

Enhancing Learning Continuity: A Case Study on the Effective Utilizations of eLearning to Mitigate Class Suspensions at St. Paul University-Surigao



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ABSTRACT: This study investigated the effectiveness of eLearning designs and learning outcomes at St. Paul University-Surigao's College of Business and Technology. A mixed-methods approach was employed, utilizing a descriptive survey (n=220) and a qualitative thematic analysis of student feedback. A survey revealed generally positive student perceptions of instructional design and learning outcome achievement. However, these perceptions varied across programs, suggesting a need for tailoring. Qualitative analysis, importantly, identified both positive aspects (flexibility, self-learning) and challenges (limited interaction and engagement, technical issues, instructor quality). These challenges, crucial for educators and researchers to be aware of, resonate with broader discussions on the barriers to effective eLearning implementation. This study contributes to the understanding of effective eLearning practices in higher education. The findings emphasize the importance of well-designed online courses that balance student autonomy with strategies to address engagement, social interaction, and access barriers.

KEYWORDS: eLearning, instructional design, learning outcomes, self-learning.

I. INTRODUCTION

The convergence of information technology and the global pandemic has led to a significant change in the field of education. Traditional classroom settings have given way to technologically driven pedagogical approaches, reducing the dependence on physical instructor presence (Mahyoob, 2020). The emergence of online learning, facilitated by learning management systems, has created a virtual environment where educators and learners engage in synchronous or asynchronous interactions, transcending geographical barriers (Zhang & Wu, 2022). This transition aims to enhance accessibility, reduce costs, and promote productivity while fostering autonomous learning (Veale, 2022). Additionally, it seeks to promote positive education online, further advancing the science and sustainability of positive education (Lou & Xu, 2022).

The effectiveness of online learning (eLearning) in empowering learners to govern their educational trajectories and fostering self-discipline has been supported by various studies. Tang et al. (2022) found that self-efficacy positively moderated the relationship between students' learning engagement and learning effectiveness in blended instruction, emphasizing the role of self-discipline in learning effectiveness. Djazilan et al. (2022) also highlighted the significant influence of self-discipline on teacher performance, indicating its importance in educational settings. Acknowledging the potential of online learning, St. Paul University-Surigao implemented a block scheduling system as a departure from traditional teaching schedules. However, challenges ensued, marked by recurrent class suspensions attributed to in-school activities, natural disasters, unforeseen holidays, and faculty engagements off-campus. These disruptions precipitated incomplete modules and hindered the attainment of competencies.

In response to the challenges posed by the block scheduling system, the advent of the COVID-19 pandemic necessitated an expeditious transition to comprehensive online learning at St. Paul University-Surigao. While a variety of online platforms were deployed, concerns emerged regarding the quality of learning. Student feedback revealed issues such as instructors merely uploading presentations without substantive discussions, an absence of guide questions, and limited avenues for communication. This abrupt shift raised pertinent questions regarding the efficacy of online classes, particularly for students unaccustomed to eLearning tools or grappling with restricted internet connectivity.

This research endeavor seeks to systematically assess the effectiveness and potential variations of online classes across academic programs. It will focus on the effectiveness of instructional designs and learning outcomes deployed to achieve predefined learning objectives. Additionally, the study aims to identify challenges encountered by students within the eLearning environment

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and propose recommendations for refining eLearning modules. As this research recognizes the pivotal role of evaluation in comprehending the quality and efficacy of online classes, it seeks to offer valuable guidance to educators, helping them refine their instructional methodologies to align with course goals and objectives.

Online learning and instructional design

Instructional design is a critical component of online learning, encompassing the creation of instructional materials, modules, and lessons, addressing learner needs, defining objectives, planning assessments, and designing teaching and learning activities (Pribadi & Chung, 2023). It plays a pivotal role in crafting meaningful and effective instructions for online courses, facilitating students' understanding of covered topics and concepts (Martin & Bolliger, 2022). The systematic and holistic steps of instructional system design models guide instructional designers in planning and producing effective and efficient online learning programs (Ou et al., 2019). The literature further accentuates the relevance of instructional design in online learning. Lim et al. (2019) identify issues of instructional clarity in online instruction delivery, stressing the importance of effective instructional design. Additionally, Jiang & Lim (2022) highlight the heightened attention to online learning during the COVID-19 pandemic, underscoring the imperative for effective instructional design to support and robustly enhance the online learning environment. Collectively, these studies reinforce the pivotal role of instructional design in shaping successful online learning experiences.

