

Classroom Environment and Student Engagement of Bachelor of Elementary Education Students

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Abstract. Classroom environment plays a critical role in shaping students' learning experiences and academic engagement. While previous studies have established that classroom conditions influence students' participation and motivation, limited empirical evidence exists regarding this relationship among Bachelor of Elementary Education (BEED) students in local higher education institutions, particularly within the context of Don Carlos Polytechnic College. Addressing this gap, this study examined the relationship between classroom environment and student engagement among 254 third-year Bachelor of Elementary Education (BEED) students using a quantitative descriptive-correlational research design. A validated survey questionnaire was employed to assess the respondents' perceptions of classroom environment and their level of student engagement. The findings revealed that the respondents perceived both the classroom environment and student engagement to be at a high level. Among the dimensions of classroom environment, classroom interaction obtained the highest mean, indicating that effective communication, collaboration, and active teacher-student engagement were strongly manifested. Likewise, behavioral engagement emerged as the highest-rated dimension of student engagement, suggesting that students consistently participated in classroom activities, fulfilled academic responsibilities, and actively engaged in learning tasks. Correlation analysis further revealed a statistically significant positive relationship between classroom environment and student engagement, indicating that supportive, interactive, and well-managed classroom settings are associated with increased student participation, motivation, and academic involvement. The findings contribute to the growing body of literature on learning environments by providing empirical evidence from a local higher education context, reinforcing the proposition that a positive classroom environment serves as a significant factor in fostering student engagement. The study further underscores the importance of creating learner-centered and supportive instructional environments that can enhance educational quality and inform future research and institutional policies aimed at improving teaching and learning outcomes.

Keywords: classroom environment; student engagement; Bachelor of Elementary Education; descriptive-correlational design; higher education

Introduction

The classroom environment plays a crucial role in shaping students' learning experiences, academic performance, and overall engagement in school. It encompasses various factors such as physical learning conditions, teacher support, and classroom interaction that influence how students participate and respond to learning activities. A positive classroom environment promotes active participation, motivation, and meaningful learning experiences, which are essential for students' academic success.

Student engagement is a multidimensional construct that includes behavioral, emotional, and cognitive engagement. According to Fredricks et al. (2016), student engagement reflects students' active involvement, emotional connection, and cognitive investment in learning activities. Behavioral engagement refers to students' participation in academic tasks, emotional engagement pertains to students' feelings and attitudes toward learning, while cognitive engagement involves the mental effort students exert to understand and master academic content.

Several studies have emphasized the importance of classroom environment in enhancing student engagement. According to Fredricks and Eccles (2022), supportive teacher-student relationships and a welcoming classroom atmosphere increase students' interest, enjoyment, and participation in learning activities. Similarly, Skinner and Pitzer (2021) found that students who experience a sense of belonging and

acceptance in the classroom demonstrate greater enthusiasm and persistence in learning. Reeve and Shin (2020) further explained that autonomy-supportive classrooms encourage students to express their ideas, make choices, and participate actively, thereby strengthening their emotional engagement.

Teacher support also plays a significant role in promoting student engagement. Schunk and DiBenedetto (2021) reported that constructive feedback, encouragement, and guidance from teachers enhance students' persistence, self-regulation, and willingness to engage in challenging learning tasks. Likewise, Kahu and Nelson (2018) emphasized that meaningful learning experiences and strong academic support motivate students to invest greater mental effort in learning. Shernoff et al. (2021) further noted that interactive teaching strategies and engaging classroom instruction improve students' concentration, curiosity, and deeper understanding of lesson content.

The study is anchored on the Social Constructivist Theory of Lev Vygotsky (1978), which posits that learning occurs through social interaction, guided participation, and collaboration within a supportive environment. Vygotsky emphasized that students construct knowledge through meaningful interactions with teachers and peers. In this context, a positive classroom environment provides opportunities for collaboration, communication, and active participation that enhance student engagement.

Although previous studies have established the importance of classroom environment in fostering student engagement, limited research has been conducted among Bachelor of Elementary Education (BEED) students in Don Carlos Polytechnic College. Therefore, this study sought to determine the relationship between classroom environment and student engagement among BEED students during the Academic Year 2025–2026. Specifically, it aimed to determine the level of classroom environment in terms of physical learning conditions, teacher support, and classroom interaction; determine the level of student engagement in terms of behavioral, emotional, and cognitive engagement; and ascertain whether a significant relationship exists between classroom environment and student engagement.

Research Questions

This study's primary purpose is to determine the relationship between classroom environment and student engagement among Bachelor of Elementary Education (BEED) students. Specifically, it sought to answer the following questions:

1. What is the level of classroom environment as perceived by BEED students in terms of:
 - 1.1 Physical learning conditions;
 - 1.2 Teacher support; and
 - 1.3 Classroom interaction?
2. What is the level of student engagement as perceived by BEED students in terms of:
 - 2.1 Behavioral engagement;
 - 2.2 Emotional engagement; and
 - 2.3 Cognitive engagement?
3. Is there a significant relationship between classroom environment and student engagement among BEED students?

Scope and Delimitation of the Study

This study examined the relationship between classroom environment and student engagement among Bachelor of Elementary Education (BEED) students at Don Carlos Polytechnic College (DCPC) during the second semester of the 2025–2026 academic year. The study involved 254 students and used a survey questionnaire to collect self-reported data. Since the research was conducted only at DCPC and focused on classroom environment factors within a single academic year, the findings are limited to the study setting and may not be generalizable to other institutions or account for other factors influencing student engagement.

