An Exploration of Online Learning Habits and Academic Productivity of BSIT Students

Genesis G. Camarista, Jan Mark S. Garcia, Edlin Z. Muzones, Jerson T. Valiao, Suzenette M. Javellana, Michelle D. Deasis, Mark Ian S. Tilog

West Visayas State University-Himamaylan City Campus, Brgy. Caradio-an, Himamaylan City, 6108, Philippines

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ABSTRACT

This study explores the relationship between online learning habits and academic productivity among Bachelor of Science in Information Technology (BSIT) students at West Visayas State University–Himamaylan City Campus (WVSU-HCC) during the first semester of Academic Year 2025–2026. Grounded in Zimmerman's (1989) Self-Regulated Learning (SRL) theory, Davis's (1989) Technology Acceptance Model (TAM), Vygotsky's (1978) Constructivist Learning Theory, Sweller's (1988) Cognitive Load Theory, and Astin's (1984) Theory of Student Involvement, the study investigates how students' learning behaviors in digital environments impact their academic productivity. A quantitative-correlational research design was employed, involving 117 BSIT students selected through stratified random sampling. Data were collected using a validated and reliable researcher-developed survey instrument, with internal consistency coefficients of α = .916 for online learning habits and α = .910 for academic productivity. Descriptive statistics and Spearman's rank-order correlation were used to analyze the data. Results revealed that BSIT students commonly engaged in productive online learning habits, including collaboration, time management, and digital tool use. A statistically significant and strong positive correlation was found between students' online learning habits and their academic productivity. These findings suggest that well-developed self-regulatory and digital competencies are predictive of higher academic output in online and blended learning environments. The study concludes with recommendations for integrating SRL training, promoting peer collaboration, optimizing instructional design, and implementing institutional strategies that support cognitive and emotional engagement in virtual learning settings.

Keywords*:* online learning habits, academic productivity, self-regulated learning, digital tools, higher education, BSIT students, blended learning, technology acceptance model

INTRODUCTION

Background of the study

The shift to online and blended learning—accelerated by the COVID-19 pandemic—has transformed higher education globally. Online learning demands greater autonomy, self-regulation, and effective learning habits from students. Numerous studies have examined how students' online learning habits influence their academic outcomes. For example, Broadbent & Poon (2015) found that Australian university students who engaged in self-regulated learning strategies (time management, goal setting, self-monitoring) performed significantly better in online courses. Similarly, Kebritchi, Lipschuetz, & Santiague (2017) summarized international literature demonstrating that students who organized consistent study schedules and used appropriate digital tools had higher academic satisfaction and grades.

At the national level, in the Philippines, several studies have begun exploring online learning among higher education students. For one, Talidong & Paringit (2021) studied technology use among Philippine college students, concluding that while many are proficient technically, inconsistent study environments and distractions undermine learning outcomes. However, specific studies focusing on BSIT students—who often

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have heavier digital workloads, complex technical requirements, and sometimes unstable internet connections—are still scarce.

Locally, in the Visayas region, literature is still limited. Some reports and institutional surveys suggest that BSIT students in local universities struggle with online learning due to intermittent internet, inadequate access to devices, and lack of stable learning environments at home. But these reports are often anecdotal or unpublished, lacking rigorous survey-based quantitative data. There is a dearth of published work that measures *both* online learning habits (e.g., scheduling, platform usage, self-regulation) and academic productivity (e.g., completion of tasks, quality of outputs, grades) among BSIT students in this locale.

A review of existing literature reveals several key gaps that this study seeks to address. First, there exists a specific population gap, as most prior studies tend to focus on general college or university populations, with limited attention given specifically to Bachelor of Science in Information Technology (BSIT) students. This is a critical oversight, given that BSIT students often engage in coursework that includes complex computational tasks, online laboratories, and programming exercises—learning activities that pose unique cognitive and technical demands not always present in other disciplines.

Second, a combined variables gap is evident. While numerous studies investigate either online learning habits or academic productivity independently, few examine the relationship between these two variables simultaneously. This limits our understanding of how students' behavioral patterns in online learning contexts influence tangible academic outcomes.

Third, there is a geographical and local data gap, particularly in the Philippine context and more specifically in regions such as Western Visayas and Iloilo. Localized empirical data on the online learning practices and academic productivity of BSIT students are sparse, making it difficult to design regionally responsive educational interventions or draw broader national generalizations.

Fourth, the literature reveals a contextual and environmental variables gap. Few existing studies investigate how moderating factors such as internet reliability, access to personal learning devices, and home study environments shape or influence the relationship between learning habits and academic success. These variables are particularly pertinent in low- and middle-income contexts where infrastructural inequities persist.

