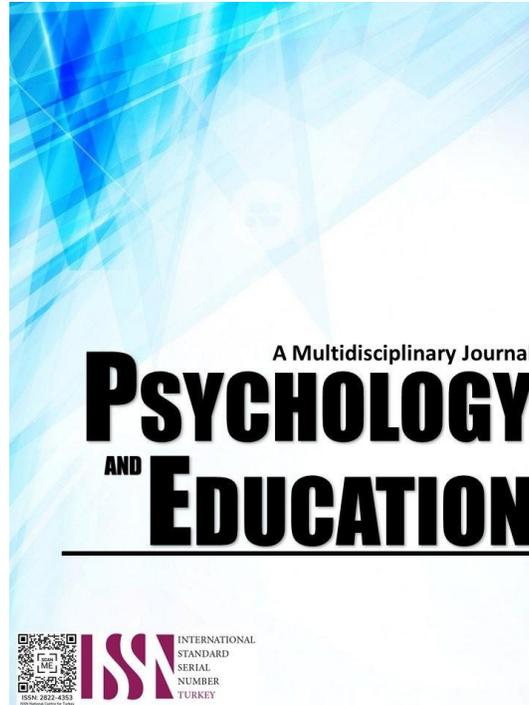


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Engagement in Online Learning of the Graduate Students in a Private School in Iligan City

Aseza M. Romoros,* Erlinda N. Basmayor
For affiliations and correspondence, see the last page.

Abstract

This study explored the levels of engagement in online learning and its relationship with academic performance among graduate students in a private institution in Iligan City. Using a descriptive-correlational research design, the study examined cognitive, behavioral, emotional, and social dimensions of engagement. Data were gathered from graduating Master of Education students majoring in Educational Management through validated survey questionnaires and academic performance records. The results revealed that social engagement had a significant correlation with academic performance, while other dimensions showed varying levels of influence. Among the platforms used, Google Meet was the most preferred, while Google Classroom had the lowest usage. Findings also showed that students exhibited high behavioral engagement through reviewing recorded lectures, but low engagement forum participation and note-taking. Emotional engagement reflected a sense of isolation, though students reported enjoying interactions with peers and instructors. Based on the findings, an action plan was developed focusing on targeted interventions to strengthen each engagement dimension and support academic achievement. The study concluded that enhancing social and emotional engagement is key to improving graduate students' success in online learning environments.

Keywords: *online learning, student engagement, academic performance, graduate students, social engagement, and emotional engagement*

Introduction

The expansion of online learning has reshaped the educational experience for students across all levels, particularly in higher education. As more institutions adopt digital platforms to facilitate teaching and learning, the use of Learning Management system (LMS) has become central to delivering course content, fostering interaction, and assessing student performance. Online learning offers unmatched flexibility and accessibility. It allows students to engage with their studies anytime and from virtually anywhere. However, with this shift comes a critical need to understand how students remain engaged in these virtual environments and how that engagement influences their academic achievement.

Assessment plays pivotal role in this context. In an online classroom, assessment is not limited to measuring learning outcomes. It also functions as a key driver of student engagement. Through the LMS, instructors can offer a wide array of assessments from self-paced quizzes and reflective journals. It collaborates projects and multimedia presentations. These tasks not only evaluate what students have learned but promote active participation and deeper involvement with course material.

The rise of online learning has significantly reshaped the educational landscape. It is offering students alternative pathways to access and engage with academic content. This shift has been largely supported by the widespread adoption of Learning Management System (LMS). These serve as essential platforms for organizing, delivering, and managing online instruction. As higher education institutions increasingly integrate digital tools into their teaching practices, understanding the motivation behind students' preference for online learning particularly through Learning Management system (LMS) platform has become relevant. One of the primary needs driving students to choose online learning is the demand for flexibility. Many learners, especially those at the graduate level or balancing employment and personal commitments, require a learning environment that allows them to manage their time and responsibilities independently. LMS platforms provide the necessary structure to support this flexibility. This offers 24/7 access to course materials, asynchronous discussions, and self-paced learning modules. According to Watts (2019), such asynchronous and self-directed features of online education promote learner autonomy and accessibility, making them especially beneficial for non-traditional students.

Online learning had become an essential component of higher education. It focuses particularly for graduate students who often manage academic responsibilities alongside work, family, and other personal commitments. In recent years, the shift to digital platforms has created new opportunities and challenges in maintaining student engagement. One of the most important factors is influencing academic performance and learner satisfaction. However, much of the existing research on the student engagement in online learning focused on undergraduate students or younger learners in general. As a result, the experiences and engagement patterns of graduate students, especially those who were adult learners, remain underexplored.