Enhancing instructional design for today's learners

Research demonstrates the evolving nature of instructional design, highlighting the imperative for continuous development and adaptation to address the evolving needs of online learners and the dynamic educational landscape (Halupa, 2019). Collaborative efforts with instructional designers have been identified as a valuable strategy to enhance online instructor competencies (Martin et al., 2021; Sanchez & Saranza, 2023). The effectiveness of instructional design holds particular significance for students' success in the online learning environment (Jiang et al., 2019). Additionally, the incorporation of design thinking into instructional design has shown promise in elevating the design and development of course materials (She et al., 2021). The characteristics of instructional systematic design in online teaching underscore the collaborative approach and the crucial role of reliably and validly assessed outcomes (Prasetya, 2021).

Central to online courses are learning objectives, serving as the cornerstone for the course's purpose and facilitating the organization of eLearning content for a more immersive learning experience (Stark, 2019). The importance of well-defined learning objectives in ensuring the clarity of course goals and preventing student frustration is underscored (Stark, 2019). Moreover, Marchak et al.'s (2021) study suggests that online courses can effectively preserve the essence and main objectives of the original course, showcasing their utility for remote teaching and their impact on teachers' practices. This aligns with Sari's (2020) findings, indicating that online courses can encompass various roles, such as active learning, problem-solving, and knowledge-seeking, all contributing to the achievement of learning objectives.

Learning Outcomes for Effective Online Education

The effectiveness of online learning is determined by well-defined and measurable learning outcomes (Yu, 2021). Learning outcomes serve as a guide for online courses, outlining the knowledge, skills, and attitudes students should acquire (Bond, 2020). Clearly defined outcomes enhance student engagement by providing transparency on course expectations (Bond, 2020). Aligning learning activities, assessments, and instructional materials with these outcomes ensures a cohesive learning experience and facilitates tracking student progress (Hong et al., 2021).

Innovative assessment strategies are crucial in evaluating students in the online environment (Zheng et al., 2021). Traditional exams may not be suitable for online courses, leading to the adoption of alternative methods like online quizzes, discussions, and portfolios (Huang et al., 2022). Self-assessment tools empower students to monitor their progress and take control of their learning (Yu, 2021). Effective online learning requires meticulous instructional design and planning (Chai et al., 2022). Research emphasizes the significance of well-designed course content, competent instructors, interactive learning environments, and technological advancements (Monil et al., 2022). The transition to fully online instruction can be challenging, especially in regions where online learning is still evolving (Pan, 2022).

Developing online courses necessitates thoughtful consideration of instructional strategies, assessments, and the overall learning environment (Li et al., 2022). Elements like instructional design significantly impact student learning outcomes (Rif et al., 2023). Amid the COVID-19 pandemic, research has focused on the efficacy of online teaching methodologies (Khodaei et al., 2022).

Challenges in the development of eLearning platforms

The development of eLearning platforms faces significant challenges, including a lack of awareness, low adoption rates, connectivity issues, computer literacy gaps, and a deficiency in high-quality e-content (Mailizar et al., 2020). Additional obstacles include the cost of accessing information, the need for internet connectivity and computing devices, technical know-how, and time management skills (Alhaider & Nisa, 2023). Overcoming these challenges is crucial for enhancing the efficacy of eLearning,

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requiring a focus on factors such as performance, motivation, habit, and computer literacy (Kelkay, 2023). Collaborative approaches to eLearning development and engaging educators are essential for successful implementation (Lewis & Pratchett, 2020). The COVID-19 pandemic has hastened the shift towards eLearning, emphasizing the need to address challenges like decreased student motivation, delayed feedback, feelings of isolation, and distractions during online lectures (Patil et al., 2022). The sudden transition to eLearning has also presented opportunities for adoption in various regions, such as Saudi Arabia, where platforms like Blackboard are being utilized for course delivery (Alkarani & Thobaity, 2020).

The literature underscores the pivotal role of instructional design in online learning, encompassing the creation of materials, defining objectives, and planning assessments. Studies emphasize the importance of instructional clarity, particularly heightened during the COVID-19 pandemic, accentuating the need for effective design to enhance the online learning environment. Continuous adaptation is crucial as instructional design evolves, with collaborative efforts and the integration of design thinking showing promise in improving online instructor competencies and course development.

In the realm of eLearning, challenges such as low adoption rates, connectivity issues, and computer literacy gaps persist. Overcoming these challenges requires a focus on factors like performance expectancy, effort expectancy, and collaborative approaches to development. The COVID-19 pandemic has both accelerated the shift towards eLearning and exposed challenges such as decreased student motivation and feelings of isolation. However, it has also created opportunities for adoption in various regions, exemplified by the utilization of platforms like Blackboard in Saudi Arabia.