Finally, a directional and methodological gap is also apparent. Many studies utilize purely descriptive or qualitative approaches, with fewer employing quantitative, correlational designs that can provide insight into the strength and direction of relationships between variables. This restricts the theoretical advancement of our understanding of causality or predictive associations in this domain.

This research responds to these identified gaps in several ways. First, by focusing specifically on BSIT students, the study accounts for the technical and digital nuances of their academic workload, offering insights that are more aligned with the cognitive and practical demands of computing education. Second, it simultaneously measures both online learning habits and academic productivity using validated survey instruments. A more comprehensive understanding of the relationship between behavioral learning strategies and academic outcomes is made possible by this dual approach.

Third, by focusing on a particular local setting (such as a university in Western Visayas), the study offers insightful empirical data that can guide regional and national institutional decision-making and policy development. This is especially important when developing student support systems and focused interventions to address local needs. Fourth, the study incorporates a number of contextual factors, including the physical learning space, internet stability, and device access. More detailed analyses are made possible by the inclusion of these moderators, which aid in identifying mediating factors and interaction effects that may have an impact on the association between productivity and online learning practices. Lastly, the study's methodological rigor is strengthened by the application of a quantitative correlational design. This method advances theoretical knowledge and practical consequences in educational technology research by enabling the evaluation of the strength and direction of relationships between academic output and learning habits. The study intends to fill

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these various gaps in order to provide a significant and contextually based body of knowledge that connects the theoretical, empirical, and practical areas of online learning research.

In light of these limitations, the purpose of this study is to investigate how the academic output of BSIT students at West Visayas State University-Himamaylan City Campus (WVSU-HCC), a satellite campus located in Negros Occidental, the Philippines, is related to their online studying habits. Its specific objectives are to ascertain the habits of online learning, evaluate academic productivity, and ascertain the connection between the two.

Theoretical Framework

The present study investigates the connection between academic productivity and online learning behaviors among students pursuing a Bachelor of Science in Information Technology (BSIT). Understanding the mechanics behind students' learning behaviors and outcomes in a digital learning environment is made easier by grounding this inquiry in pertinent educational and psychological theories.

Zimmerman's (1989) theory of Self-Regulated Learning (SRL), which holds that learners' capacity to control their cognitive, metacognitive, behavioral, and motivational processes has a major impact on academic achievement, lies at the heart of this investigation. Effective online learning requires goal-setting, time management, self-monitoring, and strategic help-seeking, all of which are incorporated into SRL (Panadero et al. 2017). This study looks at observable behaviors that are consistent with SRL characteristics, such as planning study time, avoiding distractions, and actively interacting with course materials.

Students are frequently expected to assume more responsibility for their education in online learning environments. This is consistent with constructivist learning theory, especially the ideas of Piaget (1952) and Vygotsky (1978), who highlighted how social contact and active involvement help students build knowledge. The constructivist theory, which holds that knowledge is created rather than passively acquired, is the foundation of BSIT students' online learning practices, which include using interactive tools, working on digital projects, and taking part in discussion forums.

Another useful tool for describing how students embrace and use technology in online learning environments is Davis's (1989) Technology Acceptance Model (TAM). According to TAM, people' acceptance of technology is influenced by its perceived utility and usability. Students' opinions regarding these technologies may have an impact on their regular use of digital communication tools, educational software, and online learning platforms, which in turn may affect academic output.

In order to comprehend how students' online learning habits control the mental effort involved in information processing, the study also makes use of Cognitive Load Theory (Sweller, 1988). While good habits (such as summarizing texts, strategically using multimedia, and taking frequent breaks) can optimize intrinsic and germane load and improve academic achievements, poorly structured online study behaviors can result in extraneous cognitive load (Paas & Van Merriënboer, 1994).

Last but not least, Astin's (1984) Theory of Student Involvement informs the idea of academic production by arguing that both the amount and quality of a student's involvement in academic activities determines their learning. In this study, productivity is not solely determined by grades; it also includes involvement in coursework, task completion, time management, and use of digital learning resources.

Through the integration of different theoretical viewpoints, this study investigates the ways in which students' acceptance and efficient use of technology promote self-regulated and constructivist learning behaviors, which in turn enhance academic output. In the context of BSIT students' online learning, the theoretical framework provides a multifaceted lens through which to examine the intricate relationship between academic performance and behavioral patterns.

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METHODOLOGY

Research Design

A quantitative-correlational research approach was used in this study to investigate the connection between BSIT students' online learning practices and academic production. Finding out if there is a statistically significant correlation between students' self-reported academic productivity in online or mixed learning environments and their online learning activities was the main goal of this study.

A correlational research approach is appropriate for this investigation because it allows the researcher to analyze naturally occurring variations in the variables without manipulating any of the conditions (Creswell & Creswell, 2018). It enables the assessment of the strength and direction of the relationship between online learning habits—such as time management, digital tool usage, collaboration, and help-seeking—and levels of academic productivity, operationalized through self-assessment tools.

