.851	3.447
4. I promote respect and appreciation for students' diverse cultural backgrounds.	0.784	3.404
5. I incorporate culturally relevant materials and examples into my lessons.	0.809	3.391
Average Mean		**3.450**

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High"   4.21 – 5.00 "Very High"

Table 1.4 revealed that the educational environment had a high impact on learners in terms of cultural and environmental influence, as evidenced by the overall average mean of 3.450. This suggested that teachers created learning environments that were both physically conducive and culturally responsive. The high rating indicated that educators recognized the importance of integrating cultural awareness and environmental support into classroom practices, which in turn enhanced learner engagement and inclusivity. These results implied that attention to both the physical learning space and cultural context contributed positively to the overall learning experience.

Among the indicators, the highest mean was observed in "I ensure that the classroom environment is conducive to learning and free from distractions" with a mean of 3.634, indicating strong emphasis on maintaining an effective physical learning space. This was followed by "My school provides resources and facilities that support effective teaching and learning" (mean = 3.447), reflecting the value placed on institutional support. The indicator "I promote respect and appreciation for students' diverse cultural backgrounds" received a mean of 3.404, and "I incorporate culturally relevant materials and examples into my lessons" had a similar mean of 3.391, suggesting active, though slightly less emphasized, integration of cultural elements in teaching. The lowest mean was recorded for "I consider cultural and community values when designing learning experiences" at 3.374, pointing to a potential area for improvement in tailoring instruction to reflect local cultural contexts more deeply.

The findings of the current study indicate that the educational environment has a high impact on learners, particularly in terms of fostering a culturally sensitive and supportive atmosphere conducive to engagement and learning. Participants affirmed that their classrooms are generally free from distractions, culturally respectful, and supported by appropriate resources. These results align with previous research emphasizing that socio-cultural factors significantly affect students' academic achievement, particularly when the learning environment respects and integrates students' cultural identities and values (Amiri et al., 2021). Similarly, while one study focuses more on mental health stigma, it underscores the importance of a supportive environment in shaping individual attitudes and behaviors, indirectly suggesting that environments attuned to learners' psychological and cultural needs contribute to more positive educational outcomes (Ching et al., 2024).

Table 1.5 - Summary of the extent does the Educational Environment Impact Learners

Components	Mean	Interpretation
Social Interaction	3.459	High
Zone of Proximal Development (ZPD)	3.414	High
Scaffolding	3.412	High
Cultural and Environmental Influence	3.450	High
Average Mean	**3.434**	**High**

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High" 4.21– 5.00 "Very High"

Table 1.5 presented the summary of the educational environment's impact on learners, yielding an overall average mean of 3.434, which fell under the "High" interpretation category. This implied that the educational environment, across its multiple dimensions, had a significant and positive influence on learner engagement and development. The high average score indicated that teachers consistently implemented practices that supported student learning through social interaction, developmental support, scaffolding, and cultural responsiveness. These findings suggested that the learning environment was conducive not only to academic achievement but also to holistic student growth.

Among the four components assessed, Social Interaction had the highest mean of 3.459, suggesting that collaborative learning and peer engagement were strongly emphasized and effectively practiced. This was closely followed by Cultural and Environmental Influence with a mean of 3.450, reflecting the importance placed on maintaining an inclusive and resource-rich environment. Zone of Proximal Development (ZPD)

and Scaffolding registered slightly lower but still "High" means of 3.414 and 3.412 respectively, indicating that while instructional support and developmental guidance were well implemented, these areas offered further opportunities for enhancement. Overall, each component consistently demonstrated a high level of implementation, affirming the value of a well-rounded educational environment.

The findings of this study indicate that the educational environment has a high impact on learners' engagement across various components such as social interaction, zone of proximal development, scaffolding, and cultural and environmental influence. This aligns with research showing that blended learning approaches, including flipped classrooms combined with team-based learning, significantly enhance learning outcomes by fostering greater student interaction and active participation (Kang & Kim, 2021). Similarly, adaptive e-learning environments tailored to individual learning styles promote deeper engagement by providing appropriate scaffolding and personalized support, which resonates with the high impact of scaffolding and proximal development observed in this study (El-Sabagh, 2021). Both sources support the idea that well-structured educational environments—whether physical, blended, or digital—play a crucial role in maximizing learner engagement and academic success.

