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The Role of Mobile Phones in Facilitating Business Education During the Transition to New Normal Learning Models

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ABSTRACT

This study explores the impact of mobile phone use on self-regulated learning among students at the Nueva Ecija University of Science and Technology San Isidro Campus, specifically within the College of Management and Business Technology. Using a descriptive correlational research design, the study aims to assess how integral mobile phones are to students' learning processes, focusing on activities such as goal setting, environment structuring, task strategies, time management, help-seeking, and self-evaluation. Data were collected through a survey distributed to a significant portion of the student body, with subsequent statistical analysis to elucidate the relationship between mobile phone use and the efficacy of self-regulated learning strategies. Results reveal that mobile phones play a crucial role in enhancing students' ability to manage their learning autonomously. They facilitate access to resources, enable communication with peers and instructors, and support various aspects of self-regulated learning. However, the study also identifies challenges such as distraction, dependency, and varying access to digital resources, suggesting a need for structured guidance in mobile usage. The assumptions emphasize the potential of mobile phones as beneficial educational tools when integrated with supportive measures to mitigate associated challenges. This study contributes to the understanding of mobile learning dynamics and underscores the need for educational strategies that leverage mobile technology effectively.

Keywords: Digital Literacy, Educational Technology, Mobile Learning, Self-Regulated Learning, Student Engagement
JEL Classifications: L81, L86, I21, I23, O33

1. INTRODUCTION

The pervasive impact of Information and Communication Technology (ICT) on human life is profound, especially in education, where it has dramatically transformed teaching and learning methodologies. This change is evident globally, as smartphones, a common feature in both affluent and developing regions, integrate deeply into daily activities. During the COVID-19 pandemic, these devices proved indispensable for their role in facilitating flexible educational delivery, improving access to online resources, and enabling digital student interaction, thus enhancing the appeal of online learning (Darko-Adjei, 2019).

Mobile learning, which is e-learning's spurring form, is a learning system that gives the up-to-date learning material based on the modern learner's needs. The ease of finding information during the need, the lightness and mobility of mobile devices, quick accessibility to information, saving of time and the possibility of learning anywhere at any time are the reported advantages (Briz-Ponce et al., 2017). Nonetheless, the issues of finance budget, lack of educational policies, non-availability of human resources, hardware resources, and parental skepticism are pointed out as the main reasons (Bano et al., 2018). M-learning has become an extension of e-learning via the education system, where it needs to be understood that the quality of m-learning is fairly dependent on the unicity of the mobile devices these students are using (Basak et al., 2018). The use of mobile instant messaging in the higher education sector is an obstacle to the research community because of the need to use such tools effectively (So, 2016). During the COVID-19 pandemic, mobile learning applications in higher education have

been instrumental in enhancing flexibility and improving student outcomes (Althunibat et al., 2021). Research studies have shown empirical support for the benefits of mobile learning interventions in ESL classrooms, emphasizing the importance of proper adoption and guidance by educators for positive outcomes (Ng et al., 2020). Mobile learning has replaced traditional paradigms, incorporating formal and informal learning methods (Kaur et al., 2022). The use of smartphone applications in language learning has been found to increase student motivation both inside and outside the classroom (Kacetl and Klímová, 2019). The mobility aspect distinguishes mobile learning from other technologies, offering learners the flexibility to access learning materials anytime, anywhere (Mohammadi et al., 2020). Mobile technology offers such a range of possibilities like ubiquity, portability, and flexibility, which means that they can be used by students and teachers in the digital era as presented by authors (Criollo et al., 2021). The true potential of mobile learning in ESL classrooms for improving writing skills can only be revealed through further research to assess its impact on student learning (Kamal, 2021). The advantages of mobile learning and technologies have made educational institutions focus more on mobile technologies as the new medium of learning, in which benefits such as interactive learning, multimedia capabilities, increased motivation, and cost-effectiveness are emphasized (Yurdagül and Öz, 2018). Mobile learning allows students to find learning resources fast, so they enjoy learning in the best way possible (Almaiah et al., 2020). The use of mobile devices along with the Realistic Mathematical Educations approach by teachers proved to be advantageous to students in terms of their attitudes, participation, and results (Papadakis et al., 2021). With mobile learning, learners get a variety of benefits such as easy access to learning materials, portability, flexibility, and enhanced engagement (Binaluyo, Santos, & Agustin, 2024). Moreover, the integration of mobile technologies aligns with institutional frameworks aimed at performance excellence, emphasizing governance and quality delivery (Jacoba et al., 2024). While challenges such as digital access and quality assurance persist, studies highlight the effectiveness of mobile technologies in enhancing service delivery during crises, as evidenced in higher education administrative units during the pandemic (De Lara & Santos, 2024). Furthermore, mobile technologies have shown potential in addressing critical issues like vaccine hesitancy among university communities, demonstrating their versatility and impact in various contexts (Santiago, Santos, & Gamit, 2022). Although challenges threaten, the proper use of mobile technologies can positively influence the learning experience of learners and tutors as well.