II. METHODS

This study utilized a mixed-methods research design to investigate the effectiveness of eLearning designs and student experiences at St. Paul University-Surigao (SPUS).

A. Quantitative Approach

A descriptive research design was utilized to explore the overall effectiveness of eLearning among students enrolled in the academic year 2023-2024. The target population consisted of all third and fourth-year students (N = 223) enrolled in various programs within the College of Business and Technology at SPUS. These students had all experienced online classes during the recent pandemic. Following data-cleaning procedures to address incomplete or invalid responses, a final sample size of 220 participants was deemed suitable for analysis.

A purposive sampling was used to guarantee representation across all academic programs within the college. A researcher-developed questionnaire was administered via email to the selected participants upon completion of their respective online courses. The questionnaire utilized a Likert scale to capture student perspectives on various aspects of eLearning effectiveness. Data analysis employed statistical methods such as mean and standard deviation, percentage, and analysis of variance (ANOVA) to analyze the data collected through the survey instrument. This approach aimed to quantify and interpret the students' nuanced viewpoints regarding the effectiveness of eLearning in the studied courses.

B. Qualitative Approach

In addition, a thematic analysis approach was employed to further investigate student experiences with eLearning at SPUS. The thematic analysis involves systematically identifying, organizing, and interpreting recurring themes within qualitative data (Braun & Clarke, 2006).

Student feedback obtained from the open-ended sections of the questionnaire was reviewed line-by-line to identify initial codes representing significant concepts or experiences related to eLearning. These codes were then compared and contrasted to develop broader themes that captured the essence of the student perspectives. The identified themes (e.g., positive perceptions, challenges, and recommendations) provided a deeper understanding of the student experience with eLearning. This thematic analysis approach allowed for a flexible and iterative process, enabling the researcher to identify both anticipated and emergent themes within the data set.

C. Combining Methods

This mixed-methods design offers a more comprehensive picture of eLearning at SPUS. The quantitative data provides a general overview of the overall perceived effectiveness of eLearning designs. At the same time, the qualitative thematic analysis allows for a nuanced understanding of student experiences, challenges, and recommendations for improvement. This combination strengthens the research by offering a broader and richer perspective on the implementation of eLearning at SPUS.

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III. RESULTS AND ANALYSIS

A. Quantitative Approach

This section presents the descriptive statistics for student ratings on various aspects regarding the effectiveness of eLearning instructional design and learning outcomes responses across academic programs at St. Paul University-Surigao's College of Business and Technology.

Table 1 displays the outcomes of the evaluation of instructional design elements for each program and their combined results. The findings revealed an average mean score of 3.94 (SD = 0.861) for instructional design integration, indicating an overall positive perception of its effectiveness in fostering enriched learning environments that promote educational objectives.

A breakdown of instructional design approaches showed "Use of Media" (M = 4.14, SD = 0.833) as the highest-rated strategy, aligning with prior research on the positive impact of multimedia elements in engaging diverse learners (Lailiyah et al., 2021). While "Online Collaboration" received a lower mean score (M = 3.82, SD = 0.906), it remained within the effective range, suggesting potential. This approach may require further refinement in design, implementation, or technological support to address challenges in fostering online collaboration and optimize its effectiveness (Tuma et al., 2021).

Table 1. Level of effectiveness of eLearning in terms of instructional design

A. Instructional Designs	BSA			BSBA			BSHM			BSAIS/IT			BSTM			All Programs		
	M	SD	QI	M	SD	QI	M	SD	QI	M	SD	QI	M	SD	QI	M	SD	QI
1. Use of Media	4.08	0.836	E	3.79	0.864	E	4.00	0.933	E	4.55	0.723	VE	4.26	0.810	VE	4.14	0.833	E
2. Activities for Outcomes	3.81	0.840	E	3.54	0.790	E	3.89	0.938	E	4.13	0.846	E	3.83	0.778	E	3.84	0.838	E
3. Options for Learning	3.80	0.867	E	3.79	0.833	E	3.83	0.940	E	4.23	0.845	VE	4.13	0.815	E	3.96	0.860	E
4. Variety of Access	3.83	0.874	E	3.69	0.800	E	3.94	0.942	E	4.32	0.909	VE	3.96	0.878	E	3.95	0.880	E
5. Additional Online Sources	3.80	0.826	E	3.67	0.806	E	3.94	0.919	E	4.19	0.873	E	4.13	0.815	E	3.94	0.847	E
6. Online Collaboration	3.69	0.856	E	3.67	0.737	E	3.85	0.932	E	4.13	1.056	E	3.74	0.810	E	3.82	0.878	E
7. Teacher Assessments	3.83	0.931	E	3.67	0.806	E	3.94	0.942	E	4.19	0.910	E	3.83	0.834	E	3.89	0.885	E
8. Practical Application	3.85	0.847	E	3.90	0.882	E	3.83	0.916	E	4.23	0.845	VE	4.17	0.834	E	3.99	0.865	E
Average	3.84	0.860	E	3.71	0.815	E	3.90	0.933	E	4.25	0.876	VE	4.01	0.822	E	3.94	0.861	E
Scale	Range	Verbal Description			Qualitative (QI)			Interpretation										
5	4.21-5.00	Strongly Agree			Very Effective (VE)													
4	3.41-4.20	Agree			Effective (E)													
3	2.61-3.40	Moderately			Moderately Effective (ME)													
2	1.81-2.60	Disagree			Slightly Effective (SE)													
1	1.00-1.80	Strongly Disagree			Not Effective (NE)													