Literature Review

Classroom Environment

The classroom environment refers to the conditions, relationships, and structures that influence how students learn and behave in school. It includes the physical setting, social interactions, and overall atmosphere that support learning and participation. Similarly, Salcedo and Paglinawan (2025) reported that physical, social, and emotional classroom features significantly affect student engagement. Students who perceive their classrooms as supportive tend to develop positive attitudes and higher willingness to participate. Supportive environments also enhance students' confidence by making them feel respected and valued. Zhang (2025) emphasized that supportive relationships and clear expectations promote student involvement. Their bibliometric analysis showed that classroom social climate is strongly linked to engagement, where

environments that encourage interaction and expression foster ownership of learning. Cambay and Paglinawan (2024) found that structured classroom environments with clear rules reduce absenteeism and improve participation. Likewise, Wang and Degol (2016) confirmed that a positive classroom climate significantly predicts motivation and engagement.

Physical Learning Conditions

Physical learning conditions refer to seating arrangement, lighting, temperature, noise, air quality, and classroom design that influence learning effectiveness. Cheryan et al. (2016) stated that classroom environments shape motivation, behavior, and belongingness, as spatial design and visual cues affect how students perceive learning spaces. Higgins et al. (2017) found that well-organized classrooms with proper lighting and resources improve engagement and reduce learning difficulties. Lighting also plays a major role in attention and productivity, as poor lighting may cause fatigue and reduced focus. Bond et al. (2020) emphasized that physical and technological enhancements increase interaction and participation, supporting both behavioral and cognitive engagement. Similarly, Cleveland et al. (2019) noted that noise levels, spatial design, and comfort significantly affect concentration and learning retention.

Teacher Support

Teacher support refers to encouragement, fairness, guidance, and emotional care provided to learners. Wentzel (2016) emphasized that teacher support strongly influences motivation, engagement, and achievement. When teachers show care and responsiveness, students feel connected and actively participate. Roorda et al. (2017) found that positive teacher–student relationships increase emotional and behavioral engagement, leading to higher participation and effort. Ahn and Davis (2020) stressed that fairness and inclusivity promote belongingness and equal participation among diverse learners. Fraser (2018) highlighted that teacher respect and recognition strengthen confidence and engagement. Hamre and Pianta (2019) added that emotional support enhances academic self-concept, motivation, and persistence by reinforcing students' belief in their abilities.

Classroom Interaction

Classroom interaction involves communication between teachers, students, and peers. Hidayah (2025) found that teacher–student interaction is the strongest factor influencing engagement, improving motivation and participation. Havik and Westergård (2019) stated that positive interactions increase emotional and behavioral engagement. Sedova et al. (2020) found that classroom talk and peer discussion strengthen cognitive involvement. Khoza and Makgata (2024) emphasized that interactive discussions and teacher prompts improve participation, while Obenza-Tanudtanud and Obenza (2023) confirmed that strong classroom interaction enhances motivation, especially in modern learning settings.

Student Engagement

Student engagement refers to behavioral, emotional, and cognitive involvement in learning. Zhu et al. (2021) explained that engagement is shaped by curriculum design, instruction, and learning experiences that stimulate curiosity and identity formation. Monteiro et al. (2021) found that emotional attachment and acceptance increase willingness to participate. A supportive classroom environment allows students to express ideas freely and take academic risks. Gomes et al. (2023) showed that consistent involvement and reflective behavior lead to higher achievement. Appleton et al. (2018) described engagement as a dynamic process influenced by classroom context, instruction, and relationships, making it a strong predictor of academic success.

Behavioral Engagement

Behavioral engagement refers to participation, effort, and attention in learning. Nguyen et al. (2016) found that strong relationships increase engagement by promoting active participation. Wang and Eccles (2016) confirmed that teacher support and positive classroom climate enhance participation and reduce disengagement. Xie et al. (2019) emphasized that collaborative discussions increase attentiveness and involvement. Delfino (2019) found that student-centered teaching improves cooperation and participation. Abdul Rahman et al. (2021) added that engagement is strongly linked to teamwork, communication, and classroom participation.

Emotional Engagement

Emotional engagement refers to students' feelings of interest, enjoyment, belonging, and boredom. Pekrun and Linnenbrink-Garcia (2016) explained that emotions depend on perceived control and value of learning tasks. Fredricks and Eccles (2022) found that supportive environments increase enjoyment and

participation. Skinner and Pitzer (2021) emphasized that belongingness enhances enthusiasm and persistence. Reeve and Shin (2020) stated that autonomy-supportive classrooms improve emotional satisfaction by allowing students to express ideas and make choices. Fredricks et al. (2016) added that emotional safety promotes positive attitudes and consistent participation.

Cognitive Engagement

Cognitive engagement involves mental effort, reflection, and deep thinking. Schunk and DiBenedetto (2021) found that teacher support and feedback improve persistence and self-regulation. Jang et al. (2019) stated that student-centered environments enhance critical thinking and independent learning. Kahu and Nelson (2018) emphasized that meaningful and relevant learning increases mental effort. Shernoff et al. (2021) found that interactive instruction improves curiosity and understanding. Parsons and Taylor (2020) highlighted that reflective activities strengthen critical thinking and deeper learning.

Methodology

Research Design

This study employed a quantitative descriptive-correlational research design. The descriptive component was utilized to determine the level of classroom environment and student engagement among Bachelor of Elementary Education (BEED) students, while the correlational component examined the relationship between these two variables without manipulating any research conditions. This design was considered appropriate because it enabled the researchers to describe the respondents' perceptions and determine whether a statistically significant relationship existed between classroom environment and student engagement.