There was a notable research gap in understanding how adult learners in graduate programs engaged in online learning environments. Most engagement strategies and learning platforms had been designed for traditional students, without considering the unique needs, motivations, and constraints of mature students who balanced multiple roles (Kara et al., 2019). Addressing this gap was important to improve teaching approaches, enhance learning experience, and ensure that online education was effective and inclusive for this demographic.

The primary goals of the study were to assess the behavioral, emotional, cognitive, and social engagement levels of graduate students in online learning. Additionally, this aims to understand how their personal and professional responsibilities impacted their academic involvement. The study also examines the relationship between student engagement and academic performance in online settings. It explores and described the engagement of graduate students in online learning within a private school in Iligan City. Specifically, it sought to understand the levels and nature of their engagement, the challenges they faced, and the factors that influenced their active participation in virtual classrooms. By doing so, the research hoped to offer valuable insights and practical recommendations to improve the design and delivery of online learning for graduate level adult learners

Thus, the objective of the study is to determine the impact of student engagement in online learning on their academic performance, with particular attention to how LMS-based assessment practices influence this relationship. By understanding how assessment strategies contribute to or hinder engagement, educators and institutions can better support student success in the digital age, it would determine the effects of learning engagement and academic achievement of the graduate students in online learning environment in St. Peter's College Iligan City. The study was conducted in January to February 2025. The researcher aimed to shed light on the challenges of online learning for graduate students, helping the institution make adaptations and recommendations for the success of the online learning mode.

Research Objectives

This study aimed to determine the impact of student engagement in online learning on the academic performance of graduate students enrolled in the Master of Education major in Educational Management at St. Peter's College, Iligan City, during the Academic Year 2024-2025. Specifically, the study sought to attain the following objectives.

1. To describe the demographic profile of the respondents in terms of:
 - 1.1. sex;
 - 1.2. age;
 - 1.3. length of service; and
 - 1.4. preferred learning management system.
2. To describe the level of engagement in online learning environment relative to:
 - 2.1. behavioral;
 - 2.2. cognitive;
 - 2.3. emotional; and
 - 2.4. social.
3. To identify the academic performance of the respondents for the Academic Year 2024-2025.
4. To evaluate the significant relationship between the academic performance and the engagement in online learning of the respondents.
5. To examine which of the respondents' demographic profile, engagement in online learning best influence their academic performance.
6. To formulate an action plan based on the results of the study.

Methodology

Research Design

Descriptive-correlational research was employed in this study. Descriptive correlational research involves "observing variables as they naturally occur, examining their relationships, and describing the strength and direction of these associations without inferring causal connections" (Polit & Beck, 2021). Descriptive design was used to determine the respondents' demographic profile as well as their perspective on online learning management system and their level of engagement in online learning and online platform. And most importantly, its effect on their academic performance. Likewise, the correlation was used to determine the relationship between the respondent's demographic profile as well as the significant relationship between the respondent's level of engagement in online learning and its effect on their academic performance.

Respondents

The respondents in the study were graduate students enrolled in the second semester of the 2024-2025 school year at St. Peter's College, Iligan City. These individuals have been identified as the target population due to their relevance to the research objectives and their capacity to provide valuable insights for the study.

The total population of graduate students is 474, consisting of 62 males and 412 females. They were randomly selected using a stratified random sampling procedure. It is a method of sampling that involves dividing the population into smaller subgroups, known as strata.

Instrument

In this study, an adapted questionnaire utilized from the study of Alghammi and Nyazi (2020) entitled "Studying Student's Engagement in Online Learning During Covid 19: An Exploratory Correlation Study". There were four (4) parts of the questionnaire. The first

section contained the respondents' demographic profile, which included their sex, age, and length of service in teaching. The second section was the Learning Management System, which identified the learning management system used by the students in their online learning. The third section focused on the Engagement of students with online learning platforms, which was assessed through behavioral, cognitive, emotional, and social engagement. The last section is identifying their academic achievement that assessed the effect of their engagement in online learning. The questionnaire was thoroughly examined to ensure that it contained all the necessary information for the study. It also went through a survey questionnaire and an online question survey, or a Google form.

Procedure

In gathering the information needed from the participants, the researcher wrote a letter addressed to the school President through the Dean of the Graduate Studies, asking permission to allow her to distribute the questionnaire to the students. As soon as her request was approved, the researcher then personally conducted and distributed the questions by distributing the survey questionnaire and sending the google link to the participants. To gather the data, participants were given a limited time to complete the test. The researcher immediately collected the instrument after everyone was done answering.

After a given period, all the data or questionnaires were then gathered, tabulated, and analyzed to obtain the proper interpretations. Thus, the conclusion and recommendation of the study were formulated by the researcher.