Mobile devices have transcended their traditional uses, becoming educational essential tools that fit in seamlessly with both the academic and personal aspects of the students' lives. One direct example of this is the study conducted by Nueva Ecija University of Science and Technology - San Isidro Campus, within the College of Management and Business Technology. In this university, students are done with their own invention for using their mobile phones all throughout the semester. The students are engaged in a range of self-regulated learning activities including self-regulation processes such as goal setting, structuring environment, task strategies, time management, help-seeking, and evaluation as suggested by Kaliisa et al. (2017). Mobile learning is generally found to have considerable advantages that allow increased performance. Indeed, according to Taleb et al. (2015), as well as Kim et al. (2020), the use of mobile technology has led to a surge in motivation, developed the habit of retaining information, the quality of instruction is excellent, and the level of participation of students is alive. Additionally, Razzaq et al. (2018) found that the use of mobiles links with the improvements of student's academic performance, self-efficacy, critical thinking, and motivation. A clear demonstration of the effectiveness of mobile learning in students' achievement has come from research across various disciplines. Actually, Fabian et al. (2018) and Elfeky and Masadeh (2016), are among the scholars who have provided evidence to show that the introduction of mobile learning into education has really impacted student's attitude, decision-making skills, achievement levels, and conversational abilities. Moreover, it stimulates active participation as learning is a process of communication, the enrichment of vocabulary, and the student's access to educational content by learning through texting (Godswill et al., 2021). The efficiency and the use of mobile learning technologies put students in the place to have access to learning materials any time and anywhere, which results in the enhancement of self-directed learning and personalized educational experiences (Hosseini et al., 2015). Moreover, the recent trends in teacher's orientation from the traditional setting towards student-centric teaching paradigms such as the inquiry-based and problem-based learning are also being supplemented and augmented by the use of mobile technologies in education (Allard et al., 2019). Furthermore, UNESCO recommends schools to allocate resources to ensure that all students and teachers have access to mobile technology for inclusive and equitable education (Kaliisa and Pic'ard, 2019). The dynamic and interactive learning environment, thus, are the ones normally set up with the help of mobile technologies which, through such, consequently meet the various needs of the modern learners, thus changing the way education is being received and experienced.

Adopting a descriptive-correlational methodology through convenience sampling, this research explores the extensive use of mobile phones and their impact on learning management among students. It is anchored on Social Cognitive Theory (SCT) by Albert Bandura, which suggests that learning is a dynamic interaction among personal factors, behavior, and environmental influences, highlighting the importance of social interactions and observational learning (LaMorte, 2019). The study also incorporates principles of self-regulated learning, emphasizing the cognitive, motivational, and behavioral strategies students employ to manage their educational endeavors (Schunk, 1989). In response to the pandemic, the educational systems in the Philippines and other parts of the world have undergone significant changes. The Philippine government has ordered the shutdown of in-person instruction, thus the education sector redirected remote learning to ensure the continuity of education. The use of technology in education also became more prominent, changing the way the lessons are presented and the methods of training were rethought to conform to modern-day learner needs. Also, mobile learning does not displace the traditional teaching method but serves as a platform for tutoring students via interactive and practical methods outside of the classroom. This study further

examines the consequences of these transformations on the learners' study habits as it is acknowledged that useful study habits are vital for school success. The purpose, however, is not only to explore the practical use of mobile phones in educational settings but to also understand the impact of these devices on the students' self-regulated learning as well as other social cognitive functions in the digital age. This is a comprehensive approach that we hope will give us a clue about the role of mobile technologies in education even in the post-pandemic period ("new normal") caused by the pandemic.

