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Motivation and Challenges on the Use of Educational Technology and Teaching-Learning Materials among University Students

Jesszon B. Cano[1], Rex T. Argate[2], Kingie G. Micabalo[3]

[1]Innovation and Technology Support Office, Bohol Island State University, Philippines
Email: jesszon.cano@bisu.edu.ph
[2]College of Teacher Education, University of Cebu - Main, Philippines
Email: rargate@uc.edu.ph
[3]College of Business and Accountancy, University of Cebu Lapu-lapu and Mandaue, Philippines
Email: kmicabalo@uc.edu.ph

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Abstract

This study assessed the level of motivation and challenges on the use of educational technology and teaching–learning materials among university students of Bohol Island State University (BISU), Academic Year 2025–2026. Specifically, it examined the respondents' profiles in terms of age, gender, academic program covered, year level, and familiarity with technology; determined their level of motivation in using educational technology and teaching–learning materials; identified the problems encountered; tested the relationship between respondents' profiles and motivation level; and proposed an action plan based on the findings. The study employed a descriptive research design using a stratified random sampling technique to select 385 respondents across BISU campuses. Data were collected through survey questionnaires and analyzed using frequency counts, weighted means, and chi-square tests. Results revealed that respondents were mostly 20–29 years old, predominantly female, and moderately to highly familiar with technology. Students reported a high level of motivation when technology and materials provided clear explanations, relatable examples, organized content, and opportunities for application. However, they encountered recurring challenges such as unstable internet connections, limited access to personal devices, and difficulties accessing materials requiring strong connectivity. Statistical analyses further showed no significant association between students' demographic profile and their level of motivation. Based on the findings, a Strategic Action Plan was formulated to enhance student engagement and address recurring challenges. The plan emphasizes improving internet access, expanding availability of learning devices, strengthening technical support and digital training, and ensuring that teaching–learning materials are updated, organized, and learner-centered. The results of this study contribute to the growing body of knowledge on digital education and provide practical recommendations for academic institutions in fostering meaningful and motivating learning experiences.

Keywords*— *Educational technology, Teaching-learning materials, Student motivation, Learning challenges, University Students, Bohol Island State University

I. INTRODUCTION

The rapid evolution of digital technologies is reshaping not only economies and governance but also the landscape of higher education. Within this transformation, universities have an essential function of integrating educational technologies and teaching-learning materials that aim to improve both

instructional delivery and student engagement. Information and Communication Technology (ICT) has been recognized for its potential to enhance educational quality by making learning more accessible, interactive, and student-centered. However, understanding the specific motivations that drive students to embrace these tools, along with the challenges they encounter in using them, is critical. Gaining such insights is essential for ensuring the sustained and effective adoption of digital learning strategies in university settings (Xia et al., 2024).

Emerging technologies like social media, mobile phones, and tablets have been integrated into the educational system, giving rise to new web-based course delivery methods that enhance teaching and learning. One such method is the "flipped classroom," where students watch instructional videos and practice problems at home, while class time is reserved for group problem-solving. Video lectures are crucial for the flipped classroom model. Teachers create and upload these video lectures to a personal learning management system (LMS) or public streaming platforms such as YouTube, Vimeo, or Google Meet. In class, students engage in problem-solving, in-depth discussions, deeper conceptual exploration, and peer interaction (Dublar, 2023).

The digital revolution has enabled unrestricted access to information worldwide.

Modern classrooms now feature numerous ICT tools, and most instructors have advanced in using digital technology to enhance students' access to information and facilitate collaborative learning. To remain competitive and deliver high-quality education, higher education institutions must harness the power of ICT in response to digital transformation and disruptive technological innovations (Haleem et al., 2022). Moreover, Saudi Arabia has implemented various strategies and initiatives to support the 17 Sustainable Development Goals (SDGs). This ambitious plan emphasizes the enhancement and promotion of higher education, as well as the development of curricula. Additionally, Vision 2030 aims to elevate educational standards globally (Islam & Ali, 2024).

The researcher observed that the use of educational technology and teaching-learning materials significantly enhances student engagement in higher education. These technologies, such as interactive digital platforms, multimedia content, and virtual collaboration tools, make learning more interactive and accessible. Students show increased participation and motivation when they are provided with diverse and dynamic resources that cater to various learning styles.