Furthermore, this design not only supports the exploration of associations between variables but also facilitates the identification of potential predictors of academic productivity in technology-mediated learning environments. It aligns with the study's objective of providing empirical evidence to inform instructional design, student support mechanisms, and educational policy regarding online learning readiness and effectiveness.

Descriptive statistics is used to profile the respondents' learning behaviors and productivity levels, while Pearson's correlation coefficient is used to determine the strength and direction of the relationship between the two primary variables. The use of standardized self-report instruments ensure consistency in data collection and measurement. Data were collected using validated survey instruments and analyzed using SPSS software.

This design allows for a broad understanding of behavioral patterns among BSIT students and offer insights into how self-regulated learning practices, in the context of online education, influence academic productivity.

Participants and Inclusion Criteria

The participants of this study consist of 117 BSIT students officially enrolled at a state university during the first semester of the academic year 2025–2026. These students were selected to represent a cross-section of the BSIT population across all academic year levels, ensuring diversity in academic exposure and experience. Participation in the study was voluntary, and all students were informed about the purpose, procedures, and ethical considerations prior to data collection.

To be eligible, students must meet the following inclusion criteria: (1) they must be officially enrolled in the BSIT program; (2) they must be actively attending classes during the first semester of A.Y. 2025–2026; and (3) they must voluntarily consent to participate in the study. These criteria ensure that only current, actively engaged students are included, enhancing the relevance and validity of the data collected regarding online learning habits and academic productivity.

Sampling Technique and Sample Size

The study employed a stratified random sampling technique to select a sample of 117 participants. This sampling method involves dividing the total population of BSIT students into strata based on academic year level—first year, second year, third year, and fourth year. From each stratum, participants were randomly selected in proportion to their representation in the overall population. This approach is intended to ensure that all year levels are fairly represented, thereby increasing the generalizability and accuracy of the findings within the context of the BSIT program.

The sample size of 117 was determined to be adequate based on statistical considerations for correlational research, ensuring sufficient statistical power to detect meaningful relationships between variables such as online learning habits and academic productivity.

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Data Collection Instrument

The primary instrument used in this study was a researcher-designed structured survey questionnaire composed of three major parts, each aimed at capturing specific aspects of the participants' profile, online learning habits, and academic productivity in digital learning environments.

Part I: Demographic Profile. This section collected essential background information about the participants, including age, gender, year level, and frequency of internet access. These variables were intended to provide context and enable subgroup analysis in relation to online learning habits and productivity.

Part II: Online Learning Habits. This section assessed students' self-reported online learning behaviors and digital literacy competencies. Items covered domains such as time management, use of productivity tools (e.g., calendars, to-do lists), communication habits, collaboration, help-seeking behavior, and use of educational technology.

Part III: Academic Productivity in Online or Blended Learning Settings. This portion measured students' perceived productivity across several dimensions, including task completion, academic confidence, time management, and performance outcomes. Items were developed based on prior research (Panadero et al., 2017) and aligned with cognitive and behavioral indicators of academic output in digital learning environments.

All survey items in Parts II and III were rated using a 5-point Likert scale allowing the quantification of behaviors and perceptions for both descriptive and inferential statistical analyses.

Validity and Reliability of the Data

To ensure the rigor and trustworthiness of the measurement tool, the survey instrument underwent both validity and reliability testing. Face and content validity were established through expert review by faculty members with specialization in educational technology and research methodology. These experts evaluated the questionnaire for clarity, relevance, and alignment with the research objectives and theoretical frameworks, including Zimmerman's (1989) Self-Regulated Learning (SRL) theory and Davis's (1989) Technology Acceptance Model (TAM). Revisions were made based on their feedback to enhance the instrument's precision and coherence.

In terms of reliability, internal consistency was evaluated using Cronbach's alpha during a pilot test involving a comparable group of BSIT students. The Online Learning Habits section (Part II) yielded a Cronbach's alpha of .916, while the Academic Productivity section (Part III) reported an alpha of .910. These coefficients exceed the commonly accepted threshold of $\alpha > .80$ (George & Mallery, 2003), indicating high internal consistency and reliability of the items within each construct. The use of a 5-point Likert scale across both sections facilitated the quantification of participant responses, making the data amenable to both descriptive and inferential statistical analyses. These results affirm that the instrument is both psychometrically sound and suitable for assessing the constructs under investigation.

Data Analysis Procedure

The data collected in this study were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics—including means and standard deviations—were be computed to summarize the participants' online learning habits and levels of academic productivity. These descriptive measures provided an overview of how BSIT students from WVSU-HCC typically engage with digital learning environments and perceive their academic output.