The analysis of instructional design across academic programs revealed variations in perceived effectiveness (mean scores and standard deviations). BSAIS (Accounting and Information Systems) and IT (Information Technology) programs had the highest mean score (M = 4.25, SD = 0.876), suggesting a particularly high level of satisfaction, possibly due to their ability to readily integrate innovative instructional strategies tailored to IT education. Conversely, the BSBA (Business Administration) program, while still considered effective (M = 3.71, SD = 0.815), exhibited potential for improvement in its instructional design approaches. BSTM (Tourism Management) and BSA (Accountancy) programs demonstrated commendable mean scores (M = 4.01, SD = 0.822; M = 3.84, SD = 0.860, respectively), indicating positive perceptions of instructional design effectiveness within these programs. The higher standard deviations across all programs suggest a range of perceptions regarding instructional design

efficacy. This highlights the importance of considering diverse perspectives and tailoring instructional approaches to suit the specific needs and characteristics of each academic discipline.

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These findings offer valuable insights for educational stakeholders, advocating for a holistic reevaluation of instructional approaches to strengthen educational practices. Educators and curriculum developers can leverage these insights to refine pedagogical frameworks and optimize educational outcomes through the effective integration of multimedia resources (Vu et al., 2021; Cheng, M.M. et al., 2021). Further research suggests the potential benefits of incorporating affective pedagogical agents in multimedia instruction, as these have been linked with increased cognitive load and potentially improved learning outcomes (Lang et al., 2022). Ultimately, these findings underscore the critical need for continuous assessment and iterative refinement to perpetuate pedagogical innovation and sustain educational excellence.

Table 2 investigates the effectiveness of eLearning in terms of learning outcomes across diverse academic programs. The results revealed an average mean score of 3.80 (SD = 0.857), indicating an overall achievement of learning objectives within the investigated educational frameworks. This aggregate score signifies a generally positive perception among respondents regarding the achievement of educational objectives. However, the variability in mean scores among specific learning outcomes suggests nuanced areas of strengths and opportunities for improvement within educational practices.

"Enjoyable Learning" received the highest mean score (3.86) with a moderate standard deviation (0.864), indicating that students generally find online learning enjoyable. While some might experience higher levels of enjoyment than others, the trend suggests a positive perception. This sentiment was echoed in others where student evaluations of transitioned-online courses during the pandemic often included assessments of enjoyment studies (Garris & Fleck, 2022; Agung & Surtikanti (2020). This highlights the potential for online learning to be a stimulating environment through strategies like interactive activities and diverse learning materials. On the other hand, "Increased Interest" had the lowest mean score (3.76) with a low standard deviation (0.842). This suggests that while online learning may be effective in various learning outcomes, it might fall slightly short in maintaining students' engagement levels Garris & Fleck (2022). The consistency in responses, reflected by the low standard deviation, implies a shared perspective among most students regarding the lack of heightened interest in online learning (Rizun & Strzelecki, 2020). This finding emphasizes the need for strategies to boost engagement, such as incorporating interactive activities, micro-learning modules, and gamification elements.