Existing literature has explored various dimensions of student motivation in utilizing educational technology and teaching-learning materials. Gamage et al. (2022) examined the effectiveness of online and hybrid learning modalities in enhancing student engagement and academic experiences. Similarly, Clarin and Baluyos (2021) investigated the relationship between student engagement and teaching competence in the context of online distance learning. Cadiz et al. (2020) also contributed to this discourse by examining how pedagogical beliefs influence the integration of technology among educators in Philippine higher education institutions. While these studies provide valuable perspectives, there remains a notable gap in research focusing specifically on the motivation and challenges experienced by university students in state institutions within the province of Bohol. Addressing this gap is essential to inform localized strategies that support meaningful technology adoption and improved learning outcomes.

The researcher is well-positioned to undertake this study, possessing advanced knowledge in Educational Technology and a strong background in academic research, including multiple peer-reviewed publications. With practical experience in implementing and evaluating digital learning tools in higher education institutions, the researcher has also provided training for educators on the effective integration of technology in teaching and learning. In addition, the researcher has substantial technical expertise in the use of educational technologies and learning management systems.

An established professional network with stakeholders in state universities will support efficient access to essential data, resources, and respondents. This research responds to a critical gap in understanding the motivation and challenges university students face in using educational technology and teaching-learning materials—insights that are vital for guiding future technology investments and enhancing student engagement and learning outcomes in state universities.

OBJECTIVES

This study assessed the level of motivation and challenges in the use of educational technology and teaching–learning materials among university students at Bohol Island State University, Bohol, A.Y. 2025–2026. Specifically, the study sought answer the following: 1.) the profile of the respondents in terms of: age, gender,

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academic program covered, year level, and familiarity with technology; 2.) the level of motivation of the respondents on the use of educational technology and teaching-learning materials; 3.) the problems encountered by the respondents on the use of educational technology and teaching-learning materials; and 4.) the significant relationship between the profile of the respondents and the level of their motivation on the use of educational technology and teaching-learning materials.

II. RESEARCH METHODOLOGY

Research Design

This study utilized the descriptive–correlational method using a researcher-made survey questionnaire.

Research Environment

This study was conducted at Bohol Island State University (BISU), a public higher education institution in the province of Bohol, Philippines, composed of multiple campuses that offer diverse academic programs. BISU accommodates students with varied technological exposure and learning environments, making it an appropriate setting to explore students' motivation in using educational technology and teaching-learning materials. The university's campuses reflect a range of digital readiness and resource availability, which may influence how students respond to and benefit from technological tools in their academic activities.

Research Respondents

The respondents of this study were undergraduate students enrolled across the various campuses of Bohol Island State University (BISU). To ensure a diverse and representative sample, a stratified random sampling technique was employed. Each BISU campus served as a stratum, and within each stratum, students were randomly selected from different academic programs and year levels. This approach ensured that the sample reflected variations in program specialization, campus resources, and levels of technological exposure. Only students who had experience using educational technology and teaching–learning materials in their coursework were included in the study, as their perspectives were essential in evaluating both their motivation to use these tools and the specific challenges, they encountered in doing so.

Research Instruments

The primary research instrument for this study was a structured survey questionnaire designed to collect quantitative data on students' motivation and the challenges they faced in using educational technology and teaching–learning materials. The questionnaire consisted of three main sections. The first section gathered demographic information, including age, gender, academic program, year level, and familiarity with technology. The second section focused on the students' level of motivation in the use of educational technology and teaching–learning materials, while the third section identified the problems encountered by the students in their use.

The instrument underwent a pre-testing process to ensure its reliability and validity. Based on pilot feedback, necessary revisions were made before the final administration. To ensure accessibility and inclusiveness, the survey was distributed in both online and printed formats, accommodating students with different levels of access and preferences. The data obtained from this instrument were analyzed to identify trends and correlations related to student motivation and the challenges encountered in the use of educational technology within the university context.