Sampling Design

The study employed simple random sampling as the sampling technique to ensure that each member of the population has an equal chance of being selected as a respondent. To determine the appropriate sample size, Slovin's Formula is used. Slovin's Formula is applied to compute the minimum number of respondents needed from the target population while maintaining an acceptable margin of error.

Research Locale

The study was conducted at Don Carlos Polytechnic College (DCPC), a local government-funded higher education institution located in Don Carlos, Bukidnon, Philippines. The institution offers various undergraduate programs, including the Bachelor of Elementary Education (BEED), Bachelor of Secondary Education majors in English, Filipino, Science, and Mathematics, Bachelor of Science in Criminology, and Bachelor of Science in Industrial Management. The college was selected because it offers the BEED program, which served as the focus of this investigation. Moreover, the institution provides an appropriate academic setting for examining how classroom environment influences student engagement among preservice teachers.

Research Participants

The respondents in this study were 254 third-year students from the College of Teacher Education who were currently enrolled in the Bachelor of Elementary Education (BEED) program at Don Carlos Polytechnic College for the Academic Year 2025–2026. The respondents are the ones who were knowledgeable enough to answer the questions in the present study. They answered the questionnaire that the researcher gave them, which provided the information that the researchers needed.

Research Instrument

The study utilized a researcher-made questionnaire consisting of two major sections. The first section measured classroom environment in terms of physical learning conditions, teacher support, and classroom interaction, while the second section measured student engagement in terms of behavioral, emotional, and cognitive engagement. Prior to data collection, the instrument underwent content validation by four experts in education and educational research to evaluate the relevance, clarity, and appropriateness of each item. Their comments and recommendations were incorporated into the final version of the questionnaire. Construct validity was further supported by developing the questionnaire based on established theoretical frameworks and related literature on classroom environment and student engagement, ensuring that each indicator adequately represented its respective construct. The revised questionnaire was pilot tested among 30 BEED students who were not included in the actual respondents to determine its reliability and identify ambiguous statements. Necessary revisions were made based on the pilot testing results before the final administration. Cronbach's Alpha coefficients yielded reliability indices of 0.832 for the Classroom Environment Scale and

0.916 for the Student Engagement Scale. These coefficients indicate good to excellent internal consistency, confirming that the research instrument was reliable for the conduct of the study.

Data Gathering Procedure

Prior to data collection, approval to conduct the study was obtained from the Dean of the College of Teacher Education. After securing the necessary permission, the researchers coordinated with the instructors handling third-year BEED classes regarding the schedule for questionnaire administration. Before distributing the questionnaires, the researchers explained the purpose of the study, the voluntary nature of participation, and the respondents' rights. Informed consent was obtained from all participants, and confidentiality and anonymity were strictly observed throughout the study. The questionnaires were administered personally during scheduled class periods. Clear instructions were provided to ensure that respondents fully understood each item before answering. Adequate time was allotted for questionnaire completion, after which all accomplished instruments were immediately collected. The completed questionnaires were examined for completeness, coded, and encoded for statistical analysis. All collected data were treated confidentially and were used exclusively for academic and research purposes.

Results and Discussions

Research Question 1: What is the level of classroom environment as perceived by BEED students?

Table 1. Level of classroom environment as perceived by BEED students in terms of Physical learning conditions

	Statement	Mean	Quantitative Description	Qualitative interpretation
1.	The colors used in the classroom environment influence my level of creativity and engagement with the learning material.	4.28	Agree	Conductive
2.	The lighting in my classroom affects my ability to focus and stay attentive during lessons.	4.28	Agree	Conductive
3.	The clarity of sound in the classroom influences my comprehension and retention of information.	4.28	Agree	Conductive
4.	The use of natural light or artificial lighting in the classroom affects my comfort and productivity.	4.25	Agree	Conductive
5.	My learning outcomes are influenced by the nearness of my seat to the teacher and interactive learning resources	4.23	Agree	Conductive
6.	The air quality in the classroom impacts my alertness and ability to learn effectively.	4.23	Agree	Conductive
7.	The noise levels in my classroom affect my ability to concentrate and understand the lesson content.	4.19	Agree	Conductive
8.	The temperature in the classroom affects my comfort level and concentration during lessons.	4.19	Agree	Conductive
9.	Proper ventilation and air circulation in the classroom are important factors for my academic performance.	4.18	Agree	Conductive
10.	The seating arrangement in my classroom impacts my ability to engage with the lesson content effectively.	4.17	Agree	Conductive
11.	The seating arrangement influences my level of focus and concentration during lectures and class activities	4.17	Agree	Conductive
12.	The comfort of my seating arrangement influences my overall learning experience in the classroom	4.16	Agree	Conductive
	Overall Mean	4.22	Agree	Conductive

The findings indicate that the respondents perceived the physical learning conditions of their classrooms as conducive to learning ($M = 4.22$). This suggests that the physical characteristics of the classroom—including lighting, acoustics, ventilation, seating arrangement, and classroom aesthetics—generally provide an environment that supports students' academic engagement. The consistently high ratings across all indicators demonstrate that the respondents view the physical learning environment not merely as a backdrop for instruction but as an important element that facilitates concentration, comfort, and active participation in classroom activities.

The relatively small variation among the item means indicates that students perceived the different aspects of the physical environment as consistently supportive rather than relying on only one favorable classroom characteristic. Although seating arrangement obtained comparatively lower ratings than lighting and classroom aesthetics, the difference was minimal, suggesting that respondents generally regarded all physical dimensions as contributing positively to their learning experiences. Rather than indicating a weakness, the lower ratings identify potential areas where classroom facilities may be further optimized to maximize student comfort and participation.