Data Analysis

The responses to each item in the questionnaire checklist were carefully tallied and tabulated by the researcher. The following statistical tools were employed in treating the data:

For objectives 1 and 2, Frequency and Percentage were used to describe the demographic profile of the respondents and the online learning management system used.

For objectives, 3 and 4, Mean and Standard Deviation (SD) were used to determine the assessment of respondents relative to engagement in online learning environment.

For objective 5, Frequency and percentage were used to describe the distribution of the respondents' academic achievement.

For objective 6, Pearson Correlation was used to determine the linear association between the engagement in online learning and academic achievement of the respondents.

For objective 7, Multiple linear regression analysis was used to test the influence of engagement in online learning to the academic achievement of the respondents.

Ethical Considerations

To ensure the protection of respondents, their personal information was kept confidential, and their consent form to voluntary participate in the study was obtained. The researcher sought approval for ethical considerations from authorized committee prior to conducting the study.

Results and Discussion

This section presents the data collected to address the study's research questions. It also analyzes and interprets the data collected by the researchers to solve the issues in the study.

Demographic Profile of the Respondents in terms of Sex, Age, Length of Service, and preferred Online Learning Management system

Table 1. Sex

Sex	Frequency	Percentage (%)
Male	21	20.00
Female	85	80.00
Total	106	100.0

Table 1 displays the sex of the respondents. The results reveal that among the graduate students surveyed, female students had the highest frequency count, totaling 85 individuals (80%), while the lowest frequency count, with 21 individuals (20%), was the male students. This finding indicated that more female than male students participated in the study.

According to the school's data, as of the second semester of the 2024-2025 academic year, St. Peter's College in Iligan City reported a total enrollment of 474 students, comprising 62 males and 412 females, in its graduate program leading to the Master of Arts in Education.

Based on the available data, female students are more participative in class, particularly in online learning environments, due to several interrelated factors. One primary reason is their generally higher level of self-regulation and intrinsic motivation. According to Yu



(2021), female learners tend to demonstrate better time management, goal-setting, and self-discipline, which are essential skills for succeeding in flexible, self-directed learning setups like online education. These skills enable them to stay focused, complete tasks on time, and actively engage in academic activities without requiring constant supervision.

Additionally, female students are typically more comfortable with communication and social interaction in academic settings. They are more likely to initiate discussions, ask questions, and respond to peers and instructors, fostering a more interactive and participative learning environment.

Table 2. *Age*

<i>Age</i>	<i>Frequency</i>	<i>Percentage (%)</i>
26 – 30	65	61.00
31 – 35	31	29.00
36 - 40	9	9.00
41 - 45	1	1.00
Total	106	100.0

Table 2 presents the age of the respondents. The result showed that among the graduate students surveyed, those aged 26-30 had the highest frequency count with 65 individuals (61%), while, those age ranged from 41-45 had the lowest frequency count with only 1 individual (1%), This implied that the majority of students enrolled in graduate studies and actively participating in online classes are within the younger adult age group.

The implication of this finding is the need to create a program design to better accommodate a wide range of students, potentially by improving technological support, offering alternative learning styles, and fostering greater interaction. Additionally, older students may face challenges adapting to new technologies or lack the necessary digital literacy skills for online coursework.

According to Kara et al. (2019), adult learners generally possess lower levels of computer and internet self-efficacy, which can hinder their participation and success in online courses. These learners may experience anxiety, frustration, or even drop out due to difficulties navigating digital platforms.

Similarly, Debackère et al. (2023) reported that tasks often considered basic—such as using a mouse, navigating dropdown menus, or understanding digital interfaces—can be major barriers for older adults. These difficulties are compounded by emotional stress and feelings of helplessness, especially when digital literacy is assumed to be a given in course design.

In Addition, Gruben et al. (2025) further emphasized that many older learners describe their experiences with digital tools as being akin to "not being able to read and write," underscoring the deep impact of the digital divide. They also found that lack of access to modern devices, poor internet connectivity, and insufficient family or institutional support worsen these challenges. Together, these findings highlight the critical need for tailored digital literacy training and supportive learning environments to help older students thrive in technology-driven education.

Table 3. *Length of Service*

<i>Length of Service</i>	<i>Frequency</i>	<i>Percentage (%)</i>
3 years and below	69	65.00
4 – 6 years	26	26.00
7 – 9 years	4	4.00
10 years and above	7	7.00
Total	106	100.0

Table 3 presents the respondents' length of service. The result showed that the highest frequency count (65%) was observed amount respondents with 3 years and below of teaching experience, which indicated 69 individuals, while only (4%) were recorded among those with 7-9 years of service indicates 4 individuals. This suggested that novice teachers are more actively engaged in online learning compared to their more experienced counterparts.