Table 2. Level of the effectiveness of eLearning in terms of learning outcomes

B. Learning Outcomes	BSA			BSBA			BSHM			BSAIS/IT			BSTM			All Programs		
	M	SD	QI	M	SD	QI	M	SD	QI	M	SD	QI	M	SD	QI	M	SD	QI
1. Clarity of Learning Outcomes	3.75	0.883	E	3.87	0.767	E	3.70	0.954	E	4.10	0.944	E	3.74	0.810	E	3.83	0.871	E
2. Meaningful Learning Experience	3.53	0.838	E	3.85	0.779	E	3.81	0.900	E	4.06	0.964	E	3.87	0.968	E	3.82	0.890	E
3. Conceptual Learning	3.66	0.779	E	3.72	0.793	E	3.81	0.900	E	3.97	0.948	E	3.57	0.843	E	3.74	0.853	E
4. Learning Quality Enhancement	3.54	0.816	E	3.67	0.772	E	3.89	0.890	E	4.03	0.948	E	3.78	0.795	E	3.78	0.844	E
5. Enjoyable Learning	3.53	0.878	E	3.79	0.767	E	3.87	0.875	E	4.26	0.965	VE	3.83	0.834	E	3.86	0.864	E
6. Increased Interest	3.54	0.857	E	3.72	0.759	E	3.89	0.914	E	4.00	0.966	E	3.65	0.714	E	3.76	0.842	E
7. Feedback Mechanism Opportunities	3.58	0.855	E	3.79	0.767	E	3.72	0.902	E	4.19	0.873	E	3.65	0.775	E	3.79	0.834	E
Average	3.59	0.844	E	3.77	0.772	E	3.70	0.939	E	4.06	0.998	E	3.73	0.820	E	3.80	0.857	E

Scale	Range	Verbal Description	Qualitative Interpretation (QI)
5	4.21-5.00	Strongly Agree	Very Effective (VE)
4	3.41-4.20	Agree	Effective (E)
3	2.61-3.40	Moderately Agree	Moderately Effective (ME)
2	1.81-2.60	Disagree	Slightly Effective (SE)
1	1.00-1.80	Strongly Disagree	Not Effective (NE)

An analysis of learning outcomes across programs revealed variations in student perceptions (Table 2). BS Information Science and IT (BSIS/IT) emerged with the highest mean score (M = 4.06, SD = 0.998), suggesting a strong student perception of effective learning outcomes achievement. The relatively high standard deviation (SD) for BSIS/IT indicates some variability in student experiences. Conversely, the BS Hotel Management (BSHM) program exhibited the lowest mean score (M = 3.70, SD = 0.939), although still considered "effective." The moderate standard deviation (SD) for BSHM highlights a range of student perspectives regarding effectiveness. These findings suggest that while all programs achieve learning outcomes to some degree, student perceptions vary, with BSIS/IT demonstrating a stronger alignment between program design and student expectations.

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The effectiveness of learning outcomes across different academic programs can vary, as indicated by the findings. While all programs are generally perceived to have effective learning outcomes, there are nuances in the extent of effectiveness among different academic disciplines Wahono et al. (2020). These variations may be influenced by factors such as program structure, curriculum design, and faculty expertise (Seemiller & Rosch, 2023). The duration of instruction and the incorporation of competencies necessary for workforce functioning are also factors that can impact student learning outcomes (Ober, 2023).

Table 3. Summary of ANOVA results for instructional design and learning outcomes across academic programs

		Sum of Squares	df	Mean Square	F	Sig.
Instructional Design	Between Groups	3.883	4	.971	1.608	.174
	Within Groups	117.132	194	.604		
	Total	121.015	198			
Learning Outcomes	Between Groups	4.738	4	1.185	2.063	.087
	Within Groups	111.382	194	.574		
	Total	116.121	198			

Table 3 indicates the analysis of variance (ANOVA) conducted to examine the significant difference between academic programs and instructional design and outcomes. For instructional design, the ANOVA revealed no statistically significant differences across the instructional design groups, $F(4, 194) = 1.608$, $p = .174$, indicating that the choice of academic programs did not significantly affect instructional design approaches. Similarly, for learning outcomes, the ANOVA indicated no significant differences among the outcome groups, $F(4, 194) = 2.063$, $p = .087$, suggesting that the selected academic programs did not lead to significantly different outcomes.

The results of the analyses suggest that the choice of academic programs did not significantly influence either instructional design or learning outcome. Despite a trend towards significance for learning outcome ($p = .087$), it did not meet the conventional alpha level of .05. These findings indicate that the instructional design methods employed and the specific outcomes achieved were not significantly affected by the academic programs under investigation.