These findings reinforce Vygotsky's Social Constructivist Theory (1978), which emphasizes that meaningful learning occurs within environments that facilitate interaction and participation. While Vygotsky primarily highlighted the social dimensions of learning, effective social interaction is also influenced by the physical environment in which instruction occurs. Adequate lighting, proper acoustics, comfortable seating, and well-organized classroom spaces reduce environmental distractions and create conditions that allow learners to participate more actively in collaborative learning experiences.

From a practical perspective, the results underscore the importance of investing in classroom facilities as part of improving instructional quality. Although teacher competence remains central to effective instruction, the findings suggest that physical learning conditions should likewise be considered in institutional planning because they influence students' readiness to participate, sustain attention, and remain engaged throughout classroom activities. For teacher education institutions, maintaining conducive learning spaces may also provide preservice teachers with models of effective classroom organization that they can replicate in their future teaching practice.

The findings corroborate previous studies demonstrating that classroom design significantly influences students' learning experiences. Khany and Barzan (2025) emphasized that classroom design and environmental quality contribute to students' comfort and academic participation, while Cheryan et al. (2016) argued that classroom spaces shape learners' motivation and educational behavior. Similarly, Higgins et al. (2017), Bond et al. (2020), and Cleveland et al. (2019) concluded that well-designed learning environments improve attention, engagement, and academic performance, supporting the present findings.

Table 2. Level of classroom environment as perceived by BEED students in terms of Teacher support

	Statement	Mean	Quantitative Description	Qualitative interpretation
1.	The teacher shows confidence in my ability to perform well in this class.	4.31	Agree	Conducive
2.	The teacher makes me feel welcome and accepted in the classroom environment.	4.28	Agree	Conducive
3.	The teacher shows respect toward me as a learner and as a person.	4.26	Agree	Conducive
4.	The teacher encourages mutual respect among all students in the classroom.	4.24	Agree	Conducive
5.	The teacher considers individual differences among students when teaching this course.	4.23	Agree	Conducive
6.	The teacher values the diverse backgrounds and life experiences of students in this class.	4.23	Agree	Conducive
7.	The teacher recognizes that I have meaningful ideas to contribute during class.	4.22	Agree	Conducive
8.	The teacher treats all students fairly and without bias.	4.20	Agree	Conducive
9.	The teacher encourages all students to participate equally in class activities and discussions.	4.20	Agree	Conducive
	Overall Mean	4.24	Agree	Conducive

The results reveal that the respondents perceived teacher support as conducive ($M = 4.24$), indicating that instructors generally create learning environments characterized by encouragement, fairness, respect, and acceptance. The consistently high ratings across all indicators suggest that students recognize their teachers not only as providers of academic instruction but also as facilitators of a supportive learning atmosphere that promotes confidence and participation.

Rather than emphasizing isolated teacher behaviors, the findings demonstrate that students value teacher support as a comprehensive instructional practice involving emotional encouragement, equitable treatment, recognition of learners' capabilities, and responsiveness to individual differences. These dimensions collectively contribute to an environment where students feel psychologically safe to participate and express their ideas. Such conditions are particularly important in teacher education because preservice teachers develop their own instructional beliefs by observing and experiencing supportive teaching practices.

The findings further support Vygotsky's Social Constructivist Theory, which identifies teachers as more knowledgeable others who facilitate learning through guidance, scaffolding, and meaningful interaction. The high level of perceived teacher support suggests that instructors provide the instructional assistance necessary for students to develop greater confidence, participate actively in classroom discourse, and gradually become independent learners.

The practical implications extend beyond classroom instruction. The results suggest that faculty development initiatives should continue strengthening teachers' interpersonal and pedagogical competencies, particularly in providing constructive feedback, encouraging inclusive participation, and recognizing students' individual learning needs. Such practices not only enhance classroom climate but also prepare future teachers to implement learner-centered approaches in their own classrooms.

The present findings are consistent with the works of Wentzel (2016), Roorda et al. (2017), Fraser (2018), Hamre and Pianta (2019), and Ahn and Davis (2020), who consistently reported that supportive teacher-student relationships increase students' motivation, engagement, academic confidence, and classroom participation.

Table 3. Level of classroom environment as perceived by BEED students in terms of Classroom interaction

	Statement	Mean	Quantitative Description	Qualitative interpretation
1.	I actively participate in group discussions and collaborative learning activities.	4.33	Agree	Conducive
2.	I am encouraged to ask questions during class without fear of embarrassment.	4.29	Agree	Conducive
3.	Group activities in the classroom promote cooperation and teamwork among students.	4.27	Agree	Conducive
4.	I feel comfortable expressing my ideas and opinions during class discussions.	4.26	Agree	Conducive
5.	The classroom environment encourages open communication between students and the teacher.	4.25	Agree	Conducive
6.	Students in this class listen respectfully to one another's ideas and opinions.	4.24	Agree	Conducive
7.	Class discussions allow meaningful exchange of ideas among students.	4.22	Agree	Conducive
	Overall Mean	4.26	Agree	Conducive

The respondents perceived classroom interaction as conducive ($M = 4.26$), representing the highest-rated dimension of classroom environment. This finding indicates that students experience learning environments where collaboration, communication, and participation are strongly encouraged. The results suggest that classroom interaction functions as an essential mechanism through which students exchange ideas, ask questions, and participate in collaborative learning activities that promote deeper understanding.