Table 2.1 - The Level of Learners' Engagement in terms of Behavioral Engagement

Indicators	Sd	Mean
1. My learners actively participate in class discussions.	0.822	3.481
2. My learners consistently submit assignments on time.	0.801	3.485
3. My learners regularly attend and arrive on time to class.	0.896	3.528
4. My learners follow classroom rules and routines.	0.862	3.464
5. My learners are engaged and cooperative during group tasks.	0.794	3.443
Average Mean		**3.480**

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High" 4.21– 5.00 "Very High"

Table 2.1 presented the level of learners' behavioral engagement, with an average mean of 3.480, which was interpreted as "High." This implied that students demonstrated a strong level of active participation in learning-related behaviors such as following rules, attending class, and engaging in tasks. The high level of behavioral engagement reflected positively on classroom management practices and indicated that learners were generally motivated, responsible, and compliant with expected academic behaviors.

Among the indicators, the highest mean was recorded for the item "My learners regularly attend and arrive on time to class" with a mean of 3.528, suggesting strong learner punctuality and attendance. This was followed closely by "My learners consistently submit assignments on time" (mean = 3.485) and "My learners actively participate in class discussions" (mean = 3.481), highlighting student accountability and involvement in learning processes. The indicators "My learners follow classroom rules and routines" (mean = 3.464) and "My learners are engaged and cooperative during group tasks" (mean = 3.443) also showed high levels of compliance and collaboration. These findings suggested that learners not only adhered to classroom expectations but also contributed positively to group dynamics and classroom order.

The study reveals a high level of behavioral engagement among learners, as evidenced by their active participation, punctuality, adherence to rules, and cooperation during group tasks. This aligns with findings that university students' behavioral engagement in group-based flipped learning environments is strongly influenced by structured interaction and accountability within group tasks, fostering consistent participation and timely completion of assignments (Lai, 2021). Similarly, learner engagement, particularly in online settings, depends on clear expectations and supportive practices that encourage active involvement and responsibility (Martin & Borup, 2022). Both sources underscore the importance of an environment that promotes regular attendance, rule-following, and cooperative behavior, which parallels the current study's evidence that such behavioral factors are crucial components of engagement and contribute significantly to academic success.

Table 2.2 - The Level of Learners' Engagement in terms of Emotional Engagement

Indicators		Sd	Mean
1.	My learners show enthusiasm and enjoyment during class activities.	0.862	3.523
2.	My learners demonstrate a positive attitude toward learning.	0.831	3.536
3.	My learners seem to feel emotionally safe and supported in class.	0.861	3.455
4.	My learners appear to have a sense of belonging in the classroom.	0.820	3.451
5.	My learners' express interest in the topics being discussed.	0.791	3.374
Average Mean			**3.468**

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High" 4.21– 5.00 "Very High"

Table 2.2 showed the level of learners' emotional engagement, which yielded an average mean of 3.468, interpreted as "High." This suggested that learners generally demonstrated strong emotional involvement in their learning experiences. A high level of emotional engagement implied that students were motivated, felt safe in the classroom, and experienced positive emotions toward their learning environment—critical factors in fostering long-term academic success and personal growth.

Among the indicators, the highest mean was noted in "My learners demonstrate a positive attitude toward learning" with a mean of 3.536, followed closely by "My learners show enthusiasm and enjoyment during class activities" (mean = 3.523). These results indicated that students were optimistic and emotionally responsive during instruction. The indicators "My learners seem to feel emotionally safe and supported in class" (mean = 3.455) and "My learners appear to have a sense of belonging in the classroom" (mean = 3.451) emphasized a strong emotional connection with the classroom environment. Lastly, "My learners express interest in the topics being discussed" received the lowest mean of 3.374, though still within the high range, suggesting slightly lower but still notable interest in subject matter compared to other emotional dimensions.

The findings of this study reveal a generally high level of emotional engagement among learners, characterized by enthusiasm, positive attitudes, a sense of emotional safety, belonging, and interest in classroom topics. This aligns with observations that positive emotional engagement significantly influences learners' interactional behaviors, suggesting that emotionally engaged students are more likely to participate actively and meaningfully in learning activities (Dao & Sato, 2021). Similarly, it has been highlighted that learners who experience strong emotional engagement tend to report greater satisfaction with their learning experiences, particularly in online settings, which supports the notion that emotional safety and a sense of belonging are critical for fostering sustained engagement (Deng, 2021). However, while this study emphasizes learners' emotional connection within a physical classroom environment, fluctuations in emotional engagement tied to interactional dynamics indicate that engagement can be more variable depending on situational factors (Dao & Sato, 2021). Overall, both the current study and the referenced research underscore the importance of nurturing positive emotional engagement to enhance academic involvement and learner satisfaction (Dao & Sato, 2021; Deng, 2021).