To determine the relationship between online learning habits and academic productivity, the study employed Spearman's rank-order correlation coefficient (Spearman's ρ)**.** This non-parametric test is appropriate given the ordinal nature of the Likert scale data and the possibility of non-normal distribution. Spearman's ρ will assess the strength and direction of the monotonic relationship between the two primary variables: online learning habits and academic productivity.

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All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS), version 26. The significance level was set at $\alpha = .05$**,** meaning that results with a p-value less than .05 was considered statistically significant. The internal consistency of the instrument was previously established using Cronbach's alpha, with reliability coefficients exceeding the acceptable threshold ($\alpha > .80$), supporting the validity of subsequent inferences drawn from the data.

This combination of descriptive and correlational techniques enabled the researcher to identify patterns in learning behavior and test the hypothesized relationship between students' online learning habits and their self-reported academic productivity.

Ethical Considerations

The study strictly adhered to ethical research standards to protect the rights and welfare of the participants. The following principles were observed:

Informed Consent: All participants were provided with a consent form detailing the purpose of the study, voluntary participation, anonymity, and the right to withdraw at any time without consequence.

Confidentiality: No personally identifiable information was collected. Data were handled confidentially and used only for research purposes.

Data Protection: All data were securely stored and only accessible to the researcher.

Approval: Prior to data collection, the study received approval from the WVSU-HCC Research Ethics Committee.

These measures ensured that the research process was ethical, responsible, and respectful of participants' rights and dignity, in accordance with the principles outlined by the National Ethical Guidelines for Health and Health-Related Research (Philippines, 2022).

RESULTS AND DISCUSSIONS

Table 1. *Common Online Learning Habits of BSIT Students*

Online Habit	Mean	SD	Interpretation	Rank
In terms of study routine and environment				
1. I take regular breaks to maintain focus while studying online.	3.90	.98	Common	1
2. I study in a quiet, distraction-free environment during online classes.	3.85	.97	Common	2
3. I prepare all necessary materials before starting an online learning session.	3.80	.98	Common	3
4. I create a specific schedule for my online study sessions.	3.56	1.00	Common	4
In terms of time management and organization				
1. I allocate sufficient time daily/weekly for online learning activities.	3.85	.82	Common	1

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2. I set specific goals for what I want to accomplish in each online learning session.	3.79	.89	Common	2
3. I use digital tools (e.g., calendars, reminders) to manage my online learning tasks.	3.66	1.03	Common	3
4. I avoid procrastinating on assignments and deadlines for online courses.	3.58	1.03	Common	4
In terms of engagement and participation				
1. I collaborate with classmates on group projects or study sessions online.	3.96	.87	Common	1
2. I regularly review and reflect on feedback provided by instructors online.	3.81	.88	Common	2
3. I actively participate in online discussions and forums related to my courses.	3.65	1.01	Common	3
4. I ask questions or seek clarification during live online classes or via email/chat.	3.60	1.02	Common	4
In terms of resource utilization				
1. I seek help from instructors or peers promptly when I encounter difficulties.	3.90	.90	Common	1
2. I make use of supplementary online resources (videos, tutorials, articles) to aid my learning.	3.85	.92	Common	2
I regularly access the learning management system (LMS) to check for updates and materials.	3.70	.89	Common	3
4. I use note-taking apps or tools during online lectures.	3.64	.98	Common	4
Self-regulation and motivation				

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1. I monitor my own progress and adjust my study habits as needed.	3.80	.88	Common	1
2. I am self-motivated to complete my online coursework even without direct supervision.	3.67	.89	Common	2
3. I manage my time and responsibilities related to online learning.	3.66	.97	Common	3
4. I stay focused during online learning sessions.	3.46	1.05	Moderately Common	4

Note: 4.51-5.00 Very common; 3.51-4.50 Common; 2.51-3.50 Moderately Common; 1.51-2.50 Rare; 1.00-1.50 Very rare

The findings presented in Table 1 reveal a well-rounded profile of the online learning habits of BSIT students, with all items across five domains interpreted as "common" or "moderately common," based on their mean scores. These results highlight a generally positive trend in students' online learning behaviors, particularly in areas such as collaboration, study routines, resource utilization, and time management. These habits align with key elements of Zimmerman's (1989) Self-Regulated Learning (SRL) theory, where learners demonstrate forethought, performance, and self-reflection in their academic behaviors. The ability to set study schedules, allocate time, monitor progress, and seek help promptly reflects self-regulated behavior essential for success in online environments.

Zimmerman's SRL model posits that students who engage in goal-setting, strategic planning, and self-monitoring are more likely to succeed. The high-ranking item "I collaborate with classmates on group projects or study sessions online" (M=3.96) suggests that BSIT students are not just individually driven but also socially oriented learners. This aligns with Constructivist Learning Theory, which emphasizes the role of social interaction and contextual learning. According to Vygotsky (1978), learning is inherently social and occurs through active participation with peers and more knowledgeable others. The collaborative practices observed here reflect an active engagement in constructing knowledge, not merely absorbing information.