The prominence of classroom interaction among the three dimensions implies that students place considerable value on opportunities to communicate and collaborate during instruction. Interactive learning environments encourage learners to articulate their understanding, negotiate meaning with peers, and construct knowledge collectively. Consequently, effective classroom interaction appears to be a defining characteristic of classrooms that successfully engage learners.

These findings strongly support Vygotsky's Social Constructivist Theory, which proposes that knowledge is constructed through social interaction. Classroom discussions, collaborative activities, and open communication between teachers and students provide opportunities for learners to co-construct understanding through dialogue and guided participation. The present findings therefore reinforce the theoretical proposition that learning is fundamentally a social process rather than an individual activity.

From an educational perspective, the findings highlight the importance of employing instructional approaches that encourage dialogue, collaborative learning, peer interaction, and active participation. Teacher education institutions should continue strengthening instructional strategies that move beyond lecture-based teaching toward more interactive pedagogies capable of developing both academic competence and professional communication skills among future educators.

These findings agree with previous research by Hidayah (2025), Havik and Westergård (2019), Sedova et al. (2020), Khoza and Makgata (2024), and Obenza-Tanudtanud and Obenza (2023), who concluded that positive classroom interaction significantly enhances students' participation, motivation, communication skills, and engagement.

Table 4. Summary of classroom environment as perceived by BEED students in terms of physical conditions

Indicators	Mean	Interpretation
Classroom Interaction	4.26	Conducive
Teacher Support	4.24	Conducive
Physical Learning Conditions	4.22	Conducive
Overall Mean	4.25	Conducive

The overall findings indicate that the respondents perceived the classroom environment as conducive to learning (Overall Mean = 4.25). Although classroom interaction obtained the highest mean, followed closely by teacher support and physical learning conditions, the relatively small differences among these dimensions suggest that students experience classroom environment as a multidimensional construct in which instructional, social, and physical elements collectively contribute to effective learning. Rather than interpreting each dimension independently, the results indicate that effective classroom environments emerge from the interaction of supportive teachers, meaningful classroom communication, and appropriate physical learning conditions. The findings therefore suggest that improvements in one aspect of classroom environment are likely to reinforce the effectiveness of the others. This holistic perspective is particularly relevant in teacher education because preservice teachers require learning environments that simultaneously promote academic competence, collaboration, and professional growth. The findings likewise strengthen the assumptions of Social Constructivist Theory, which views learning as the product of continuous interaction between learners and their educational environment. The consistently high ratings across all dimensions suggest that students experience classrooms where physical conditions, instructional practices, and social relationships work together to facilitate meaningful learning. Practically, the findings provide evidence that institutions seeking to improve student engagement should adopt comprehensive classroom improvement strategies rather than focusing exclusively on facilities or instructional methods. Investments in classroom infrastructure should be accompanied by professional development programs that strengthen teachers' instructional competence and promote collaborative learning environments. The present findings are supported by Khany and Barzan (2025), Wentzel (2016), Sedova et al. (2020), Fraser (2018), Cheryan et al. (2016), and Higgins et al. (2017), all of whom emphasized that effective classroom environments result from the combined influence of physical, instructional, and interpersonal factors that enhance student learning and engagement.

Research Question 2: What is the level of Student engagement as perceived by BEED students?

Table 5. Level of student engagement as perceived by BEED students in terms of Behavioral engagement

Statement	Mean	Quantitative Description	Qualitative Interpretation
1. I actively participate in class discussions.	4.34	Agree	Highly Engaged
2. I ask questions during class when lessons are unclear.	4.30	Agree	Highly Engaged
3. I respond when the teacher asks questions.	4.29	Agree	Highly Engaged
4. I complete class activities on time.	4.28	Agree	Highly Engaged
5. I pay attention during lectures and discussions.	4.27	Agree	Highly Engaged
6. I participate in group activities during class.	4.26	Agree	Highly Engaged
7. I follow classroom rules and instructions.	4.26	Agree	Highly Engaged
8. I stay focused during class sessions.	4.26	Agree	Highly Engaged
9. I contribute ideas during collaborative tasks.	4.24	Agree	Highly Engaged
10. I take notes during discussions.	4.23	Agree	Highly Engaged
11. I listen attentively when classmates are speaking.	4.22	Agree	Highly Engaged
12. I volunteer to answer questions in class.	4.22	Agree	Highly Engaged
13. I engage actively in learning tasks given by the teacher	4.21	Agree	Highly Engaged
14. I try to be involved in all classroom activities.	4.20	Agree	Highly Engaged
15. I avoid distractions during class time.	4.16	Agree	Highly Engaged
Overall Mean	4.25	Agree	Highly Engaged

The findings indicate that the respondents demonstrated a high level of behavioral engagement ($M = 4.25$), suggesting that they consistently participate in classroom discussions, complete assigned tasks, follow classroom expectations, and actively involve themselves in learning activities. Rather than reflecting simple compliance with classroom rules, the results indicate that students demonstrate observable learning behaviors associated with sustained academic participation and responsibility.

The consistently high ratings across all indicators imply that behavioral engagement among the respondents extends beyond attendance and task completion to include active interaction with teachers and classmates during classroom instruction. This pattern suggests that students possess positive learning habits that enable them to participate meaningfully in instructional activities. The relatively lower rating for avoiding distractions does not substantially diminish the overall level of engagement but instead highlights an area where instructional strategies promoting sustained attention may further strengthen students' classroom participation.

From a theoretical perspective, the findings align with Vygotsky's Social Constructivist Theory, which emphasizes active participation as a prerequisite for learning. Students who engage behaviorally in classroom discussions, collaborative activities, and guided learning experiences are more likely to construct knowledge through interaction with teachers and peers. Consequently, behavioral engagement may be viewed as an observable manifestation of effective social learning processes within the classroom.