Table 1: Distribution of Respondents per Campus

Campus	Population (N)	Sample Size (n)
Tagbilaran Campus	7,612	183
Bilar Campus	3,571	65
Calape Campus	1,759	32
Clarin Campus	1,404	26
Balilihan Campus	2,229	41
Candijay Campus	2,079	38
Total	**18,654**	**385**

Research Procedure

Data Gathering. The researcher administered a structured survey questionnaire to selected students at Bohol Island State University (BISU). The survey was distributed both online and in printed format to accommodate students' accessibility and preferences, thus encouraging maximum participation. Before full implementation, a pilot test was conducted among a small group of students to evaluate the clarity, reliability, and validity of the instrument. Once finalized, the survey was deployed to a broader sample of students across various campuses, academic programs, and year levels.

Treatment of Data. Frequency count and percentage are used to analyze and interpret the profile of the respondents and the problems they encounter on

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the use of educational technology and teaching-learning materials. The weighted mean is used to analyze and interpret the students' levels of motivation in relation to their use of educational technology and teaching-learning materials. The chi-square test of independence is used to determine the significant relationship between the profile of the respondents and their level of motivation on the use of educational technology and teaching-learning materials.

III. RESULTS AND DISCUSSIONS

This section presents and interprets the results of the respondents' assessments along with their implications. It is organized into three sections. The first section outlines the respondents' demographic profiles, including age, gender, academic program covered, year level, and technological familiarity. The second section discusses the respondents' level of motivation in utilizing educational technology and teaching-learning materials. The third section highlights the challenges faced by the respondents on the use of educational technology and teaching-learning materials.

Profile of the Respondents

This part presents the demographic profile of the respondents, covering essential variables such as age, gender, academic program covered, year level, and their level of familiarity with educational technology. The information is systematically organized and summarized in Table 2 to give a clear overview of the respondents' distribution across the different categories.

Table 2: Profile of the Respondents

(n = 385)

Profile of the Respondents		ƒ	%
Age group	18-19 yo	44	11
	20-29 yo	336	87
	30-39 yo	5	1
Gender	Female	266	69
	Male	114	30
	Prefer not to say	5	1
Academic Program Covered	Agriculture & Natural Sciences	23	6
	Arts and Sciences	13	3
	Business and Management	48	13
	Computing & Information Sciences	14	4
	Criminal Justice	13	3
	Engineering & Architecture	48	13
	Fisheries	5	1
	Fisheries & Marine Sciences	8	2
	Midwifery	3	1
	Sciences	9	2
	Teacher Education	85	22
	Technology	99	26
	Technology & Allied Sciences	17	4
Year Level	First Year	93	24
	Fourth Year	93	24
	Second Year	105	27
	Third Year	94	24
Technology Familiarity	Expert	3	1
	Very Familiar	155	40
	Moderately Familiar	194	50
	Somewhat Familiar	29	8
	Not Familiar at All	4	1
	Total	**385**	**100**

Most respondents were 20–29 years old (87%), predominantly female (69%), and mainly enrolled in Technology (26%) and Teacher Education (22%) programs. Students were fairly balanced across year levels, with second-year students slightly higher (27%). In terms of digital skills, most were moderately familiar (50%) or very familiar (40%) with technology, while very few were experts or unfamiliar.

This profile suggests that respondents are largely young, digitally literate, and evenly distributed across programs and year levels. Thus, motivation toward educational technology is less likely to be influenced by demographics and more likely shaped by factors such as internet stability, device access, and the quality of learning materials.

This finding aligns with the study of Granić (2022), which emphasized that while age and gender may provide general insights into learners' backgrounds, these demographic factors have minimal influence on students' willingness to adopt and engage with educational technologies. Instead, external factors

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such as accessibility, quality of digital resources, and institutional support play a more decisive role in shaping students' motivation and engagement.

Similarly, Amaniampong and Hartmann (2023) highlighted that the effectiveness of technology integration in higher education is contingent on contextual factors—such as availability of stable internet connectivity and adequacy of devices—rather than the demographic profiles of learners. This suggests that for a young and digitally literate student population, like those in BISU, ensuring supportive infrastructures and high-quality materials is critical in maximizing the benefits of educational technology.