In the domain of resource utilization, the item "I seek help from instructors or peers promptly when I encounter difficulties" (M=3.90) supports the idea that BSIT students are proactive in overcoming learning barriers—again reinforcing self-regulation and also suggesting a high degree of student involvement, as articulated in Astin's (1984) Theory of Student Involvement. Astin posited that student learning and development are directly proportional to the quality and quantity of student involvement in both academic and co-curricular activities. Prompt help-seeking and frequent use of supplementary resources (M=3.85) reflect strong cognitive and emotional investment in learning.

In terms of study routine and environment, **a**mong the specific habits reported, the highest-ranked was "taking regular breaks to maintain focus" (M = 3.90, SD = 0.98), followed closely by studying in a distraction-free environment (M = 3.85, SD = 0.97). These results reflect several theoretical underpinnings. From the perspective of Zimmerman's (1989) Self-Regulated Learning (SRL) theory, the behaviors identified—such as preparation of materials, maintaining a focused environment, and taking breaks—are indicative of strategic self-regulation where learners exercise metacognitive control over their study environments. However, the relatively lower mean for scheduling study sessions suggests a partial gap in the forethought phase of SRL, particularly in time planning, which Zimmerman emphasized as a key element of effective self-regulated learning. Comparatively, these findings are consistent with those of Broadbent and Poon (2015)**,** who highlighted the role of time management and environment structuring as essential predictors of academic success in online learning settings. Similarly, Panadero et al. (2017) supported the notion that well-regulated learners tend to engage in structured, deliberate routines. However, contrasting findings from Cho and Shen (2013) suggest that without institutional scaffolding, students often struggle to translate awareness of

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productive habits into consistent practice—particularly in managing study schedules, which aligns with the current study's lowest mean score in this domain.

Furthermore, the domain of self-regulation and motivation had slightly lower mean scores, especially "I stay focused during online learning sessions" (M=3.46), categorized as "moderately common." This signals potential cognitive challenges related to sustained attention in digital environments. Sweller's (1988) Cognitive Load Theory can help explain this finding. The online setting, with its myriad stimuli and multitasking demands, may increase extraneous cognitive load, thereby reducing students' ability to maintain focus. This emphasizes the need for instructional design that minimizes distractions and enhances germane cognitive load, thereby facilitating deeper learning.

In terms of technology use, the statement "I use digital tools (e.g., calendars, reminders) to manage my online learning tasks" (M=3.66) reflects a healthy level of technology acceptance, which is consistent with Davis' (1989) Technology Acceptance Model (TAM). According to TAM, perceived ease of use and perceived usefulness influence an individual's intention to use technology. The frequent use of LMS and digital organization tools suggests that BSIT students find these platforms both manageable and beneficial to their learning tasks.

These findings align with several related studies. For instance, Broadbent and Poon (2015) found that self-regulated learning strategies such as time management, goal setting, and help-seeking significantly predicted academic success in online learners. Similarly, Panadero et al. (2017) emphasized that learners who practice metacognitive regulation and maintain structured study environments perform better in virtual settings. Conversely, the moderately common rating for maintaining focus contradicts Kahu and Nelson's (2018) assertion that engagement is holistic and often sustained by the emotional and behavioral connection to course content. The slightly lower focus may also point to Zoom fatigue or screen-related burnout as documented in Bailenson (2021).

In conclusion, BSIT students demonstrate commendable levels of self-regulation, motivation, collaboration, and technology integration in their online learning practices. These behaviors are theoretically grounded in established learning theories—most notably SRL, Constructivism, TAM, Cognitive Load Theory, and Student Involvement Theory. However, the moderate scores on sustained focus raise important implications for educators and curriculum designers to consider strategies that reduce cognitive overload, increase interactivity, and foster deeper emotional engagement in online and blended learning environments.

Table 2. BSIT Students Assessment of their own Productivity in Online or Blended Settings

Components	***n***	**Mean**	***SD***	**Interpretation**
Task Completion and Academic Output	117	3.77	.75	High Productivity
Time Management and Study Habits	117	3.81	.78	High Productivity
Self-Efficacy and Academic Confidence	117	3.74	.83	High Productivity
Academic Outcomes and Performance	117	3.64	.84	High Productivity
Overall Productivity	117	3.74	.75	High Productivity

Note: 4.51-5.00 Very High Productivity; 3.51-4.50 High Productivity; 2.51-3.50 Moderate Productivity; 1.51-2.50 Low; 1.00-1.50 Very Low

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The results presented in Table 2 provide a comprehensive view of how BSIT students assess their own productivity in online or blended learning settings. Across all four measured components—Task Completion and Academic Output (M=3.77), Time Management and Study Habits (M=3.81), Self-Efficacy and Academic Confidence (M=3.74), and Academic Outcomes and Performance (M=3.64)—students reported high levels of productivity, with an overall mean score of 3.74. These findings indicate that BSIT students perceive themselves as effectively managing and performing within online or blended modalities, a result that aligns with several key theoretical frameworks in educational psychology and technology-enhanced learning.