While this study offers insights into student perceptions of eLearning effectiveness (Tables 1 & 2), the lack of significant differences across learning outcomes warrants further exploration. One potential explanation lies in the possibility that the instructional design approaches employed across the programs were too similar (Wang & Hannafin, 2019). Research suggests that variations in instructional strategies and approaches are crucial for detecting noticeable differences in learning outcomes. Studies by researchers like Wang & Hannafin (2019) highlight the importance of diverse instructional design to elicit measurable variations in student learning. Additionally, the specific learning outcome measures used in this study might not have been sensitive enough to capture subtle differences in student experiences (Ferguson, 2019). Outcome measures designed with a one-size-fits-all approach might overlook variations (Clark & Mayer, 2016). A more nuanced approach, tailored to the specific instructional strategies employed, as advocated by Ferguson (2019), could reveal more detailed variations. Furthermore, individual learner differences and external contextual variables beyond the scope of this study could have also influenced the outcomes. Learning styles, prior knowledge, and motivation can vary significantly among students, potentially masking any instructional design effects (Azevedo, 2019).

Table 4. Problems encountered on eLearning.

Problems Encountered	BSA		BSABA		BSHM		BSAIS/IT		BSTM		All Programs	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Limited access to	15.91%	3	14.47%	4	19.00%	1	16.71%	2	14.29%	3	16.13%	1
Digital Distractions	16.16%	2	15.11%	3	15.35%	2	17.74%	1	15.99%	2	16.06%	2
Slow or Limited Internet	16.20%	1	15.84%	2	13.45%	5	15.78%	3	18.48%	1	15.89%	3
Incompatibility with	14.54%	4	16.85%	1	13.98%	3	13.59%	4	13.35%	6	14.56%	4
Lack of Social Interaction	13.26%	5	13.28%	5	13.37%	6	12.33%	5	13.51%	5	13.21%	5
Time Management Issues	12.57%	6	12.45%	6	11.32%	7	12.10%	6	13.82%	4	12.43%	6
Lack of Computer Literacy	11.36%	7	12.00%	7	13.53%	4	11.75%	7	10.56%	7	11.72%	7

Table 4 shows the results across all academic programs, revealing a spectrum of challenges faced by students in today's educational landscape. Limited access to computers, smartphones, and related technologies ranked the highest and emerged as a prevalent issue, with approximately 16.13% of students across all programs reporting difficulties accessing these essential tools. This challenge was most pronounced in the BSHM program, where a staggering 19.00% of students cited limited access as a

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barrier to their academic endeavors. Additionally, digital distractions posed a significant concern for students (16.06%), particularly those enrolled in BSAIS/IT, where 17.74% reported being affected. Incompatibility with personal learning styles was also identified as a prevalent issue, although with slight variations across programs. These findings underscore the multifaceted nature of challenges faced by students in navigating the modern educational landscape, highlighting the need for targeted interventions to support diverse learning needs and technological access.

Social interaction deficits were notably highlighted across all programs, with students reporting varying degrees of difficulty in fostering meaningful connections within their academic communities. Slow or limited internet connections (15.89%) emerged as a particularly salient issue, significantly impacting students' ability to engage in eLearning activities and access course materials effectively. Notably, students in the BSTM program (18.48%) reported the highest percentage, as well as BSA (16.20%) of slow or limited internet connections, underscoring the importance of robust connectivity infrastructure in facilitating equitable educational opportunities. Time management issues were also prevalent across all programs, emphasizing the importance of cultivating effective time management skills to navigate the demands of academic coursework successfully.

Students' educational experiences are shaped by a complex interplay of technology, social factors, and personal characteristics (Dziuban et al., 2018). To address this, educational institutions must adopt a multifaceted approach that tackles issues like access to technology, digital literacy, fostering social interaction, and time management (Dziuban et al., 2018). This requires creating inclusive learning environments that empower all students, regardless of socioeconomic background or disability (Ibrahim & Shiring, 2022; Crawford, 2023). While challenges exist, educators' openness to technology and the potential benefits it offers highlight the importance of ensuring accessibility for diverse learners (Aguar et al., 2022; Aydin et al., 2023; Schlosser et al., 2022).

B. Qualitative Approach

This section presents a thematic analysis of student feedback on the implementation of eLearning at St. Paul University-Surigao (SPUS). The analysis employed a thematic analysis approach (Braun & Clarke, 2006) to identify, organize, and interpret recurring themes within the students' comments and feedback.

Positive Perceptions of eLearning

The student feedback revealed several positive perceptions of eLearning at SPUS. Students valued the *flexibility* afforded by online learning, allowing them to access course materials and complete coursework at their convenience (e.g., "access learning materials and lectures at student's own pace and schedule," "more flexible"). This flexibility was seen as particularly beneficial for students with busy schedules or those residing far from campus (e.g., "a great help to those students who are far away or need to stay or rest at the house").