Recent studies have supported this observation; for instance, Konig et al. (2020) found that early-career teachers demonstrate greater flexibility and readiness in adapting to digital platforms, likely due to their initial teacher education. Similarly, Trust and Whalen (2020) highlighted that less experienced teachers often possessed higher digital literacy skills, making them more confident and motivated to integrate online learning tools.

In contrast, teachers with longer service may face barriers such as lower self-efficacy, technological anxiety, and a preference for traditional pedagogical methods (Cutri, Mena, & Whiting, 2020). These findings underscored the necessity for continuous, differentiated professional development that addressed the unique needs of more experienced teachers, ensuring equitable engagement across varying lengths of service.

These findings underscore the necessity for continuous, differentiated professional development that addresses the unique needs of more experienced teachers, ensuring equitable engagement across varying length of service.



Table 4. *Online Learning Management System*

<i>Learning Management System</i>	<i>Frequency</i>	<i>Percentage (%)</i>
Google Meet	64	60.00
Google Classroom	5	5.00
Zoom	18	17.00
Canvas	11	10.00
Moodle	8	8.00
Total	106	100.0

Table 4 displays the respondents' preferred online learning management system. The findings revealed that among the Learning Management Systems (LMS) selected by respondents for engaging in online learning, Google Meet was the platform with the highest frequency count, with 64 users (60%). In contrast, Google Classroom had the lowest count, with 5 users (5%). This preference for Google Meet indicated a strong inclination towards synchronous, real-time interaction platforms, emphasizing the value teachers place on immediate communication, social presence, and dynamic engagement.

According to Robbani et al. (2022), the use of Google Meet was found to positively influence students' learning interest and motivation, highlighting the platform's effectiveness in maintaining engagement during virtual classes. Similarly, Akhir et al. (2023) reported that students perceive Google meet as user-friendly and accessible, factors that contribute to its widespread adoption in online learning environments.

Conversely, while Google Classroom offered robust features for asynchronous learning., its lower usage among respondents may reflect challenges in its implementation. Lasco et al. (2023) observed that despite Google Classroom's potential to enhance online learning, factors such as limited training and familiarity can hinder its effective utilization. Additionally, Sollano (2023) identified challenges in using Google Classroom, including issues related to internet connectivity and the need for improved digital literacy among users. Therefore, there is a need for professional development programs that equip teachers with the pedagogical and technical skills to integrate both synchronous (e.g., Google Classroom) and asynchronous modes. Balancing these modalities can maximize all dimensions of student engagement and contribute to a more comprehensive, inclusive online learning experience.

In conclusion, a major advantage of Google Meet was the native integration to Google Classroom, Docs, Slides, and Drive. This cohesive ecosystem empowered students and educators to schedule meetings, share materials, and collaborate on documents in real time—all without leaving the platform. A 2023 institutional survey in the Philippines found that students appreciated this streamlined workflow and preferred Meet because it connected their learning resources and communication tools seamlessly.

Engagement in Online Learning in terms of Behavioral, Cognitive, Emotional, and Social.

Table 5. *Behavioral Engagement*

<i>Indicator</i>	<i>Mean</i>	<i>Description</i>
1. I set aside regular time each week to work on the LMS.	3.15	Agree
2. I took notes while studying the LMS.	3.06	Agree
3. I revisited my notes when preparing for LMS assessment tasks.	2.98	Agree
4. I actively take notes when preparing for the LMS assessment tasks.	3.33	Strongly Agree
5. I set personal learning goals for my online studies.	3.05	Agree
6. I feel confident in my ability to succeed on online learning	3.26	Strongly Agree
7. I submit assignments and complete tasks on time.	3.03	Agree
8. I review recorded lecture and supplementary materials to reinforce learning.	3.62	Strongly Agree
Weighted Mean	3.19	Agree

Legend: 3.25–4.00, Strongly Agree; 2.50–3.24, Agree; 1.75–2.49, Disagree; 1.00–1.74, Strongly Disagree

Table 5 presents the behavioral engagement in online learning. The result showed that the item "I reviewed recorded lectures and supplementary materials to reinforce learning" achieved the highest mean score 3.62, whereas the item "I revisited my notes when preparing for LMS assessment tasks" received the lowest mean score 2.98. This implied that while learners are actively engaging with available multimedia resources to reinforce their learning, they may be less inclined to employ traditional study habits, such as reviewing their own notes.

According to Truss (2024), learning platforms featuring instructor-generated videos—such as lecture captures, screencasts, or voice-over presentations—promote higher behavioral engagement among university students. These videos are often preferred because they offer coherent, consistent, and accessible content, allowing learners to control playback and revisit segments as needed, which sustains their observable effort in coursework.