The findings also have important implications for teacher education. Since the respondents are future elementary school teachers, their active participation in classroom activities contributes not only to their academic achievement but also to the development of professional behaviors that they are expected to demonstrate in their future teaching practice. Teacher educators should therefore continue employing active learning strategies that encourage participation, collaboration, and reflective classroom involvement.

The findings are consistent with Wang and Degol (2016), Bond et al. (2020), Xie et al. (2019), Delfino (2019), and Abdul Rahman et al. (2021), who concluded that supportive instructional environments and interactive teaching practices significantly enhance students' behavioral engagement, participation, and academic motivation.

Table 6. Level of student engagement as perceived by BEED students in terms of Emotional engagement

	Statement	Mean	Quantitative Description	Qualitative interpretation
1.	I feel excited about learning new topics.	4.28	Agree	Highly Engaged
2.	I feel connected to my classmates during class.	4.23	Agree	Highly Engaged
3.	I feel motivated to attend my classes regularly.	4.22	Agree	Highly Engaged
4.	I feel comfortable expressing my ideas in class.	4.22	Agree	Highly Engaged
5.	I feel supported by my teacher.	4.21	Agree	Highly Engaged
6.	I feel emotionally involved in classroom discussions.	4.21	Agree	Highly Engaged
7.	I enjoy participating in classroom activities.	4.19	Agree	Highly Engaged
8.	I feel interested even when lessons are challenging.	4.18	Agree	Highly Engaged
9.	I feel motivated to improve my classroom performance	4.18	Agree	Highly Engaged
10.	I feel interested in the lessons discussed in class.	4.16	Agree	Highly Engaged
11.	I feel satisfied when I complete class activities.	4.14	Agree	Highly Engaged
12.	I feel valued when I participate in class.	4.13	Agree	Highly Engaged
13.	I feel positive about my learning experiences.	4.10	Agree	Highly Engaged
14.	I feel confident when participating in class discussions.	4.08	Agree	Highly Engaged
15.	I feel encouraged to participate during lessons.	4.03	Agree	Highly Engaged
	Overall Mean	4.17	Agree	Highly Engaged

The findings indicate that the respondents exhibited a high level of emotional engagement ($M = 4.17$), suggesting that they generally experience positive emotions toward classroom learning, including enthusiasm, motivation, belongingness, and confidence. Emotional engagement reflects students' affective connection with learning and their willingness to invest emotionally in academic activities. The consistently high ratings across

all indicators imply that the respondents view their classroom experiences as supportive and meaningful, thereby fostering positive attitudes toward learning and encouraging sustained participation.

Rather than representing temporary feelings of enjoyment, the results suggest that emotional engagement is rooted in students' perceptions of acceptance, support, and interpersonal connectedness within the classroom. Such emotional investment is particularly important in teacher education because preservice teachers who develop positive learning experiences are more likely to cultivate similar classroom environments in their future professional practice. Although confidence in classroom participation and perceived encouragement obtained comparatively lower ratings, these differences were minimal and therefore indicate opportunities for strengthening students' self-confidence rather than deficiencies in the classroom environment.

The findings further support Vygotsky's Social Constructivist Theory, which emphasizes that learning develops within supportive social environments characterized by meaningful interaction. Students who experience belongingness, encouragement, and positive relationships with teachers and classmates are more likely to participate actively in collaborative learning activities. Thus, emotional engagement may be viewed as an important outcome of classrooms that successfully foster positive interpersonal relationships.

From a practical perspective, the findings highlight the importance of promoting emotionally supportive classroom climates. Teacher educators should continue implementing instructional strategies that encourage student participation, recognize learners' contributions, and establish psychologically safe environments where students feel comfortable expressing their ideas. Such practices may strengthen students' motivation, confidence, and persistence throughout their academic preparation.

The findings corroborate previous studies by Quin et al. (2017), Pekrun (2016), Reeve (2018), Wang and Eccles (2016), and Karrie et al. (2019), who consistently reported that positive classroom relationships, supportive teaching practices, and students' sense of belonging contribute significantly to emotional engagement and sustained academic motivation.

Table 7. Level of student engagement as perceived by BEED students in terms of Cognitive engagement

	Statement	Mean	Quantitative Description	Qualitative Interpretation
1.	I try to understand lessons deeply rather than memorizing them.	4.25	Agree	Highly Engaged
2.	I think carefully about the ideas discussed in class.	4.25	Agree	Highly Engaged
3.	I connect new lessons with what I already know.	4.23	Agree	Highly Engaged
4.	I apply what I learn to real-life situations.	4.20	Agree	Highly Engaged
5.	I use different strategies to understand difficult lessons.	4.19	Agree	Highly Engaged
6.	I reflect on my learning after class.	4.19	Agree	Highly Engaged
7.	I analyze ideas presented during discussions.	4.19	Agree	Highly Engaged
8.	I try to solve problems even when they are complex.	4.18	Agree	Highly Engaged
9.	I ask questions to deepen my understanding.	4.17	Agree	Highly Engaged
10.	I review lessons to better understand them.	4.15	Agree	Highly Engaged
11.	I think critically about classroom topics.	4.15	Agree	Highly Engaged
12.	I try to improve my understanding when I make mistakes.	4.14	Agree	Highly Engaged
13.	I evaluate my own learning progress.	4.13	Agree	Highly Engaged
14.	I seek additional resources to understand lessons better.	4.11	Agree	Highly Engaged
15.	I persist in thinking about difficult academic concepts.	4.08	Agree	Highly Engaged
	Overall Mean	4.17	Agree	Highly Engaged

The results reveal that the respondents demonstrated a high level of cognitive engagement ($M = 4.17$), indicating that they actively invest mental effort in understanding lesson content, integrating prior knowledge, and applying higher-order thinking skills during learning activities. The consistently favorable ratings across

all indicators suggest that students engage in learning beyond rote memorization by reflecting on concepts, solving problems, and employing strategies that facilitate meaningful understanding.