This sentiment aligns with findings that students' benefit perception positively influences their willingness to engage in online learning, while risk perception negatively impacts their willingness (Jiang et al., 2022). Students appreciated the convenience of accessing course materials and completing coursework at their own pace and schedule, emphasizing the flexibility as beneficial for those with busy schedules or living far from campus (Schlenz et al., 2020). Moreover, research indicates that students generally report positive perceptions about online courses, instructors, and benefits regardless of the mode of delivery (Zhu et al., 2021).

A few students highlighted the potential of eLearning to foster *self-learning*. They felt that online courses encouraged the development of self-learning skills and the ability to adapt to different learning methods (e.g., "expand our ability to adapt to different learning techniques"). Additionally, some students commented on the creation of a positive learning environment by instructors who demonstrated empathy and fostered strong connections with students (e.g., "The enjoyment of an online class hinges greatly on the teacher's ability to empathize with and adapt to students' circumstances and schedules").

Online courses have been found to promote the development of self-learning skills and the ability to adapt to different learning methods (Theobald et al., 2020). This is in line with the idea that fostering self-efficacy and a sense of belonging can have a positive influence on engagement and learning outcomes (Basilaia & Kvavadze, 2020). Additionally, creating a positive learning environment with instructors who demonstrate empathy and establish strong connections with students is crucial for student enjoyment and engagement in online classes (Bączek et al., 2021).

Challenges and Areas for Improvement

The student feedback also revealed several challenges and areas for improvement in SPUS's eLearning implementation. A recurring theme was the concern regarding *limited interaction and engagement* in online classes compared to face-to-face settings (e.g., "limited knowledge compared to face to face classes wherein, face to face, we experience a better interaction with our teachers and classmates," "students who have limited internet access and are hesitant to ask their teacher about the discussions they miss"). This included a perceived lack of confidence in asking questions due to potential peer pressure (e.g., "Some are not

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confident to ask questions during online session since other students will bully their classmates for being slow to cope with the discussion").

Students who faced limitations in internet access felt hesitant to ask questions or participate fully in discussions, citing concerns about potential peer pressure and the fear of being judged for being slow to grasp concepts (Alsoufi et al., 2020). These challenges resonate with broader discussions on the barriers to effective eLearning implementation. Issues such as financial constraints and social factors can hinder the development and successful execution of online learning programs, impacting student engagement and participation (Alsoufi et al., 2020). The shift to online education during the pandemic has further emphasized the need to address challenges related to limited interaction, peer pressure, and internet access to ensure a more inclusive and engaging learning environment (Basilaia & Kvavadze, 2020). Educators and institutions need to focus on fostering a sense of community, encouraging open communication, and providing platforms for students to engage comfortably in online discussions (Kaul et al., 2021).

Technical Issues emerged as a significant challenge for many students. Reliable internet connectivity was a major concern, with students reporting issues such as slow connection speeds and disruptions due to weather (e.g., "So far my primary problem is the internet connectivity due to bad weather or lost of internet connection," "Slow Internet"). These limitations were seen as hindering the learning experience. These challenges are not rare to a specific region, as studies have shown that technical problems, including internet connectivity issues, have been a common barrier to effective online learning across various contexts (Panda et al., 2022).

Studies have highlighted that internet connectivity problems have been a major challenge for students, affecting their capacity to access online sources, participate in virtual classes, and engage in learning activities (Thapa et al., 2021). The lack of reliable internet connection has been identified as a key factor limiting students' engagement and success in online learning environments (Barrot et al., 2021). Studies have emphasized the importance of ensuring fast and stable internet connections for students to access online classes and study materials effectively (Shirish & Jyoti, 2022). Additionally, initiatives to overcome internet access challenges have been crucial in promoting equitable access to online education, particularly in regions where connectivity issues are prevalent (Kaoud et al., 2021).

The *instructor quality* was also identified as a factor impacting the effectiveness of eLearning. A few students expressed concerns about instructors overloading students with activities without providing proper explanations (e.g., "Online Learning is a great way to enhance and learn new things online that teaches us. However, online learning effectiveness on the students depends on the professor because some professors just send activities, many activities that students do not understand the topic anymore but they just want to pass it to be graded").