In contrast, findings by UCL researchers (2021) indicate that students rated synchronous activities and instructor-led virtual interactions as significantly more engaging than asynchronous tasks like independently watching pre-recorded videos or summarizing peer postings

In Addition, Pan (2023) emphasized the significant role of online learning environments in influencing students' behavioral engagement, highlighting that supporting online settings can enhance learners' motivation and active participation. Additionally, al Mamun an Lawrie (20203) found that student-content interactions, particularly in self-regulated inquiry based online learning modules,



are crucial for fostering behavioral engagement.

Additionally, Aliyyah et al. (2023) stressed that the effective design of online courses, including prompting students to engage with both instructor-led and independent activities, can enhance behavioral engagement and academic success. Therefore, it highlighted the importance of designing online learning environments that not only provide accessible resources but also actively promote self-regulated learning behaviors. Educators should integrate strategies that encourage traditional study practices, such as note-taking and frequent review, alongside the use of digital materials, thereby supporting a balanced and deeper behavioral engagement among online learners.

Table 6. *Cognitive Engagement*

<i>Indicator</i>	<i>Mean</i>	<i>Description</i>
1. I often searched for further information when I encountered something in the LMS that puzzled me.	3.64	Strongly Agree
2. When I had trouble understanding a concept or an example, I went over it again until I understood it.	3.05	Agree
3. If I watched a video lecture that I did not understand at first, I would watch it again to make sure I understood the content.	3.02	Agree
4. I seek out additional academic resources to enhance my understanding of course content.	3.37	Strongly Agree
5. I apply knowledge from my online courses to my academic or professional work.	3.42	Strongly Agree
6. I feel online learning stimulating and intellectually rewarding.	3.00	Agree
7. I critically analyze the materials rather than just memorizing information.	3.18	Agree
Weighted Mean	3.24	Agree

Legend: 3.25–4.00, Strongly Agree; 2.50–3.24, Agree; 1.75–2.49, Disagree; 1.00–1.74, Strongly Disagree

Table 6 displays cognitive engagement in online learning. The result showed that the statement "I often searched for further information when I encountered something in the LMS that puzzled me" had the highest mean of 3.64, indicating a high level of self-driven learning and intellectual curiosity. At the same time, "I feel online learning stimulating and intellectually rewarding" received the lowest mean of 3.0; the overall weighted mean for cognitive engagement was 3.24, suggesting a strong level of intellectual engagement with the learning materials. This implied that the level of engagement in online learning in terms of cognitive engagement suggests that while learners are actively engaging in self-directed learning behaviors, they may not perceive the overall online learning experience as intellectually stimulating.

According to Singh and Rajendran (2024), they investigated cognitive engagement in an online Python programming course using the ICAP (Interactive, Constructive, Active, Passive) framework. They found that students who primarily engaged in passive behaviors (like watching lecture videos or copying examples) showed significantly lower learning gains compared to those who demonstrated constructive engagement (e.g., generating solutions or modifying code). This supports the idea that merely accessing additional information—a surface-level strategy—does not equate to the deeper cognitive investment required for meaningful learning.

In addition, Guo et al. (2023) emphasized the importance of interaction levels in online learning environments, noting that deeper interactions correlate with higher cognitive engagement. This showed that without meaningful interactions, students may struggle to achieve the level of cognitive engagement necessary for intellectual stimulation.

Table 7. *Emotional Engagement*

<i>Indicator</i>	<i>Mean</i>	<i>Description</i>
1. I was inspired to expand my knowledge in the LMS.	3.28	Strongly Agree
2. I found the LMS interesting.	3.27	Strongly Agree
3. I enjoyed watching video lectures in the LMS.	3.37	Strongly Agree
4. I feel motivated to engage with online course materials.	3.11	Agree
5. I enjoy interacting with instructors and peers in online discussions	3.41	Strongly Agree
6. I feel isolated or disconnected from my peers in online discussions.	2.28	Agree
Weighted Mean	3.12	Agree

Legend: 3.25–4.00, Strongly Agree; 2.50–3.24, Agree; 1.75–2.49, Disagree; 1.00–1.74, Strongly Disagree

Table 7 shows the respondents' emotional engagement in online learning. The highest mean score was 3.41, corresponding to the statement "I enjoy interacting with instructors and peer on online discussions", which indicates strong agreements among respondents. The lowest mean score was 2.28 for the statement "I feel isolated or disconnected from my peers in online discussions", suggested that some students experienced emotional detachment. The overall weighted mean was 3.12, interpreted as "agree," indicating a generally positive emotional connection to online learning.