Level of Motivation on the Use of Educational Technology and Teaching-Learning Materials

This part presents the respondents' level of motivation on the use of educational technology and teaching-learning materials. The results reflect how students perceive various features of digital tools and instructional resources in terms of their ability to enhance learning and sustain interest. The data is systematically organized and summarized in Table 3 to provide a clear overview of the extent to which these tools and materials contribute to student motivation.

The section also serves to identify the key motivational factors that influence students' engagement with technology-based and traditional learning resources. By examining how these tools support comprehension, participation, and skill application, the analysis provides valuable insights into how effectively educational technology and teaching-learning materials are integrated into the learning environment. This examination further highlights the relationship between instructional design and students' willingness to utilize available learning aids, setting the groundwork for recommendations aimed at improving motivation and academic performance.

Table 3: Level of Motivation on the Use of Educational Technology

(n = 385)

I.	**A. Educational Technology**. I become motivated when educational technology provides…	**Ave.**	**Motivation Level**
1	easier ways to understand difficult lessons.	3.43	Highly Motivated
2	quick access to learning resources and references.	3.53	Highly Motivated
3	immediate feedback on my academic performance.	3.42	Highly Motivated
4	visual aids that help me grasp complex topics.	3.48	Highly Motivated
5	simulations that make concepts more realistic.	3.45	Highly Motivated
6	interactive tasks that challenge my thinking.	3.42	Highly Motivated
7	opportunities to apply what I've learned.	3.49	Highly Motivated
8	organized content that helps me study better.	3.48	Highly Motivated
9	features that let me learn at my own pace.	3.45	Highly Motivated
10	videos and audio that explain lessons clearly.	3.48	Highly Motivated
11	summaries to help me review key points.	3.51	Highly Motivated
12	quizzes or exercises that improve my problem-solving skills.	3.42	Highly Motivated
13	step-by-step guides for learning new topics.	3.52	Highly Motivated
14	higher-level thinking activities.	3.39	Highly Motivated
15	clear and simple explanations to reduce confusion.	3.50	Highly Motivated
	Aggregate Average	**3.46**	**Highly Motivated**

In terms of educational technology, the aggregate average of 3.46, interpreted as *Highly Motivated*, indicates that the 385 respondents generally perceive educational technology as a strong motivational factor in their learning. This overall high mean suggests that students are consistently encouraged by various features of educational technology, particularly those that provide quick access to resources, clear explanations, structured content, interactive activities, and opportunities for application. The narrow range of item means further reflects a shared positive perception among learners.

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However, when considering the respondents' level of technology familiarity, a nuanced picture emerges. While a majority reported being *Very Familiar* (155 respondents, 40%) or *Moderately Familiar* (194 respondents, 50%) with technology, a notable minority indicated being *Somewhat Familiar* (29 respondents, 8%) or *Not Familiar at All* (4 respondents, 1%). This suggests that despite the overall high motivation associated with educational technology, a portion of learners may face challenges in fully leveraging these tools due to lower technological proficiency. The discrepancy highlights the need for targeted support and scaffolding to ensure that students with lower technology familiarity can equally benefit from educational technology, maintaining motivation across the entire learner population.

Recent empirical studies underscore the motivational benefits of educational technology while also highlighting the critical role of learners' technology familiarity and self-efficacy in shaping engagement and satisfaction. A systematic review by Alé and Arancibia (2025) found that technology-based motivational strategies, such as interactive and adaptive tools, significantly enhance students' attention, confidence, and satisfaction—core components of motivation in digital learning environments. Supporting this, Mekheimer's (2025) mixed-methods study revealed that *technological self-efficacy* significantly predicts the use of e-learning strategies and overall learner satisfaction, suggesting that learners' confidence in using technology enhances their engagement with digital learning tools.

Similarly, Getenet et al. (2024) reported that positive attitudes toward digital technology and higher digital literacy contribute to stronger self-efficacy, which in turn positively influences multiple dimensions of online engagement, including behavioral and cognitive involvement. These findings indicate that while educational technology can be intrinsically motivating, students' familiarity and competence with technology are pivotal in translating motivational potential into effective engagement and learning outcomes.