Students have expressed apprehensions about instructors overwhelming them with activities without providing adequate explanations, leading to a lack of understanding of the topics and hindering the learning process Dhawan (2020). Research has identified various factors that impact student satisfaction with eLearning systems, including course quality, system quality, service quality, instructor quality, and perceived usefulness (Su & Guo, 2021). The quality of course materials, instructional design, and the delivery of content play a crucial role in student engagement and learning effectiveness in online courses (Miya & Govender, 2022). Moreover, the regularity of discussions, students' enthusiasm for the material, and the instructor's approach to eLearning can significantly influence the success of online learning initiatives ('Alwan, 2022).

IV. CONCLUSION

This study investigated the effectiveness of eLearning instructional design and learning outcomes across various academic programs at St. Paul University-Surigao's College of Business and Technology. The findings revealed generally positive student perceptions regarding the instructional design and its effectiveness in fostering enriched learning environments. However, there were variations in these perceptions across programs, suggesting a need for tailoring instructional approaches to suit specific academic disciplines. The analysis of learning outcomes indicated that while all programs achieved learning objectives to some degree, there were nuanced areas for improvement, particularly in maintaining student engagement. The lack of significant variations in learning outcomes across programs warrants further exploration.

The qualitative analysis of student feedback highlighted both positive perceptions and challenges associated with eLearning implementation at SPUS. While students generally valued the flexibility and self-learning potential of eLearning, concerns regarding limited interaction and engagement, technical issues, and instructor quality emerged as recurring themes. These challenges resonate with broader discussions on the barriers to effective eLearning implementation, emphasizing the need for strategies to address social interaction, internet access, and fostering a sense of community within online learning environments.

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These findings highlight the importance of well-designed online courses that balance student autonomy with strategies to address engagement, social interaction, and access barriers. The positive student perceptions regarding instructional design align with research highlighting the importance of well-structured online courses that leverage multimedia elements and promote active learning. However, the absence of significant differences in learning outcomes across programs necessitates further investigation. Factors such as the specific learning outcome measures used, individual student characteristics, and external contextual variables could be contributing to this finding.

This study also sheds light on the challenges encountered by students in the eLearning environment. Limited access to technology, digital distractions, social interaction limitations, and difficulties with time management all emerged as significant hurdles. These findings resonate with previous research on the multifaceted nature of challenges faced by students in online learning environments.

V. RECOMMENDATIONS

In light of these findings, the following recommendations are proposed for St. Paul University-Surigao's College of Business and Technology:

Instructional Design

- Consider diversifying instructional design approaches across academic programs to cater to the specific needs of each discipline.
- Explore the potential of incorporating effective pedagogical agents in multimedia instruction to enhance cognitive load and potentially improve learning outcomes.
- Continuously assess and refine instructional design methods to ensure pedagogical innovation and sustained educational excellence.

Learning Outcomes

- Develop and implement strategies to boost student engagement in online courses, such as incorporating interactive activities, micro-learning modules, and gamification elements.
- Explore the use of more nuanced learning outcome measures tailored to the specific instructional strategies employed within each program.

Addressing Student Challenges

- Implement initiatives to ensure equitable access to technology by providing resources and support for students facing limitations with computers, smartphones, and internet connectivity.
- Develop strategies to foster a strong sense of community and encourage open communication within online courses to address concerns regarding limited interaction and peer pressure.
- Integrate workshops or training programs to equip students with the necessary self-regulation and time management skills to navigate eLearning environments effectively.

Faculty Development:

- Implement a comprehensive faculty development program focused on enhancing eLearning design and delivery skills. The targeted areas can be as follows:

Course Design:

- Develop engaging and interactive online learning activities.
- Utilize diverse instructional methods to cater to different learning styles.
- Create clear and well-organized learning materials.
- Integrate effective assessment strategies for online courses.

Delivery Skills:

- Foster online interaction and collaboration among students (e.g., discussion forums, group projects, synchronous sessions).
- Employ effective communication strategies for online environments.
- Provide clear and timely feedback to students.

Technical Skills:

- Enhance proficiency in Learning Management Systems (LMS) used by the institution.
- Troubleshoot common technical challenges faced by students.
- Leverage appropriate online tools and technologies to enrich the learning experience.

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Program Format:

- Consider a mix of workshops, online resources, mentoring programs, and peer learning opportunities.
- Invite experienced eLearning instructors to share best practices.
- Provide opportunities for faculty to receive feedback on their online courses.

By focusing on these areas, faculty development can equip instructors with the necessary skills to design and deliver high-quality online courses that address the challenges identified in the study, such as limited interaction and engagement. This will ultimately lead to a more positive and enriching eLearning experience for students.

By implementing these recommendations, St. Paul University-Surigao's College of Business and Technology can continue to improve the effectiveness of its eLearning programs, ensuring a positive and enriching learning experience for all students.

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