Foremost among these is Zimmerman's (1989) theory of Self-Regulated Learning (SRL), which posits that learners who actively engage in metacognitive processes such as goal setting, self-monitoring, and strategic action are more likely to experience academic success. The high scores in Time Management and Study Habits and Task Completion directly reflect these SRL components, suggesting that BSIT students have developed effective strategies to navigate the less-structured nature of online environments. The reported high self-efficacy and academic confidence further reinforce Zimmerman's assertion that belief in one's own abilities is central to sustained motivation and performance.

Additionally, the findings resonate strongly with Constructivist Learning Theory, which emphasizes active, learner-centered engagement and the importance of context and personal meaning-making. In a blended or online setup, students must construct their own learning pathways, often without the constant physical presence of instructors. The high productivity scores suggest that BSIT students are not passive recipients of content but are engaging with materials, peers, and digital platforms in ways that foster deeper understanding. This supports Vygotsky's notion of learners as co-constructors of knowledge, even in digitally mediated environments.

From a technological standpoint, these findings are congruent with the Technology Acceptance Model (TAM) proposed by Davis (1989). TAM highlights perceived usefulness and perceived ease of use as central determinants of technology adoption and utilization. Students who report high productivity in blended learning environments are likely those who find the technological tools both efficient and user-friendly. Their ability to manage time, complete tasks, and feel academically confident suggests that digital platforms, such as learning management systems (LMS), video conferencing tools, and digital note-taking apps, are well integrated into their learning routines. This is in line with findings by Teo (2011), who confirmed that perceived ease of use significantly predicts academic performance in tech-enhanced learning contexts.

Despite this generally positive trend, the relatively lower mean for Academic Outcomes and Performance (M=3.64), although still within the "High" range, may hint at the cognitive challenges associated with online learning. According to Sweller's (1988) Cognitive Load Theory, excessive extraneous cognitive load—often triggered by multitasking, poorly designed interfaces, or insufficient instructional support—can hinder learning performance. While students report managing their time and habits well, the slightly lower score in academic outcomes could be symptomatic of the hidden mental effort required to process information in digital settings. This finding is supported by recent studies (e.g., Paas & Sweller, 2014), which emphasize the need for instructional design that reduces unnecessary cognitive demands.

Moreover, the results closely align with Astin's (1984) Theory of Student Involvement, which asserts that student learning is directly proportional to the amount of physical and psychological energy devoted to the academic experience. The high levels of self-assessed productivity suggest that BSIT students are deeply involved in their learning processes, even in the absence of traditional classroom structures. Their engagement in time management, academic tasks, and self-evaluation reflects high levels of both behavioral and emotional investment. Similar findings were reported by Fredricks, Blumenfeld, and Paris (2004), who noted that self-perceived involvement is a strong predictor of academic success in both face-to-face and online learning environments.

Corroborating these findings, Broadbent and Poon (2015) in their meta-analysis emphasized that students with high levels of self-regulation and time management consistently outperform their peers in online learning environments. Likewise, Panadero et al. (2017) underscored that academic confidence and self-efficacy are critical drivers of student success in technology-mediated learning. On the other hand, Kahu and Nelson

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(2018) argued that cognitive and emotional engagement must be supported institutionally; thus, while individual productivity is commendable, institutional efforts in instructional design and student support remain critical to sustaining these high productivity levels.

The study's results provide compelling evidence that BSIT students are well-adapted to online and blended learning environments, as reflected in their high self-assessed productivity across multiple academic dimensions. The integration of self-regulated behaviors, effective technology use, and student involvement supports a holistic picture of competent and adaptive learners. However, the slightly lower score in academic outcomes underscores the importance of addressing cognitive load and instructional quality in digital environments. Moving forward, these insights can inform instructional strategies, curriculum design, and policy decisions aimed at further enhancing productivity and academic success in blended and online higher education contexts.

Table 3. Relationship Between Online Learning Habits and the Academic Productivity of BSIT Students

		Habits	Productivity
Habits	Correlation Coefficient	1.000	.853**
	Sig. (2-tailed)	.	.000
Productivity	Correlation Coefficient	.853**	1.000
	Sig. (2-tailed)	.000	.