The top three highest motivating indicators were *opportunities to apply what students have learned* ($\bar{x}$ = 3.49), *organized content that helps them study better* ($\bar{x}$ = 3.48), and *both visual aids and videos or audio that explain lessons clearly* ($\bar{x}$ = 3.48). These findings imply that students are most motivated when technology enables them to put learning into practice, provides structured materials for easier study, and integrates multimedia elements that enhance understanding. According to Sabri et al. (2024), multimedia elements, when aligned with cognitive theory, enhance understanding and retention by combining visual and verbal information, thereby strengthening students' motivation to learn through technology-enhanced instruction.

On the other hand, the top three lowest indicators, though still rated as highly motivating, were *interactive tasks that challenge thinking* ($\bar{x}$ = 3.42), *immediate feedback on academic performance* ($\bar{x}$ = 3.42), and *quizzes or exercises that improve problem-solving skills* ($\bar{x}$ = 3.42). This suggests that while students value interactive and feedback-driven activities, they may not view them as strongly motivating compared to application-oriented and visually supportive tools. Kencana (2025) found that students' motivation decreases when technology integration lacks sufficient scaffolding or when learners are left to navigate complex tasks independently. Therefore, structured support and guided interactivity are essential in maintaining engagement in digital learning contexts.

Table 4: Level of Motivation on the Use of Teaching-Learning Materials

(n = 385)

II.	**B. Teaching-Learning Materials**. I become motivated when teaching-learning materials provide…	**Ave.**	**Motivation Level**
1	clear explanations of the lesson.	3.60	Highly Motivated
2	examples that help me understand the topic better.	3.62	Highly Motivated
3	illustrations or diagrams that simplify the content.	3.57	Highly Motivated
4	organized and easy-to-follow content.	3.57	Highly Motivated
5	activities that develop my thinking skills.	3.54	Highly Motivated
6	review questions at the end of each topic.	3.52	Highly Motivated
7	summaries that help me retain information.	3.55	Highly Motivated
8	tasks that let me apply what I've learned.	3.52	Highly Motivated

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9	real-life examples I can relate to.	3.56	Highly Motivated
10	worksheets that challenge my understanding.	3.46	Highly Motivated
11	step-by-step instructions for complex tasks.	3.53	Highly Motivated
12	structured outlines that guide my learning.	3.48	Highly Motivated
13	content that matches the lesson objectives.	3.51	Highly Motivated
14	practice questions that prepare me for assessments.	3.50	Highly Motivated
15	consistent and updated academic content.	3.51	Highly Motivated
	Aggregate Average	**3.54**	**Highly Motivated**

In terms of Teaching-Learning Materials (TLMs), the aggregate average of 3.54, interpreted as *Highly Motivated*, indicates that the 385 respondents generally perceive TLMs as a significant motivational factor in their learning. This high mean suggests that learners are consistently encouraged by the availability and quality of instructional materials, including textbooks, visual aids, worksheets, and multimedia resources, which help clarify concepts, support structured learning, and provide opportunities for practice and application. The narrow range of item means further reflects a shared positive perception among learners.

However, when considered alongside students' level of technology familiarity, a more nuanced interpretation emerges. While most respondents reported being *Very Familiar* (155 respondents, 40%) or *Moderately Familiar* (194 respondents, 50%) with technology, a small but notable portion indicated being *Somewhat Familiar* (29 respondents, 8%) or *Not Familiar at All* (4 respondents, 1%). This suggests that although TLMs are generally motivating, learners with lower technological familiarity may face difficulties accessing or utilizing digital and multimedia instructional materials effectively. Therefore, ensuring that materials are user-friendly and supplemented with guidance or scaffolding is important to maximize motivation and engagement for all learners.

Recent research highlights the importance of teaching-learning materials in fostering motivation and engagement, while also pointing to the role of students' familiarity and self-efficacy in optimizing their use. A study by Li and Chen (2025) found that high-quality instructional materials—including interactive multimedia and structured worksheets—enhance student engagement, comprehension, and intrinsic motivation in classroom and online settings.

Additionally, Mekheimer (2025) emphasized that technological self-efficacy significantly influences learners' ability to use digital instructional resources, indicating that students with lower familiarity may not gain the full motivational benefits of TLMs. Similarly, Getenet et al. (2024) reported that positive attitudes toward instructional technologies and higher digital literacy strengthen engagement, suggesting that accessible and well-designed materials, paired with support for learners with limited technological experience, are crucial for sustaining motivation across diverse student populations.