The findings suggest that cognitive engagement is characterized not only by students' ability to process information but also by their willingness to regulate their own learning. While seeking additional learning resources and persisting with difficult concepts received relatively lower ratings, these results remain within the highly engaged category, indicating that students generally demonstrate positive learning habits while still benefiting from instructional approaches that further develop independent learning and self-regulation.

The findings align closely with Vygotsky's Social Constructivist Theory, which proposes that cognitive development occurs through guided participation and interaction with more knowledgeable individuals. Classroom discussions, collaborative problem-solving, and teacher guidance enable students to develop deeper conceptual understanding while gradually assuming greater responsibility for their own learning.

Consequently, the observed level of cognitive engagement reflects the successful integration of instructional support and active learner participation within the classroom.

The practical implications are particularly important for teacher education institutions. Since cognitive engagement contributes to critical thinking, reflective practice, and problem-solving abilities, teacher educators should continue employing inquiry-based instruction, collaborative learning activities, and authentic classroom tasks that require students to analyze, evaluate, and apply knowledge in meaningful contexts. Such instructional approaches prepare future teachers to become reflective practitioners capable of promoting higher-order thinking among their own learners.

The findings support the works of Zimmerman (2016), Hattie (2017), Schunk (2020), Kirschner (2018), and Feldon (2019), all of whom emphasized that self-regulated learning, critical thinking, reflective practice, and knowledge integration are essential characteristics of cognitively engaged learners.

Table 8. Summary of mean score of Student Engagement as perceived by BEED students

Indicators	Mean	Interpretation
Behavioral Engagement	4.25	Highly Engaged
Emotional Engagement	4.17	Highly Engaged
Cognitive Engagement	4.17	Highly Engaged
Overall Mean	4.20	Highly Engaged

The overall findings indicate that the respondents demonstrated a high level of student engagement (Overall Mean = 4.20), reflecting strong behavioral, emotional, and cognitive involvement in classroom learning. Although behavioral engagement obtained the highest mean, followed closely by emotional and cognitive engagement, the relatively narrow differences among these dimensions suggest that student engagement functions as an integrated construct in which participation, emotional investment, and intellectual effort mutually reinforce one another.

The findings imply that the respondents are not merely active participants in classroom activities but are likewise emotionally connected to learning and cognitively invested in understanding academic content. This multidimensional pattern of engagement demonstrates that effective learning involves more than observable classroom participation; it also requires positive attitudes toward learning and sustained mental effort in processing new knowledge. The consistency of the findings across all three dimensions suggests that the learning environment experienced by the respondents supports holistic student development.

From a theoretical standpoint, the findings reinforce Vygotsky's Social Constructivist Theory, which conceptualizes learning as an interactive process requiring active participation, meaningful social relationships, and cognitive engagement. Students who collaborate with peers, communicate with teachers, and engage intellectually with classroom activities are more likely to construct knowledge effectively and achieve meaningful learning outcomes. The present findings therefore provide empirical support for the proposition that student engagement is facilitated by socially supportive learning environments.

The practical implications extend to curriculum implementation and instructional planning within teacher education programs. Teacher educators should continue designing learning experiences that simultaneously promote active participation, foster positive classroom relationships, and encourage critical thinking. Such comprehensive instructional practices are likely to strengthen students' professional preparation while developing the competencies expected of future elementary school teachers.

The findings are consistent with Fredricks et al. (2016), Skinner and Pitzer (2017), Reeve and Tseng (2018), and Greene (2019), who emphasized that behavioral, emotional, and cognitive engagement collectively contribute to academic success, persistence, and meaningful learning.

Research Question 3: Is there a significant relationship between classroom environment and student engagement among BEED students?

Table 9. Correlation Analysis between Classroom Environment and Student Engagement among BEED students

Variable	r-value	P-value	Interpretation	Decision
Classroom environment and student engagement	0.55	0.000	Significant	Accept the alternative hypothesis

The correlation analysis revealed a moderately positive and statistically significant relationship between classroom environment and student engagement ($r = .55$, $p < .001$). This finding indicates that students who perceived their classroom environment as more conducive likewise reported higher levels of engagement in classroom learning. According to Cohen's (1988) guidelines, an r -value of .55 represents a large practical effect, suggesting that the relationship is not only statistically significant but also educationally meaningful.

The results suggest that classroom environment functions as an important contextual factor influencing students' behavioral participation, emotional investment, and cognitive involvement. Supportive teacher practices, positive classroom interactions, and favorable physical learning conditions appear to work collectively in creating learning environments that encourage students to participate actively, remain motivated, and invest greater intellectual effort in academic tasks. Rather than influencing engagement independently, these dimensions interact to establish classroom conditions that facilitate meaningful learning experiences.

The findings provide strong empirical support for Vygotsky's Social Constructivist Theory, which posits that learning occurs through meaningful interaction within supportive social environments. The observed relationship suggests that classrooms characterized by collaboration, teacher guidance, and positive interpersonal relationships create opportunities for students to construct knowledge actively through dialogue and shared learning experiences. Consequently, student engagement may be understood not solely as an individual characteristic but as a product of the quality of the educational environment in which learning occurs.