2. METHODOLOGY

A descriptive-correlational research design was employed to assess the impact of mobile phone usage on self-regulated learning among students pursuing a Bachelor of Science in Business Administration, with majors in Marketing Management and Entrepreneurship, at the Nueva Ecija University of Science and Technology – San Isidro Campus, Tabon Annex. This design was chosen to explore the relationship between the extent of mobile phone use and various aspects of self-regulated learning behaviors. The primary data collection method involved survey questionnaires distributed online, aimed at understanding the influence of smartphone usage on students. The questionnaire was divided into two parts: The first section, refined from the researcher's prior studies, focused on gauging the level of mobile phone usage in facilitating interactions between student-to-content, student-to-student, and student-to-teacher. The second part, adapted from Brak et al. (2010), assessed self-regulated learning dimensions such as goal-setting, environment structuring, task strategies, time management, help-seeking, and self-evaluation.

The study utilized a gay sampling strategy, as suggested by Cristobal and Cristobal (2017), which recommends a sample size of 10-20% for descriptive research. Accordingly, 20% of the student population was selected to participate in this study. The selection of respondents was further refined through convenience sampling, ensuring the accessibility and willingness of participants to engage in the research. The analysis of data commenced with frequency counts and percentages to profile the student participants. Descriptive statistics, particularly the weighted mean, were employed to evaluate the levels of self-regulated learning and the extent of mobile phone usage among students. Correlation analysis was then applied to explore the relationships between these variables. Additionally, responses from interviews were analyzed using ranking and frequency counts to gain deeper insights into the student experiences and perceptions. Ethical considerations in this study were rigorously upheld to ensure the integrity and ethical compliance of the research process. Participant confidentiality was strictly maintained, with all survey responses treated anonymously and securely stored. Informed consent was obtained from all participants, clearly outlining the purpose of the research, the voluntary nature of their involvement, and their right to withdraw at any time without consequence. Furthermore, the study adhered to all relevant ethical guidelines and institutional policies to safeguard the welfare and rights of the participants throughout the research process.

3. RESULTS AND DISCUSSION

3.1. Demographic Profile of the Respondents

Globally, diversity exposes its people to many identity factors which are different from the ones those in the native country would be encountering. The tendency of the more developed countries to import labor from the less developed ones can be seen as the main reason for the mentioned phenomenon. In the research of the participants, the demographic analysis provides a clear understanding of the profile of the respondents. It is interesting to note that the age or sex distribution among the participants expresses the completeness of educational and other such priorities, mainly behavioral changes, toward skill developments or means of funding that are characteristic of such institutional progress. According to the gender demographics of the survey, the majority females, 73%, besides males, 23%, chose not to tell their gender with a small percentage around 4%. This female dominance matches the results of quotable research like the one that Severiens and Dam (2012) ran, which underscored the fact that females are overrepresented in higher education, along with the fact that in most cases, they are better students academically too. With respect to age, the bulk of the respondents, around 81%, are from 16 to 20 years, which indicates that the majority fit into the usual college-going age group as indicated by Web Solutions LLC and Its licensors (2021). This age demographic is expected given the duration of bachelor's degree programs in the Philippines, which typically span 4 years. When looking at the academic progression of these students, it's observed that over half, 53%, are 1st-year students. This significant representation of freshmen underscores findings by Elias, et al. (2011), which suggested that 1st-year students often exhibit lower levels of stress and a higher engagement in their initial college year, marked by an eagerness to learn and explore academic life. The representation diminishes progressively across higher academic years with 21% in their 2nd year, 14% in their third, and a mere 3% in their 4th year.

The mode of learning adopted by the students indicates a substantial shift towards digital platforms, with 91% of the respondents engaged in online education. This widespread adoption supports observations by Li and Lalani (2020) that online learning can enhance information retention and reduce the time required for learning, suggesting a potential long-term shift in instructional methods due to the pandemic. Conversely, a smaller segment, 9%, utilizes modular learning, typically due to financial constraints that hinder access to digital resources. Regarding the technology or gadgets used in learning, a vast majority of 85% of the respondents utilize smartphones, reflecting the accessibility and user-friendliness of these devices which are crucial for remote learning. Smartphones, particularly Android devices, are favored for their intuitive design and ease of setup, essential features that facilitate their use in educational contexts. However, it is notable that only about 10% of the students have access to laptops appropriate for schoolwork, highlighting a gap in access to more versatile computing devices that might be essential for certain aspects of higher education. This technological landscape shapes not only the way students engage with their learning materials but also influences their overall educational experience in the digital age.