This implies that, on average, students were emotionally engaged in their online learning experiences, with generally positive feelings toward the platform and interactions. This also suggested that although some students experience a sense of enjoyment in online interactions, feelings of isolation remain a concern for others, indicating varied emotional responses to the social dynamics of online learning environments.



According to the study of Fredricks, Blumenfeld, and Paris (2020) described emotional engagement as encompassing students' feelings of belonging, interest, and emotional connection to learning and their peers. The lower score on perceived isolation may reflect the ongoing challenges of creating socially rich learning environments online. However, the relatively higher enjoyment in peer and instructor interactions points to the potential of well-facilitated discussions to foster emotional connection and community.

In addition, Garrison and Cleveland-Innes (2023) argued that emotional presence in online learning is crucial for meaningful engagement, and that structured interactions with instructors and peers can help mitigate feelings of disconnection. Similarly, Rasheed et al. (2023) emphasized the importance of building emotionally supportive online spaces that encourage collaboration and reduce students' isolation.

These findings highlighted the need for course designers and educators to internationally cultivate emotionally engaging environments through regular, meaningful interactions and community building strategies. Enhancing emotional connection in online learning can strengthen students' sense of belonging, improve participation, and ultimately contribute to better learning outcomes.

In conclusion, student tend to feel emotionally engaged in online learning, especially when interactive components like discussions with instructors and peers are present. However, some level of emotional disconnection still existed for a few. strengthening peer interaction may enhance overall engagement

Table 8. *Social Engagement*

<i>Indicator</i>	<i>Mean</i>	<i>Description</i>
1. I often responded to other learners' questions.	3.38	Strongly Agree
2. I contributed regularly to course discussions.	2.71	Agree
3. I shared learning materials (e.g., notes, multimedia, links) with other classmates in the LMS.	3.27	Strongly Agree
4. I actively participate in online discussions and forums.	3.08	Agree
5. I frequently communicate with my instructors when I have questions.	3.10	Agree
6. I collaborate with classmates on group projects or discussions.	3.36	Strongly Agree
Weighted Mean	3.15	Agree

Legend: 3.25–4.00, Strongly Agree; 2.50–3.24, Agree; 1.75–2.49, Disagree; 1.00–1.74, Strongly Disagree

Table 8 present the social engagement in online learning. The result showed that the item "I often responded to other learner's questions" achieved the highest mean score of 3.38, indicating strong peer interaction, while, the item "I contributed regularly to course discussions" recorded the lowest mean score 2.71 which rated as Agree and it showed a relatively lower level of consistent participation in discussions. The weighted mean was 3.15, also interpreted as Agree, reflecting a generally good level of social involvement. This suggested that while students are relatively more responsive to peer inquiries, they may less inclined to initiate or actively contribute to general discussion threads. The data indicated a tendency toward reactive rather than proactive social engagement.

According to Yang and Lim (2024), the dynamic interplay between socio-emotional and cognitive engagement in online collaborative learning environments. It explored how fluctuations in these forms of engagement influence students' participation in collaborative tasks. Their findings revealed that positive socio-emotional interactions—such as expressions of support, encouragement, and empathy—significantly contributed to increased cognitive engagement among learners.

Conversely, neutral or disengaged social behaviors were associated with reduced cognitive involvement. This study highlights the critical role of emotionally supportive peer interactions in fostering deeper cognitive processing and sustaining collaborative learning, underscoring the importance of cultivating a socially responsive learning environment in online settings.

Additionally, Sun et al. (2023) emphasized the importance of peer interaction in fostering social presence and engagement in online learning environments. They argue that while student responsiveness is valuable, a balanced approach that incorporates both initiating and sustaining conversations yields stronger collaborative learning outcomes.

Similarly, Borup et al. (2023) stressed that frequent interaction and contribution to discussions are crucial in building a sense of community, which positively influences motivation and satisfaction. Therefore, the need for instructors to implement strategies that not only encourage students to support peers but also to initiate discussions and share original insights. Structured discussions prompts, peer-led forums, and participation-based grading could help enhance social engagement and create a more interactive, connected online learning environment.

Based on the result of the four dimensions of engagement in online which is behavioral, cognitive, social, and emotional engagement were rated them positively, with cognitive engagement receiving the highest overall mean, followed by Behavioral Engagement then the social engagement, and then emotional engagement. This suggest that while students are intellectually and socially engaged, there is still room to strengthen emotional connections within online environment.

Academic Performance of the Respondents for the Academic Year 2024-2025

Table 9 shows learners' academic performance. The results on learners' academic performance reveal that the majority of respondents achieved a GPA between 1.8 and 2.0, with 49 individuals, or 46.2%, representing the highest frequency count. In contrast, only 2



individuals 1.9% attained a GPA between 1.0 and 1.1 which marked the lowest frequency. These findings suggested that while a substantial proportion of learners achieved satisfactory academic performance, a smaller number demonstrated exceptional academic excellence. This distribution may reflect the varying degrees of engagement and adaptation to the demands of online learning environments.