From a practical perspective, the magnitude of the correlation suggests that improving classroom climate may represent an effective strategy for increasing student engagement. Teacher education institutions should therefore continue investing in learner-centered instructional practices, faculty development initiatives, collaborative learning opportunities, and improvements in classroom facilities that collectively contribute to supportive learning environments. Such interventions may not only improve students' current academic experiences but also influence how future teachers design their own classrooms.

Although the relationship is substantial, the correlation coefficient also indicates that classroom environment does not completely explain student engagement. This implies that other variables—such as academic motivation, self-efficacy, learning strategies, resilience, and family or peer support—may likewise influence students' engagement. Future studies may therefore employ multiple regression or structural equation modeling to determine the relative contribution of classroom environment alongside other predictors of student engagement.

The present findings are consistent with Wang and Degol (2019), Wang and Eccles (2016), Shukla et al. (2019), and Hughes et al. (2018), who concluded that supportive classroom climates, effective instructional practices, and positive teacher-student relationships significantly enhance students' engagement and academic success.

Ethical Considerations

This study was conducted in accordance with established ethical principles governing educational research involving human participants. Prior to data collection, permission to conduct the study was obtained from the Office of the Dean of the College of Teacher Education, Don Carlos Polytechnic College. Participation in the study was entirely voluntary, and informed consent was secured from all respondents before the administration of the research instrument. The participants were informed of the objectives of the study, the

procedures involved, the expected duration of participation, their right to decline or withdraw from the study at any stage without penalty, and the intended use of the collected data. To protect the respondents' privacy, no personally identifiable information was collected, and all responses were treated with strict confidentiality. The completed questionnaires were encoded using anonymous identifiers and were stored securely to prevent unauthorized access. Data were reported only in aggregate form to ensure that individual respondents could not be identified. The researchers likewise observed the principles of respect for persons, beneficence, and justice throughout the conduct of the study. Furthermore, the handling, storage, and reporting of research data complied with the provisions of the Data Privacy Act of 2012 (Republic Act No. 10173) of the Philippines to safeguard the confidentiality and privacy of the respondents.

Conclusion

The findings demonstrate that Bachelor of Elementary Education students at Don Carlos Polytechnic College perceive their classroom environment as generally conducive to learning and exhibit a high level of behavioral, emotional, and cognitive engagement. More importantly, the study established that classroom environment is significantly associated with student engagement, indicating that positive physical learning conditions, supportive teacher practices, and meaningful classroom interactions collectively contribute to students' active participation and investment in learning. Beyond confirming this significant relationship, the study contributes to the growing body of literature by providing empirical evidence from a local teacher education institution, thereby extending current understanding of how classroom environment influences student engagement among preservice teachers. The findings further support Vygotsky's Social Constructivist Theory, which posits that meaningful learning develops through interaction within supportive educational environments. The results suggest that student engagement is not solely an individual characteristic but is substantially shaped by the quality of students' learning experiences and classroom relationships. From the perspective of teacher education, the findings underscore the importance of preparing future teachers to establish learner-centered, supportive, and collaborative classroom environments that foster meaningful engagement. Since preservice teachers often model instructional practices they experience during their training, strengthening classroom environments within teacher education programs may have long-term implications for the quality of classroom instruction in basic education. The study, however, is subject to certain limitations. It was conducted only among third-year Bachelor of Elementary Education students from a single higher education institution using a descriptive-correlational design. Consequently, the findings cannot establish causal relationships and may not be generalized to all teacher education institutions or student populations. Future investigations employing longitudinal, experimental, or mixed-methods designs may provide a more comprehensive understanding of the mechanisms through which classroom environment influences student engagement.

Recommendations

Based on the findings and conclusions of the study, several recommendations are proposed. For Bachelor of Elementary Education (BEED) students, they are encouraged to sustain active participation in classroom discussions, collaborative learning activities, and reflective learning practices while continuously developing positive learning habits, self-regulation, and critical thinking skills that contribute to behavioral, emotional, and cognitive engagement. For BEED instructors and faculty members, learner-centered instructional practices should be strengthened through the integration of collaborative learning, inquiry-based activities, formative assessment, and constructive feedback, while positive teacher-student relationships and psychologically safe learning environments should be fostered to encourage students to express ideas, ask questions, and participate confidently in academic discussions. For school administrators and teacher education institutions, greater attention should be given to improving classroom facilities, instructional resources, and learning spaces that support student engagement, alongside regular faculty development programs focusing on learner-centered pedagogy, classroom management, active learning strategies, and inclusive teaching practices; periodic assessment of classroom climate and student engagement may also be incorporated into institutional quality assurance initiatives to support continuous instructional improvement. For curriculum planners and policymakers, teacher education curricula may further emphasize classroom management, collaborative learning, and student-centered instructional approaches to prepare future teachers to establish engaging and inclusive learning environments, while institutional policies that promote innovative teaching practices and continuous professional development should be strengthened. For future researchers, further investigations may examine additional factors that influence student engagement, including academic motivation, self-efficacy, learning strategies, digital learning environments, resilience, and teacher instructional competence. Future studies may also employ multiple regression, structural equation modeling, longitudinal research designs, or qualitative and mixed-methods approaches to examine predictive

relationships and gain deeper insights into students' lived experiences of classroom environment and engagement. Replication across other higher education institutions, academic programs, and geographical locations is likewise recommended to enhance the breadth and generalizability of the evidence.

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