The demographics of the study participants suggest that this study is prone to a gender imbalance, which is heavily inclined towards females, a trend that is largely typical for college female students with males as their counterparts. The age group of the majority of the respondents is mostly between 18 and 22. In most cases, they are freshmen in universities, implying their initial beginning base in both academic and personal aspects, which gives a hint that students will be highly engaged and flexible in new learning situations. These students primarily opt for digital learning methodologies, which have brought a dramatic change in learning—transforming traditional classroom-based education to online education, a drastic shift that has been accelerated by global challenges. The report highlights digital learning usage among students, describing it as the most prominent alternative when it comes to online learning.

As for devices, laptops, unlike smartphones, are necessary for certain academic activities, but smartphones remain the most preferred method for learning. This reflects an educational environment that is constantly evolving, with technology—particularly smartphones—playing a key role. Research supports the prevalence of smartphone use among students in their academic lives (Abdelmoniem, 2022). Furthermore, studies reveal the various ways smartphones contribute to learning, such as providing learning materials, enhancing communication between teachers and students, and facilitating the educational process (Putra et al., 2022). They also highlight the effects of smartphone use on educational aspects, cognitive functions, and the emotional well-being of students (Wen et al., 2020).

Other papers emphasize the benefits of smartphones in education, such as promoting compliance, self-efficacy, and contentedness, particularly in healthcare education (Jabali et al., 2019). Examples also show that both students and faculty consider smartphones as valuable educational tools (Karki et al., 2020). However, concerns such as smartphone addiction (Aditiya et al., 2022), parental resistance to educational smartphone use, and a lack of understanding of the impact of smartphones on child development are also addressed. Ultimately, smartphones have become central to modern learning, not only making it more engaging but also offering students unprecedented access to knowledge, fostering their active interest in academic topics.

3.2. Extent of Mobile Phone Usage

3.2.1. Learners communication

The research on mobile phone use as a means of communication among learners shows that there is a great deal of reliance on these devices, which are consistently used at a high level for educational interaction. The data provided by respondents on various mobile phone-related activities all strongly endorse this reliance, as evidenced by an overall weighted mean of 4.34 on a scale where ratings above 4.21 indicate “Strongly Agree.” This high average emphasizes the strong consensus among students regarding the effectiveness of mobile phones in improving their educational communications. In detail, various specific functions of mobile phones scored impressively high on helping communication, such as making calls or sending texts to peers, which received a rating of 4.30. The use of mobile phones for accessing social media platforms for video chats and group messaging scored slightly higher at 4.34, showing a marginally stronger preference or dependence on these functions for educational communication. Submitting contributions to group activities via mobile phones was rated the highest at 4.44, reflecting their indispensable role in collaborative academic tasks. Other uses such as general flexibility in communication methods (text, call, video chat, email) also had strong agreement with a rating of 4.32. The integration of mobile phones in educational settings has become increasingly prevalent, fostering a dynamic and interactive communication landscape among students. This trend is supported by findings that indicate a comprehensive adoption and integration of mobile technologies in students’ academic lives, enhancing both individual and collaborative learning experiences. Al Emran et al. (2015) observed that mobile learning (M-learning) not only supports student learning but also significantly enhances collaboration and idea sharing through digital means. Mobile phones play a crucial role in bridging communication gaps and facilitating a continuous exchange of information among learners, particularly valuable in contexts where traditional face-to-face interactions are limited. Therefore, mobile phones are not just convenient tools but essential instruments in creating engaging and collaborative learning environments. The sources chosen confirm the common practice of mobile phone usage in education together with the influence that they have on the learning process. They provide the benefits of mobile blended learning, which is the combination of mobile devices with other educational technologies to heighten specific learning activities. (Suartama et al., 2019) Alongside them, references give attention to mobile learning as an efficient means of teaching when it comes to the exchanging of information, the utilization of multimedia for learning, and the offering of new ways of learning (Astalini et al., 2019). In addition, large-scale studies have been strongly supportive of mobile learning as a safeguard in education, especially at such difficult times as the COVID-19 pandemic (Biswas et al., 2020). The sources further the issue through the roles of mobile learning in promoting interaction and collaborative skills and thus making formal education less boring visualization of content (Rafiq et al., 2021; Yang et al., 2018). They also delve into other important mobile learning aspects such as the use of mobile applications for independent and active learning, thus making educational institutions continuous centers of learning (Kacetl and Klímová, 2019). The research findings, nevertheless, have shown that mobile devices have made it possible for students to have access to the content, work with classmates, and get the needed support no matter where they are and at whatever time (Zhampeissova et al., 2020). The references further through the motivation factor illustrate the role that the mobile technology is playing in teaching and learning. It is evident that this innovation is beneficial to both the educational staff and the students too. (Shahrol et al., 2020). The use of mobile phones as a form of technology to learn from, can be a good gamechanger in the education sector (Santos 2024).