Table 9. Academic Performance

Grading Scale	Frequency	Percentage (%)	Description
1.0 – 1.1	2	10.00	Outstanding
1.2 – 1.4	15	14.00	Very Satisfactory
1.5 – 1.7	40	38.00	Satisfactory
1.8 – 2.0	49	46.00	Fairly Satisfactory
Total	106	100.0	

Engagement in online learning-encompassing cognitive, behavioral, emotional, and social dimensions plays a critical role in influencing academic success. Higher levels of engagement are associated with better academic outcomes, as engaged learners are more likely to invest time, effort, and emotional energy into their studies. The concentration of learners within the mid-to-high GPA range suggested that engagement strategies may have fully supported learners in reaching the highest level of academic achievement, (Toh et al., 2024).

The study of Martin and Bolliger (2023) indicated that while online learning provided flexibility, it required strong self- regulation, motivation, and consistent interaction for students to excel academically. Furthermore, Alqurashi (2023) found that perceived learner satisfaction and engagement significantly predict academic performance in virtual settings, underscoring the importance of a well-structured, supportive online environment. These findings implied a need for institutions and educators to further enhance online engagement strategies, particularly those that promote deeper learning, self-regulation, and motivation. Providing more personalized support, fostering a stronger sense of community, and implementing adaptive learning technologies may help bridge the gap between satisfactory and outstanding academic performance in online learning environments.

Correlation Between the Respondents' Academic Performance and Engagement in Online Learning

Table 10. Relationship between Respondents' Academic Performance and Engagement in Online Learning

Variables	Academic Performance		Remarks	Decision
	r-value	p-value		
Behavioral engagement	0.051	0.603	Not Significant	Failed to reject Ho
Cognitive engagement	0.242	0.013	Significant	Reject Ho
Emotional engagement	0.050	0.609	Not Significant	Failed to reject Ho
Social engagement	0.073	0.456	Not Significant	Failed to reject Ho

Legend: 1 – based on Pearson's r Correlation; ns – P > 0.05; * – P < 0.05; ** – P < 0.01; *** – P < 0.001

Table 10 displays the relationship between the respondents' academic performance and engagement in online learning. The result showed that the respondents' academic performance was significantly correlated with social engagement. Thus, the null hypothesis, which stated no significant relationship between the respondents' academic performance and engagement in online learning, was rejected in terms of social engagement. This implied that social engagement manifested through learners' interaction, responsiveness to peers and contributions in online discussions plays a meaningful role in influencing academic outcomes.

This finding is supported by Social Constructivist Theory, particularly the work of Lev Vygotsky, which emphasized the importance of social interaction in the development of cognition and knowledge construction. According to this theory, learning is inherently a social process, and students construct understanding more effectively through collaborative dialogue and peer engagement principles that remain highly relevant in online learning environments. In Addition, Personalized learning theory emphasizes the customization of learning experiences to meet the individual needs, interests, pace, and goals of each student. Rooted in Constructivist principles, it promoted the idea that learners are more engaged when their education is relevant, flexible, and self-directed. In online learning environments, particularly in learning management system. Therefore, a learning that consist of collaboration and socialization is effective to the students.

Borup et al. (2023) further substantiated this, noting that increased social presence and learner–learner interactions in online settings lead to improved academic performance and satisfaction. Similarly, Sun et al. (2023) asserted that frequent and meaningful peer interaction contributed to greater engagement and better learning outcomes by enhancing a sense of community and motivation in virtual classrooms. Therefore, the significant correlation between social engagement and academic performance suggests that educational institutions and instructors must place greater emphasis on fostering interactive, peer supported environments in online learning platforms.

Regression Analysis Between the Respondents' Academic Performance, Demographic Profile, and Engagement in Online Learning

Table 11 presents the variables that best predict respondents' academic performance. The respondents' academic performance was affected by the emotional engagement with $\beta = -0.214$, $t = -2.138$, $p = 0.035$. This implied that, among the variables, emotional



engagement has an impact on the academic performance of the respondents.

Table 11. Variables¹ that Best Predict Respondents' Academic Performance

Indicator	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.398	.977		2.454	.016
Sex	.050	.064	.077	.771	.443
Age	-.014	.013	-.205	-1.118	.267
Online learning management system	.085	.055	.279	1.530	.129
Behavioral engagement	-.005	.019	-.026	-.259	.796
Cognitive engagement	.041	.142	.030	.290	.772
Emotional engagement	-.282	.132	-.214	-2.138	.035*
Social engagement	.055	.128	.043	.430	.668
R = 0.300		R ² = 0.090	F = 1.198	Sig. = 0.308ns	

Legend: 1 – based on Linear Regression; ns – $P > 0.05$; * – $P < 0.05$; ** – $P < 0.01$; *** – $P < 0.001$.