The highest motivating factors were *examples that helped students understand the topic better* ($\bar{x}$ = 3.62), *clear explanations of the lesson* ($\bar{x}$ = 3.60), and *illustrations or diagrams that simplified the content* ($\bar{x}$ = 3.57). These results highlight that students are particularly motivated by clarity, concrete examples, and visual representations that simplify complex concepts. Lan (2024) reported that students exhibit greater motivation when instructional materials are visually appealing and aligned with real-life applications, as such designs foster deeper engagement and sustained attention during the learning process.

Meanwhile, the three lowest indicators were *consistent and updated academic content* ($\bar{x}$ = 3.50), *content that matches the lesson objectives* ($\bar{x}$ = 3.51), and *practice questions that prepare students for assessments* ($\bar{x}$ = 3.51). While still rated positively, these areas suggest that accuracy and alignment, though important, may not be as motivating as clarity and relatable examples in stimulating student engagement. Seaba and Alorh (2022) emphasized that outdated and text-heavy materials can diminish learner satisfaction and motivation, underscoring the need for continuous updates and improvements in both design and relevance of instructional resources.

Taken together, the aggregate average for educational technology was 3.46, while that of teaching–learning materials was slightly higher at 3.54. This resulted in an overall high motivation level of 3.50. These findings suggest that students' motivation is strengthened when learning tools and materials are

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accessible, structured, and interactive, while also offering clarity, relatable examples, and opportunities for application. Hence, a balanced integration of both digital and traditional resources appears crucial in sustaining student engagement and enhancing learning outcomes. Procel et al. (2024) found that students' motivation in technology-integrated learning environments depends largely on the perceived usefulness, clarity, and organization of the tools used—highlighting that well-structured design continues to be a key driver of educational motivation.

Problems Encountered on the Use of Educational Technology and Teaching–Learning Materials

This section presents the problems encountered by university students in relation to the use of educational technology and teaching–learning materials. It outlines various challenges that students may experience in digital and blended learning settings, including those related to connectivity, device accessibility, platform usability, and instructional support. For clarity and organization, these concerns are systematically arranged and summarized in Table 5.

Table 5: University Students' Problems Encountered on the Use of Educational Technology and Teaching–Learning Materials

(n = 385)

Nos.	University Students' Problems Encountered on the Use of Educational Technology and Teaching-Learning Materials	ƒ	Rank
1	Slow or unstable internet connection when attending online classes or accessing learning platforms.	297	1
2	Limited access to a personal device (laptop, tablet, or smartphone) for schoolwork.	241	2
3	Struggle to use some online learning platforms or apps due to a lack of digital skills.	190	6
4	Frustrated when the platform suddenly crashes or stops working while I am studying.	204	4
5	Difficult to navigate our learning system because it is not easy to use.	96	15
6	Did not receive enough orientation or training on how to use the school's online platforms.	80	18
7	Rarely get help from my instructors when I encounter technical problems.	89	17
8	Find it hard to concentrate during long periods of screen-based learning.	157	9
9	The learning materials provided are outdated or not relevant to the current lesson.	60	19
10	Lose interest when materials are mostly text and do not include videos or visuals.	159	8
11	Get confused when the materials are disorganized or not clearly explained.	200	5
12	The materials used do not match my learning style (e.g., I prefer visuals or activities).	94	16
13	Feel unmotivated when the materials do not include exercises or activities.	89	17
14	Sometimes cannot access the materials because they need strong internet or certain apps.	214	3
15	Overwhelmed when too many materials are uploaded without clear instructions.	166	7
16	Have difficulty understanding lessons when there is no video or	152	10

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	audio explanation included.		
17	Stress when multiple platforms are used for one subject or class.	140	12
18	Discouraged when the instructor does not explain how to use new apps or tools.	116	14
19	Cannot always participate in online activities due to limited mobile data or load.	142	11
20	Miss deadlines because I am not notified properly through the platform or materials used.	119	13

The results show that the three most pressing challenges students faced in using educational technology and teaching–learning materials were: *slow or unstable internet connection* (Rank 1, f = 297), *limited access to a personal device such as laptops, tablets, or smartphones* (Rank 2, f = 241), and *inaccessibility to platforms or apps due to strong internet requirements* (Rank 3, f = 214). These findings highlight the persistent issue of the digital divide, where unequal access to stable connectivity and devices directly impacts students' ability to participate effectively in online or technology-enhanced learning. This aligns with the study of Ndibalema (2022), who found that poor connectivity and insufficient device ownership were among the top barriers to e-learning in higher education, particularly in developing regions.