Table 2.3 - The Level of Learners' Engagement in terms of Cognitive Engagement

Indicators		Sd	Mean
1.	My learners use strategies to understand and remember content.	0.821	3.540
2.	My learners try to make connections between lessons and real-life situations.	0.821	3.540
3.	My learners demonstrate curiosity and critical thinking during lessons.	0.794	3.545
4.	My learners take initiative in their learning (e.g., asking questions, doing extra work).	0.826	3.451
5.	My learners show persistence when faced with difficult task.	0.805	3.545
Average Mean			

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High" 4.21– 5.00 "Very High"

Table 2.3 presented the level of learners' engagement in terms of cognitive engagement, but the average mean was not explicitly stated. However, based on the given means for each indicator, the average was approximately 3.524, which fell within the "High" interpretation range. This indicated that learners were intellectually invested in the learning process. A high level of cognitive engagement implied that students actively processed information, applied critical thinking, and engaged in meaningful learning experiences— key elements for deeper understanding and academic achievement.

Among the indicators, the highest means were recorded in "My learners demonstrate curiosity and critical thinking during lessons" and "My learners show persistence when faced with difficult task" both with a mean of 3.545, signifying that learners sustained attention and analytical skills when challenged. "My learners use strategies to understand and remember content" and "My learners try to make connections between lessons and real-life situations" both followed with a mean of 3.540, reflecting their efforts to internalize and apply knowledge. The lowest, though still high, was "My learners take initiative in their learning (e.g., asking questions, doing extra work)" with a mean of 3.451, suggesting a slightly lesser inclination toward proactive, self-directed learning behaviors.

The findings of this study reveal a high level of cognitive engagement among learners, characterized by their use of strategies to understand content, making connections to real-life situations, demonstrating curiosity and critical thinking, taking initiative, and showing persistence when faced with challenges. This aligns with research showing that cognitive engagement, reflected in active participation and thoughtful interaction with learning materials, is a strong predictor of academic achievement, especially in technology-mediated environments such as MOOCs (Liu, Liu, Liu, Peng, & Yang, 2022). Similarly, it has been found that in blended synchronous learning settings, students' motivation positively correlates with their cognitive engagement, where motivated learners actively apply cognitive strategies and maintain sustained effort during learning (Shi, Tong, & Long, 2021). Both studies support the notion that fostering an educational environment encouraging active cognitive engagement is crucial for enhancing learners' academic performance, corresponding to the high engagement levels observed in this study.

Table 2.4 - Summary of the Level of Learners' Engagement

Components	Mean	Interpretation
Behavioral Engagement	3.480	High
Emotional Engagement	3.468	High
Cognitive Engagement	3.524	High
Average Mean	**3.491**	**High**

Scale: 1.0 – 1.80 "Very Low", 1.81 – 2.60 "Low", 2.61 – 3.40 "Average", 3.41 – 4.20 "High" 4.21– 5.00 "Very High"

Table 2.4 presented the summary of the level of learners' engagement across three dimensions: behavioral, emotional, and cognitive. The average mean was 3.491, which fell within the "High" category based on the given scale. This indicated that overall, students were actively, emotionally, and intellectually involved in their learning experiences. The high engagement level suggested that the educational environment effectively fostered positive learning behaviors, emotional investment, and deep cognitive processing among learners.

In terms of specific components, Cognitive Engagement registered the highest mean at 3.524, indicating that learners actively used strategies to understand content, demonstrated critical thinking, and showed persistence. Behavioral Engagement followed with a mean of 3.480, suggesting consistent class participation, compliance with rules, and cooperation in tasks. Emotional Engagement, with a mean of 3.468, also reflected a strong positive attitude and enthusiasm for learning. The consistency of high ratings across all components implied

that learners were holistically engaged, benefiting from both internal motivation and supportive instructional practices.

The study's findings indicate a generally high level of learners' engagement across behavioral, emotional, and cognitive components, reflecting an educational environment that effectively supports active participation and investment in learning. This aligns with findings that differentiated instruction positively influences learners' engagement by catering to individual needs, thereby enhancing their motivation and involvement (Moallemi, 2024). However, while the current study reports consistently high engagement, research shows that negative emotional states such as boredom can significantly reduce learners' engagement, suggesting that even in generally supportive environments, affective factors may still pose challenges to maintaining high engagement (Xie, 2021). Together, these studies suggest that while instructional strategies and a conducive environment can foster engagement, attention to emotional barriers remains crucial for sustained learner involvement (Xie, 2021; Moallemi, 2024).