3.2.2. Content communication

The results from the survey on the extent of mobile phone usage for learner to content communication reveal a generally positive agreement among students on the utility of mobile phones in accessing and interacting with educational content. The overall

weighted mean of 3.72 falls into the "Agree" category on a scale where 3.41 to 4.20 signifies agreement. Breaking down the individual item statements, students reported a high ease of access to activities, modules, and other learning materials via mobile phones with a mean score of 3.96, indicating a strong agreement. This suggests that mobile phones are effectively used for accessing essential educational resources. However, the ability to use mobile phones for creating documents and presentations, as in applications like Word, Excel, and PowerPoint, received a lower mean score of 3.30, categorizing it as "Neutral." This indicates a moderate endorsement of mobile phones for more complex content creation tasks. Further, the ease of searching information on the internet via mobile phones was rated highly with a mean score of 4.20, falling into the "Agree" category. This reflects a strong perception that mobile phones are effective tools for internet research. Reading modules and learning materials on mobile phones scored a mean of 3.49, also in the "Agree" category, suggesting that while feasible, there might be some challenges or limitations in using mobile phones as the primary reading device. Additionally, the preference for taking down notes and saving information using mobile phones was moderately agreed upon with a mean score of 3.65.

This shows how phones are very important things for students to be stimulated of what goes on in the classroom, mostly diagrams and graphics as teaching materials and also audio and video formats. Along the lines of Klimova and Poulova (2016), mobile phones are seen as specialized and interact. e.g., the teacher texts them during the activity, they listen to the text on the cell phone and then digitally interrupt her, etc. The emerged deficiencies during the crisis are critical for the future education of the children requiring urgent intervention, and thus, teaching and learning have to be adapted to the new situation. Traditional approaches will not work in the Covid-19 pandemic, and new school organizational, managerial, and instructional models are needed. How to optimize learning through smartphones merits further investigation, as it is the focus of Gligor et al. (2019), who mention the use of different apps for learning different parts of different language courses how about simply downloading an app which explains the words of the idioms? Students can be deeply engaged and productive in learning from their peers and they may also be positively influenced by their peers (i.e. peers sharing experiences with their peers).

3.2.3. Teachers communication

The extent of mobile phone usage for communication between learners and teachers reveals a highly favorable view among students regarding the efficacy of mobile phones in facilitating this interaction. The overall weighted mean for this aspect stands at 4.32, categorized under "Strongly Agree," indicating a broad consensus among respondents about the substantial role of mobile phones in enhancing communication with their instructors in the context of new normal learning. Specifically, the use of mobile phones for participating in online class discussions received a mean score of 4.21, just entering the "Strongly Agree" range. This suggests that mobile phones are considered effective for real-time academic interactions. Similarly, the ease of sending files, documents, videos, and pictures to teachers via mobile phones scored 3.99, which falls into the "Agree" category, showing that while effective, there may be some minor limitations or challenges in this function. The ability to use social media platforms like Facebook Messenger for communication with teachers scored a notably high mean of 4.51, indicating a strong preference and approval of this method among students. This is reinforced by other scores, such as a 4.34 for checking updates and responding to them via mobile phones and a 4.56 for using mobile phones to consult with teachers, both of which are well within the "Strongly Agree" range.