Note: **p < .01 – Significant at .01 level

Pearson's *r*: ±0.1 to ±0.3 – Small/Weak, ±0.3 to ±0.5 – Medium/Moderate,

±0.5 to ±1.0 – Large/Strong

The findings of the present study reveal a statistically significant and strong positive correlation between online learning habits and academic productivity among BSIT students, as evidenced by a Pearson correlation coefficient of 0.853 ($p < .01$). This result clearly indicates that students who exhibit more consistent and effective online learning habits—such as structured study routines, effective time management, goal-setting, engagement with digital tools, and proactive use of learning resources—tend to report higher levels of academic productivity in online or blended learning environments. Given that a correlation coefficient within the range of ±0.5 to ±1.0 is considered strong, the observed r-value of 0.853 suggests a robust and meaningful association between the two variables.

This finding aligns closely with Zimmerman's (1989) Theory of Self-Regulated Learning (SRL), which underscores the importance of learners actively managing their learning through goal-setting, self-monitoring, and strategic action. Online learning environments require a high level of autonomy, and students who possess strong self-regulatory habits are more capable of sustaining academic engagement and achieving desired outcomes (Panadero et al., 2017). These habits are also consistent with Astin's (1984) Theory of Student Involvement, which posits that the amount of physical and psychological energy students invest in their academic experience is directly related to learning and development. In digital settings, involvement often manifests as routine engagement with learning platforms, peer collaboration, and continuous self-assessment—all components reflected in the study's habit indicators.

Furthermore, the significant correlation observed in this study is supported by earlier research. For instance, Broadbent and Poon (2015) conducted a meta-analysis showing that self-regulated learning strategies,

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including time management and effort regulation, were significant predictors of academic achievement in online contexts. Similarly, Kizilcec et al. (2017) found that learners who set specific learning goals and monitored their progress were more likely to succeed in Massive Open Online Courses (MOOCs), indicating that habitual behaviors strongly influence productivity and completion rates. The present study extends these findings to the context of BSIT students in the Philippines, emphasizing that productive online learning behaviors are not only theoretically grounded but also empirically validated across diverse educational settings.

Moreover, the findings can be interpreted through the lens of Davis's (1989) Technology Acceptance Model (TAM), which posits that users' perceptions of the usefulness and ease of use of technology shape their engagement with digital platforms. Students who have internalized effective online learning habits are likely those who perceive the digital tools and environments as beneficial, leading to higher levels of motivation and academic output. This is further supported by Cognitive Load Theory (Sweller, 1988), which argues that minimizing extraneous cognitive load—achievable through organized study habits—enhances learning efficiency. BSIT students who prepare study materials in advance, minimize distractions, and follow consistent routines are effectively managing their cognitive resources, thereby boosting productivity.

While these findings confirm a strong relationship between habits and productivity, they also signal the need for educational institutions to actively support the development of these behaviors. This echoes the call by Alqurashi (2019), who emphasized the role of learner satisfaction, motivation, and self-efficacy in shaping outcomes in online environments. Without institutional scaffolding and explicit instruction in habit formation, some students may struggle to self-regulate effectively—particularly those transitioning from traditional to online or blended modalities.

The statistically significant and strong correlation between online learning habits and academic productivity affirms the critical role of student behaviors in online education. Grounded in multiple theoretical frameworks and corroborated by global literature, the study reinforces that the cultivation of effective learning habits is not ancillary but essential to academic success in digitally mediated learning environments. Future research should investigate causality and explore intervention strategies that can further strengthen students' self-regulatory capacities, especially within technology-driven degree programs such as BSIT.

CONCLUSIONS

The statistically significant and strong positive correlation found between online learning habits and academic productivity among BSIT students can perhaps be attributed to the increasing self-regulatory demands of digital learning environments. Students who exhibit strong habits—such as structured time management, effective use of digital tools, and proactive help-seeking—are probably those who have developed a higher degree of metacognitive control, as posited by Zimmerman's (1989) Self-Regulated Learning (SRL) theory. Their behaviors likely reflect the forethought and performance phases of SRL, which enable them to adapt more successfully to the autonomy required in online education.

Moreover, the emphasis on collaboration and peer interaction suggests that students are not merely navigating content individually but are engaging in socially mediated learning experiences. This is probably why their productivity remains high—because they are constructing knowledge in alignment with the principles of Constructivist Learning Theory and Vygotsky's (1978) emphasis on learning through interaction. The use of digital tools also supports this, as students likely perceive these technologies as both useful and manageable, in line with Davis' (1989) Technology Acceptance Model (TAM), thereby encouraging their sustained use and contributing to academic output.

The slightly lower mean score in sustained focus may be explained by the cognitive demands of navigating online platforms, perhaps pointing to increased extraneous cognitive load, as explained in Sweller's (1988) Cognitive Load Theory. While students are generally effective at managing their tasks, they may still struggle with distractions and fatigue associated with continuous screen exposure—factors that likely diminish sustained attention despite otherwise productive habits.