Emotional engagement affects the academic performance of students because it influences how motivated, connected and resilient they are in their learning process. When students feel emotionally connected to the content, instructor, or learning environment, they are more likely to invest effort and persist in learning tasks.

The R² value of 0.090 implied that the emotional engagement could explain 9% of the variance in the respondents' academic performance. Hence, 91% of the respondents' academic performance difference can be attributed to other variables not included in the regression model.

The regression analysis is insignificant, with an F-value of 1.198 and a p-value of 0.308. Therefore, the null hypothesis stating that "the respondents' demographic profile and engagement in online learning did not significantly predict academic performance" was not rejected.

This finding highlighted the critical role of learners' emotional involvement in their academic outcomes within an online learning environment. According to Deci and Ryan's Self-Determination Theory (1985), emotional engagement, reflected in feelings of interest, enjoyment, and connectedness, fosters intrinsic motivation, which in turn enhances learning performance. This parallels the Connected Learning theory developed by Ito et al. (2020). It emphasized that effective learning occurs when it is driven by students' personal interests, supported through peer collaboration, and connected to academic and real-world goals. This theory highlighted the importance of creating learning environments where students can engage deeply by pursuing topics they care about while interacting with other who share similar interest. This theory supported the observed relationship, suggesting that when students feel emotionally connected to their learning experience, they are more likely to succeed academically.

Additionally, Martin and Bolliger (2023) further explained that emotional engagement often has a more immediate and direct effect on academic achievement than other types of engagement, such as cognitive or behavioral engagement. Although emotional engagement emerged as a significant predictor, the overall regression model was not statistically significant ($F = 1.198, p = 0.308$), indicating that the combination of demographic factors and other engagement dimensions did not collectively explain a substantial portion of the variance in academic performance. This suggests that while emotional engagement plays a key role, other factors affecting performance may lie outside the scope of the measured variables or require more complex modeling approaches.

Conclusions

Based on the study's findings, it can be concluded that the engagement of graduate students in online learning at a private school in Iligan City varies across different dimensions, with cognitive and behavioral engagement emerging as areas of relative strength. Students actively sought out additional information and reviewed recorded lectures, which reflects their inclination toward independent and self-directed learning in the online environment. These behaviors suggested that the learners are generally capable of managing their academic task and are motivated to reinforce their understanding of the lessons.

However emotional and social engagement presented significant challenges. A number of students expressed feelings of isolation and disconnection during online discussions, while others appreciated interactions with instructors and peers. Social engagement tended to be more reactive than proactive, with learners more likely to respond to classmates rather than initiate contributions. These observations point to the need for more intentional strategies to foster emotional connection and build a sense of community within the virtual classroom. Additionally, Google Meet was identified as the most commonly used learning platform, indicating a preference for synchronous modes of instruction. The majority of respondents had three years or less of teaching experience, suggesting that a large portion of the graduate students are early in their professional careers and are still adjusting to the demands of online learning.

Overall, the study concluded that while cognitive and behavioral engagement are positively evident, emotional and social engagement require more focused support. Addressing these areas is essential in enhancing overall student satisfaction, interaction, and academic achievement in the context of online graduate education.

In light of the findings, as mentioned above and conclusions, the following recommendations are offered: Teachers may adopt and

integrate the use of Learning Management System in delivering learning, especially in the preparation of the visual aid/learning materials for better understanding of learning contents, and may attend seminars, trainings, and workshops to update their knowledge and usage of the latest trends in technology, particularly in Learning Management System. The school administration may play a significant role in providing teachers with technical support, as this is essential for teachers to use the Learning Management System effectively. Strengthen social engagement through collaborative activities that promote active social interaction. Educators should design group tasks, peer feedback sessions, and structured online discussion forums to facilitate this. Encouraging students to take leadership roles in discussions can also foster proactive social participation. Foster a culture of community and belonging wherein online learning environments should intentionally cultivate community through virtual social events, recognition of student contributions, and inclusive communication practices.

For future researchers, this study may serve as a basis and benchmark for further similar studies undertaken on the Learning Management System usage and engagement in online learning. This will serve as a guide to them on other suggested recommendations to go on further studies in other institutions.

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Affiliations and Corresponding Information

Aseza M. Romoros

St. Peter's College – Philippines

Erlinda N. Basmayor, PhD

St. Peter's College – Philippines