The findings of the research embark on the idea of mobile phones and their significance in the education sector that is one of the most important factors of Development of Communication between the students and their teachers, the way in which communication takes place has both advantages and drawbacks. This stands in line with a study carried out by Denizalp and Ozdamli (2019) who discovered that social networks and mobile apps immensely affect the transmission of the communication between students and instructors, particularly at a time when the pandemic compels this adjustment to new technologies. Doing more than just confirming this statement, Liu et al. (2020) put a great deal of emphasis on the change that mobile technology education represents and the advantages of interaction and the enhancement of academic communication through mobile technology, a process that is limitlessly and smoothly done through technology. Mobile phone usage is beneficial for academic interactions on one side, but on the other hand, it certainly brings stress. Yang et al. (2018) and Kaur (2022) studied the issues caused by mobile phone addiction which also led to school stress and anxiety. Educational institutions' necessity to educate students and staff on digital literacy -such as those suggested by Tejedor et al. (2020)- in order to use mobile technology in a better way, is pointed out in these problems. Other than the addiction of mobile phones, the other issues drawn the focus on by Ali et al. (2019) happened to be the poor quality of life and the academic failures of students. Despite these challenges, mobile phones are indispensable in virtually every sphere, from providing basic connectivity and organization to the promotion of personal health and well-being through apps, which serve as a good reflection of the dual-edged nature of mobile technology in educational and daily context.

3.3. Self-Regulated Learning

3.3.1. Self-regulated learning in terms of goal setting

The results concerning self-regulated learning, particularly in the context of goal setting, reveal that students acknowledge the importance of setting and maintaining high standards for their academic work in online environments. The average weighted mean for goal setting stands at 3.65, categorized as "True of Me," indicating that students generally see goal setting as a relevant and effective strategy for enhancing their learning outcomes. Breaking down the item statements provides further insights into how students perceive and engage with goal setting in their learning processes. The statement regarding setting standards for assignments in online courses received a mean of 3.84, suggesting that most students are proactive about maintaining quality in their academic submissions. Similarly, setting goals for managing study time, a crucial aspect of effective learning, scored even higher with a mean of 3.93, reflecting a strong acknowledgment of the importance of structured study schedules.

Students also reported setting both short-term (daily or weekly) and long-term (monthly or for the semester) goals with a mean of 3.73, showing a balanced approach to immediate and future academic objectives. Maintaining a high standard for learning in online courses received a mean of 3.58, indicating a general commitment to quality education, albeit slightly less pronounced compared to other aspects of goal setting. However, the item on not compromising the quality of work because it is online scored a mean of 3.19, falling into the "Neutral" category. This suggests that while students generally strive for quality, there may be perceptions or challenges associated with online learning environments that affect their ability to consistently maintain such standards.

The idea of exploring the relationship between goal setting and self-regulated learning within online education, particularly through the unique challenges it presents, is well-highlighted by these studies. This motivational approach, emphasizing strategic planning and regular revision with the purpose of setting personal goals and achieving effective educational outcomes, is supported by conclusions from multiple mainstream studies (Borup and Drysdale 2014). The central idea is that not only do students benefit from this method, but it also fosters a more peaceful and productive educational environment. Research, including those conducted by Lam and Zhou (2019) and Elizondo (2023), further underscores the importance of setting clear goals for the successful implementation of self-regulated learning in online settings.

Moreover, these studies provide strong evidence that the Self-Determined Learning Model of Instruction (SDLMI) is an effective tool for promoting goal setting. This model equips students with strategies to set goals, design action plans, and troubleshoot problems, thus encouraging self-directed learning. The findings indicate that goal setting not only enhances individual performance but also drives more engaged and effective learning. The work of Valenzuela et al. (2020) further supports this by highlighting the relationship between perseverance, or grit, and self-regulated learning components such as self-motivation, cognitive strategies, and metacognitive strategies, validating the importance of goal setting.

In this process, educators play a critical role by guiding students in goal setting, providing examples, and employing culturally responsive teaching methods, particularly for marginalized students (Alsaeed, 2023). One notable benefit of goal setting is its ability to enhance executive functions, which are crucial for students excelling in various fields, such as physics, as well as those with mental or physical disabilities (Shogren et al., 2020). The essential role of instructors in supporting self-regulated learning and goal setting is evident (Clemons and Hopkins, 2020). Ultimately, goal setting serves as a foundational element of self-directed learning, making students more capable of advancing their own educational paths, and is vital for fostering engagement, motivation, and overall academic success.

3.3.2. Self-regulated learning in terms of environment structuring

The concept of self-regulated learning in terms of structuring the environment, specifically within language learning, reveals that students strongly affirm the idea that optimizing their study environments can lead to more successful educational outcomes, particularly in online learning. The "True of Me" mean of 3.90 reflects the students' realistic approach to managing their physical and temporal learning environments, aiming to minimize distractions and enhance effectiveness. This indicates a thoughtful and deliberate effort by students to structure their study settings for optimal learning.