On the other hand, the three least-reported challenges were: outdated or irrelevant learning materials (Rank 20, f = 60), lack of sufficient orientation or training on how to use the school's online platforms (Rank 19, f = 80), and two challenges that shared the same rank—limited instructor assistance when encountering technical problems (Rank 17.5, f = 89) and difficulty understanding instructions in some online materials (Rank 17.5, f = 89).

These findings indicate that while technical access and connectivity were the most pressing concerns, content-related and instructional support issues were less frequently experienced but still play a crucial role in students' overall learning experience. This aligns with the study of Kupchyk and Litvinchuk (2025), who noted that the long-term success of technology-enhanced learning relies not only on access to tools but also on continuous content development, proper orientation, and teacher guidance to help students navigate digital learning environments effectively.

These findings highlight the interplay between infrastructural and pedagogical barriers in students' use of educational technology and teaching–learning materials. While internet connectivity and access to devices represent infrastructural issues, concerns such as lack of orientation, limited technical support, and unengaging content are pedagogical in nature. Chari (2024) emphasized that addressing both dimensions simultaneously is essential to ensure that students not only gain access to technology but also develop the skills and confidence to utilize it effectively. Focusing on one aspect alone risks perpetuating learning inequalities, even when technological access improves.

Furthermore, the implications underscore the importance of adopting student-centered strategies in the integration of technology. When learners experience insufficient guidance, a lack of technical help, or poorly designed content, their motivation and engagement tend to decline. Saleh (2025) observed that while connectivity challenges may be structural and often beyond institutional control, the provision of responsive support and interactive learning materials can substantially enhance students' persistence in technology-mediated learning. In this sense, institutions must prioritize both digital infrastructure and sustained instructional support to optimize educational outcomes.

Overall, the results indicate that students' challenges were shaped by the dual influence of external access limitations and internal instructional shortcomings. Addressing these holistically will help create a more equitable and engaging learning environment. Vo (2020) affirmed that both access to reliable technology and the quality of instructional design determine the extent of students' motivation and success in online and blended learning settings. Therefore, institutions should not only focus on improving connectivity and device accessibility but also strengthen the pedagogical design of digital materials to promote meaningful and sustainable technology-enhanced learning.

Significant Relationship Between the Profile of The Respondents and The Level of Their Motivation

This section presents the chi-square tests conducted to determine whether there is a significant

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relationship between students' motivation levels on the use of educational technology and teaching–learning materials and their demographic characteristics, including age, gender, academic program covered, year level, and technology familiarity. The results are systematically summarized in Tables 6 and 7 for clarity and comparison.

Table 6: Chi-Square Test on the Relationship Between the Profile of the Respondents and Their Level of Their Motivation on the Use of Educational Technology

(n = 385)

Profile of the Respondents	n	Chi-Square Value	df	p-Value	Decision on Ho	Significance
1. Age	385	2.897	6	0.82	Fail to reject	Not Significant
2. Gender	385	8.401	6	0.21	Fail to reject	Not Significant
3. Programs	385	30.107	36	0.74	Fail to reject	Not Significant
4. Year Level	385	9.162	9	0.42	Fail to reject	Not Significant
5. Technology Familiarity	385	17.577	12	0.13	Fail to reject	Not Significant

a = 0.05 level of significance

The Chi-Square test results indicate that there is no significant relationship between the profile of the respondents and their level of motivation in using educational technology. Specifically, age (χ^2 = 2.897, df = 6, p = 0.82), gender (χ^2 = 8.401, df = 6, p = 0.21), program of study (χ^2 = 30.107, df = 36, p = 0.74), and year level (χ^2 = 9.162, df = 9, p = 0.42) all failed to reach statistical significance at the 0.05 level. This suggests that motivation to use educational technology is consistent across different demographic and academic profiles, indicating that learners' enthusiasm and drive to engage with digital tools are generally uniform regardless of age, gender, program, or year level.