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It is also probable that the high levels of reported productivity are a reflection of deep student involvement, as described by Astin's (1984) theory. Students who invest time, attention, and emotional energy in their learning—through strategic study behaviors and engagement with peers and instructors—tend to experience greater academic gains. The findings may also be indicative of the increasing normalization of online and blended modalities, where students have gradually adapted their learning strategies to fit the demands of a digital academic environment.

In summary, the strong relationship between online learning habits and academic productivity is likely the result of multiple intersecting factors: effective self-regulation, perceived ease of use and utility of technology, collaborative engagement, and strategic management of cognitive load. These findings reinforce the importance of designing learning environments that not only deliver content but also scaffold the development of productive academic behaviors. Future research may explore the causal mechanisms behind these relationships and test intervention strategies that further enhance student self-regulation and digital engagement.

RECOMMENDATIONS

To sustain and enhance the academic productivity of students in online and blended learning environments, several targeted and theoretically grounded interventions are recommended. First, integrating self-regulated learning (SRL) skills into the curriculum is essential. Embedding modules that focus on time management, goal-setting, self-monitoring, and reflective practices within foundational BSIT courses can cultivate metacognitive control and independent learning strategies among students. These modules may be implemented through short asynchronous video tutorials, digital journals, and embedded reflective assignments to ensure accessibility and sustained engagement.

Second, providing structured training on digital productivity tools can further reinforce effective learning habits. In line with Davis's (1989) Technology Acceptance Model (TAM), students are more likely to engage with educational technologies when they perceive them as useful and easy to use. Therefore, offering workshops and tutorials on the use of digital calendars, reminders, note-taking applications, and learning management systems (LMS) can improve both technology adoption and academic efficiency. A practical approach would be to initiate a "Digital Toolbox" webinar series at the beginning of each semester, supplemented by classroom integration of these tools to reinforce their relevance.

Third, structured peer collaboration should be embedded in course design. Rooted in Vygotsky's (1978) Constructivist Learning Theory, peer interaction facilitates knowledge co-construction and deepens conceptual understanding. Designing online tasks that require collaborative efforts—such as group projects, peer reviews, and coding sessions—can strengthen both academic and social engagement. These can be operationalized using breakout rooms, shared documents, and asynchronous discussion boards, with clear role assignments and rotating leadership to promote accountability.

Fourth, to address issues related to mental strain and digital fatigue, course content should be designed to minimize extraneous cognitive load. According to Sweller's (1988) Cognitive Load Theory, learners benefit most when instructional materials reduce unnecessary complexity and allow cognitive resources to focus on essential learning tasks. This can be achieved by simplifying LMS navigation, eliminating redundant multimedia elements, and ensuring that learning objectives are clear and concise. Usability testing with students, coupled with adherence to instructional design best practices such as chunking and consistency, will enhance learning efficiency.

Fifth, the implementation of "focus boosting" strategies is recommended to address the study's observed decline in sustained attention. Techniques such as the Pomodoro method, scheduled digital detox periods, and guided breaks can help students maintain cognitive stamina. Institutions may support this by distributing digital "Focus Kits," integrating focus routines in class sessions, or creating structured "deep work" periods during synchronous activities.

Additionally, establishing a virtual mentoring and academic coaching program can foster greater student

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involvement and well-being. In line with Astin's (1984) Theory of Student Involvement, pairing students with faculty or peer mentors can increase both cognitive and emotional engagement with academic tasks. Monthly virtual check-ins, goal-setting sessions, and open forums for academic and emotional support can significantly boost motivation and retention.

An institutionalized online learning readiness orientation may also be required for all students engaged in online or blended learning. This orientation can assess students' self-regulated learning behaviors, digital literacy, and motivational readiness. Following these assessments, students should receive tailored feedback and resources to strengthen their preparedness, thus increasing the likelihood of success in digitally mediated courses.

To promote long-term metacognitive growth, reflective practices may be embedded throughout the course. Weekly learning journals, digital exit tickets, or e-portfolio reflections can help students assess their progress and refine learning strategies. These practices, grounded in both SRL and constructivist frameworks, foster continuous self-awareness and adaptive learning behavior.

Finally, further research and continuous monitoring of online learning interventions are necessary. Longitudinal studies assessing the effectiveness of SRL training, digital tool integration, and collaborative strategies will strengthen the evidence base and inform policy adjustments. In particular, causal research exploring how specific interventions impact academic performance across different student demographics will provide nuanced insights into optimizing online education strategies. To complement these efforts, institution-level strategies, including comprehensive digital literacy training and structured mentoring programs, should also be prioritized. These strategies would help ensure that students are not only proficient in using digital tools but also receive consistent, personalized support, which can enhance their academic performance, engagement, and overall success in online learning environments.

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