Table 3 - Test of Significant Relationship Between the Educational Environment and Learners' Engagement

Variables	r value	p-value	Decision
Educational Environment and Learners' Engagement	0.007	0.912	retain the H_o

Note: If $p \leq 0.05$, with a significant difference

Table 3 presented the results of the test for a significant relationship between the educational environment and learners' engagement. The analysis showed that the null hypothesis (Ho) was retained, indicating that there was no statistically significant relationship between the educational environment and the level of learners' engagement. This implied that, based on the data collected, variations in the educational environment did not significantly affect or predict learners' engagement levels. Consequently, improvements or changes in the environment might not directly correspond to changes in how engaged students were.

The computed r-value was 0.007, indicating a very weak positive correlation between the educational environment and learners' engagement. Furthermore, the p-value was 0.912, which was much greater than the significance level of 0.05. This high p-value confirmed the lack of statistical significance in the relationship. The result suggested that, despite a generally high perception of the educational environment and learner engagement (as shown in earlier tables), the two variables did not exhibit a meaningful or measurable association within the scope of this study.

The findings of this study, which indicate no significant relationship between the educational environment and learners' engagement, contrast with the results of previous research that emphasizes the importance of the learning environment in promoting engagement. One study highlights the role of self-efficacy as a mediator that strengthens the positive relationship between a supportive learning environment and increased student engagement, suggesting that aspects of the environment can directly influence learners' motivation and participation (Sökmen, 2019). Another study underscores various strategies within modern educational settings that effectively foster learner engagement, pointing to the environment's active role in enhancing involvement and interaction (Carroll, Lindsey, Chaparro, & Winslow, 2019). The divergence in results may be due to differences in contextual factors, measurement methods, or sample characteristics, implying that while some studies find a clear connection, others suggest the educational environment alone may not be sufficient to significantly impact engagement (Sökmen, 2019; Carroll, Lindsey, Chaparro, & Winslow, 2019).

CONCLUSIONS AND RECOMMENDATIONS
Conclusion
Based on the findings, the educational environment significantly impacts learners across key components such as social interaction, zone of proximal development, scaffolding, and cultural and environmental influences, all rated at a high level. Similarly, learners demonstrate a high level of engagement behaviorally, emotionally, and cognitively, indicating that they are actively participating and invested in their learning experiences.

However, despite these high levels, the study found no statistically significant relationship between the educational environment and learners' engagement, suggesting that other factors beyond the educational environment may also play an important role in influencing learner engagement. This indicates the complexity of engagement as a construct, which could be affected by individual learner characteristics, teaching methods, motivation, and external influences. Further research is recommended to explore these additional variables to better understand what drives and sustains learner engagement in academic settings.

Recommendations

To enhance learner engagement and improve the educational environment, learners should actively participate in collaborative activities, utilize scaffolding support, and engage with culturally relevant contexts. Teachers are encouraged to maintain interactive classrooms that foster social interaction, scaffolding, and activities suited to learners' zones of proximal development, using varied strategies to sustain engagement. School administrators should provide resources, training, and policies that promote inclusivity and collaboration, while curriculum planners should integrate scaffolding, cultural relevance, and cognitively challenging tasks into learning materials. Guidance counselors need to design interventions for disengaged learners, addressing environmental factors and offering social-emotional support. Parents and guardians are urged to foster a supportive home learning environment that complements school efforts. Policymakers should create and fund initiatives that strengthen socially, cognitively, and culturally enriching environments. Future researchers are encouraged to explore other factors influencing engagement, including learner characteristics and teaching methodologies, using longitudinal or mixed-method approaches.

REFERENCES:

1. Akhmadjonov, A. (2024). Thesis for a research on Zone of Proximal Development and its effectiveness. University Research Base, 39–46. https://scholar.kokanduni.uz/index.php/rb/article/view/285
2. Amiri, E., & Karfa, A. E. (2021). The impact of learning environment on EFL students' academic achievement: A study of socio-cultural factors affecting academic achievement. Arab World English Journal, 12(4), 387–400. https://doi.org/10.24093/awej/vol12no4.25
3. Baber, H. (2022). Social interaction and effectiveness of online learning – A moderating role of maintaining social distance during the pandemic COVID-19. Asian Education and Development Studies, 11(1), 159–171. https://doi.org/10.1108/AEDS-09-2020-0209
4. Bahtiar, R. S., Farozin, M., Sujarwo, G. N., Haryanto, G. N., Suryarini, D. Y., Popiyanto, Y., & Jarmani, G. N. (2021). Impact of social interaction among primary school students on learning performance. In Proceedings of the 5th International Conference on Learning Innovation and Quality Education (ICLIQE 2021) (pp. 1–7). ACM. https://doi.org/10.1145/3516875.3516909
5. Bell, E., & Bryman, A. (2007). The ethics of management research: an exploratory content analysis. British journal of management, 18(1), 63-77.
6. Cai, L., Msafiri, M. M., & Kangwa, D. (2025). Exploring the impact of integrating AI tools in higher education using the Zone of Proximal Development. Education and Information Technologies, 30, 7191–7264. https://doi.org/10.1007/s10639-024-13112-0
7. Cai, Z., Mao, P., Wang, D., Chen, Y., Xu, M., & Hou, X. (2022). Effects of scaffolding in digital game-based learning on student's achievement: A three-level meta-analysis. Educational Psychology Review, 34, 537–574. https://doi.org/10.1007/s10648-021-09655-0
8. Carroll, M., Lindsey, S., Chaparro, M., & Winslow, B. (2019). An applied model of learner engagement and strategies for increasing learner engagement in the modern educational environment. Interactive Learning Environments, 29(5), 757–771. https://doi.org/10.1080/10494820.2019.1636083
9. Cayubit, R. F. O. (2022). Why learning environment matters? An analysis on how the learning environment influences the academic motivation, learning strategies, and engagement of college students. Learning Environments Research, 25, 581–599. https://doi.org/10.1007/s10984-021-09382-x
10. Ching, C. Y., Motevalli, S., Talib, M. A., & Ishak, Z. (2024). The mediating role of self-stigma in perceived public stigma and attitudes toward mental health help-seeking among adults in Malaysia. Deleted Journal, 5(1), Article 0. https://doi.org/10.61838/kman.ijecs.5.1.1

11. Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage Publications.
12. Dao, P., & Sato, M. (2021). Exploring fluctuations in the relationship between learners' positive emotional engagement and their interactional behaviours. Language Teaching Research, 25(6), 972–994. https://doi.org/10.1177/13621688211044238
13. Deng, R. (2021). Emotionally engaged learners are more satisfied with online courses. Sustainability, 13(20), 11169. https://doi.org/10.3390/su132011169
14. El-Sabagh, H. A. (2021). Adaptive e-learning environment based on learning styles and its impact on development students' engagement. International Journal of Educational Technology in Higher Education, 18(1), 53. https://doi.org/10.1186/s41239-021-00289-4
15. Kang, H. Y., & Kim, H. R. (2021). Impact of blended learning on learning outcomes in the public healthcare education course: A review of flipped classroom with team-based learning. BMC Medical Education, 21(1), 78. https://doi.org/10.1186/s12909-021-02508-y
16. Lai, H. (2021). Understanding what determines university students' behavioral engagement in a group-based flipped learning context. Computers & Education, 173, 104290. https://doi.org/10.1016/j.compedu.2021.104290
17. Liu, S., Liu, S., Liu, Z., Peng, X., & Yang, Z. (2022). Automated detection of emotional and cognitive engagement in MOOC discussions to predict learning achievement. Computers & Education, 181, 104461. https://doi.org/10.1016/j.compedu.2022.104461
18. Martin, F., & Borup, J. (2022). Online learner engagement: Conceptual definitions, research themes, and supportive practices. Educational Psychologist, 57(3), 162–177. https://doi.org/10.1080/00461520.2022.2089147
19. Moallemi, R. (2024). The relationship between differentiated instruction and learner levels of engagement at university. Journal of Research in Innovative Teaching & Learning, 17(1), 21–46. https://doi.org/10.1108/JRIT-07-2022-0041
20. Puntambekar, S. (2022). Distributed scaffolding: Scaffolding students in classroom environments. Educational Psychology Review, 34, 451–472. https://doi.org/10.1007/s10648-021-09636-3
21. Shi, Y., Tong, M., & Long, T. (2021). Investigating relationships among blended synchronous learning environments, students' motivation, and cognitive engagement: A mixed methods study. Computers & Education, 168, 104193. https://doi.org/10.1016/j.compedu.2021.104193
22. Sökmen, Y. (2019). The role of self-efficacy in the relationship between the learning environment and student engagement. Educational Studies, 47(1), 19–37. https://doi.org/10.1080/03055698.2019.1665986
23. Xie, J. (2021). The effects of boredom on EFL learners' engagement. Frontiers in Psychology, 12, Article 743313. https://doi.org/10.3389/fpsyg.2021.743313