These results imply that the motivational impact of educational technology is broadly experienced among learners and may be intrinsically linked to the features of the technology itself, such as its interactivity, accessibility, and relevance to learning tasks. This finding is consistent with studies by Ghai and Tandon (2023), which emphasize that educational technology can enhance learner motivation independently of demographic differences.

Table 7: Chi-Square Test on the Relationship Between the Profile of the Respondents and Their Level of Their Motivation on the Use of Teaching-Learning Materials

(n = 385)

Profile of the Respondents	n	Chi-Square Value	df	p-Value	Decision on Ho	Significance
1. Age	385	3.437	6	0.75	Fail to reject	Not Significant
2. Gender	385	9.918	6	0.13	Fail to reject	Not Significant
3. Programs	385	33.24	36	0.6	Fail to reject	Not Significant
4. Year Level	385	10.449	9	0.32	Fail to reject	Not Significant
5. Technology Familiarity	385	13.066	12	0.36	Fail to reject	Not Significant

a = 0.05 level of significance

The Chi-Square test results in Table 7 indicate that there is no significant relationship between the profile of the respondents and their level of motivation in using teaching-learning materials (TLMs). Age (χ^2 = 3.437, df = 6, p = 0.75), gender (χ^2 = 9.918, df = 6, p = 0.13), program of study (χ^2 = 33.24, df = 36, p = 0.60), and year level (χ^2 = 10.449, df = 9, p = 0.32) all failed to reach statistical significance at the 0.05 level. This suggests that learners' motivation to engage with TLMs is generally consistent across different demographic and academic profiles, regardless of differences in age, gender, program, or year level.

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These findings imply that the motivational effect of TLMs is broadly experienced among students and may be intrinsically linked to the qualities of the materials themselves, such as their clarity, relevance, and ability to support structured learning and practice. This aligns with research by Ajlouni et al. (2022), which emphasizes that high-quality and well-structured instructional materials can enhance learner motivation and engagement independently of demographic characteristics.

IV. CONCLUSION

This study revealed that university students of Bohol Island State University, A.Y. 2025–2026, generally exhibited a high level of motivation on the use of educational technology and teaching–learning materials. Their motivation was fostered more by the accessibility, clarity, and organization of the tools rather than by their age, gender, academic program covered, year level, or technological familiarity, as no significant associations were found between these profile variables and motivation. Despite the positive outlook, students continued to face recurring challenges, particularly with unstable internet connections, limited access to personal devices, and issues related to disorganized or inaccessible materials.

The findings highlight the need for institutions to strengthen digital infrastructure, ensure the availability of learning resources, and provide student support systems that reduce barriers to engagement. By addressing these challenges and refining the design and delivery of technology-based learning materials, the university can further enhance student motivation and learning outcomes. Ultimately, this study emphasizes that while student demographics play little role in shaping motivation, the quality, accessibility, and effectiveness of educational tools remain crucial drivers of academic engagement and success.

V. RECOMMENDATIONS

Based on the findings, it is recommended that Bohol Island State University strengthen its digital infrastructure by improving internet accessibility within the campus and providing alternative support for students with limited access to personal devices. The university may also consider establishing a lending program for gadgets or facilitating partnerships with external organizations to make devices more affordable to students.

Furthermore, faculty members and content developers are encouraged to design and organize digital materials in ways that are user-friendly, accessible even with low bandwidth, and aligned with students' learning needs. Regular training and workshops may also be conducted to ensure that both teachers and students are equipped with strategies for maximizing educational technology. Finally, continuous monitoring and evaluation of technology use in teaching and learning should be implemented to address issues promptly and sustain student motivation.

In line with these recommendations, future researchers may explore related areas to deepen the understanding of technology integration in higher education:

1. Impact of Improved Digital Infrastructure on Student Engagement and Academic Performance;
2. The Effectiveness of Gadget Lending Programs and Institutional Partnerships; and
3. Design and Evaluation of Low-Bandwidth, Student-Centered Learning Materials.

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