The statement items delve into the various aspects that students consider crucial for effective learning. The highest positive affirmation was given to the choice of study location, with a score of 4.11, suggesting that students highly prioritize selecting a comfortable and controlled environment for their studies. A nearby study location followed closely, with a score of 3.95, indicating that comfort is another substantial factor in creating a conducive learning space. Additionally, identifying a place that allows for effective concentration garnered a mean score of 3.85, signifying that students are mindful of choosing environments that help them focus, particularly for online courses.

Choosing a time free from disturbances for studying received a mean score of 3.70, reflecting a somewhat lower, but still notable, agreement among students regarding the importance of scheduling study sessions at uninterrupted times to improve concentration. Although slightly less significant, the majority of students still recognize the value of managing their study timings to reduce interruptions and enhance their focus.

It is worth noting that students play a central role in shaping their learning environment, with effective time management being another critical factor contributing to their learning success. In light of this, it is essential to reconsider how students perceive class activities and how their environmental choices impact learning outcomes. A study by Belaineh (2017) found that the quality of education in higher education is influenced by both physical and temporal aspects, as well as the interaction of students with these elements. A well-structured learning environment should not only encompass the physical setting but also incorporate reliable time management structures that align with students' cognitive rhythms and academic responsibilities, particularly in online learning environments.

Supporting this notion, studies by Liu et al. (2023) and Kim et al. (2019) provide additional evidence showing that high-quality education is often a result of students' ability to optimize their learning spaces. The Self-Determined Learning Model of Instruction (SDLMI) emphasizes the importance of goal setting, planning, and monitoring progress as key components in fostering self-directed and self-regulated learning. This model further asserts that well-designed learning environments not only enhance student engagement but also improve academic performance.

Research by Bonsaksen et al. (2021) also highlights how specific dimensions of the learning environment directly influence the study process and contribute to academic success. Both teachers and students play a vital role in shaping the learning environment

by considering physical and temporal factors, not only by fostering inquisitive environmental experiences but also by optimizing learning conditions (Sun et al., 2022). Instructors, in particular, must recognize how the environment affects students' effectiveness and adapt their teaching styles to better support students in managing their study spaces and schedules (Wang et al., 2022). This approach not only enhances the efforts of faculty but also results in higher student satisfaction, as participants value the reshaping of the learning process (Wang et al., 2022).

Ultimately, the strategic decisions students make regarding their study venues and schedules are critical determinants of their concentration, motivation, and academic performance, especially in the context of online education.

3.3.3. Self-regulated learning in terms of task strategies

Self-regulated learning in terms of task strategies reveals a complex understanding and execution of various methods aimed at increasing efficiency in e-learning. With an average weighted mean of 3.44, classified as "Neutral," the results suggest a moderate level of engagement with certain task strategies, which students may either follow or deem useful, as indicated by the corresponding scale. Notably, students demonstrated a higher appreciation for note-taking in online courses, which received a mean score of 3.79, placing it in the "True of Me" category. This indicates that students are fully aware of the importance of note-taking in an online setting, where direct teacher interaction and immediate clarifications are often less accessible.

Auditory materials were another strategy used to minimize distractions, with a mean score of 3.44, also categorized as "True of Me," suggesting that some students employ this technique to block out background noise. Although asking questions before discussion forums scored lower, with a mean of 3.16, placing it in the "Neutral" category, it indicates that some students recognize the value of learning through active engagement beyond the typical norms.

Furthermore, working on additional problems related to the subject matter had a mean score of 3.37, also identified as "Neutral." This reflects a moderate gap between standard educational content and extra work, where not all students find such tasks useful or feasible, possibly due to time constraints or differing perspectives.

These results reveal that while students employ a variety of task strategies during remote instruction to enhance their learning, there is a noticeable complexity in their perceived effectiveness. Activities like note-taking and reading aloud involve the students' own volition and careful attention to the teacher, and these are often more encouraged in traditional classroom settings. However, students expressed that these tasks were often more time-consuming or did not always seem to provide clear answers. This highlights areas where additional encouragement or instructional support could significantly impact student engagement and peer learning. The attitude of students toward different instructional tactics varies, with direct involvement in the course content—such as through note-taking and reading aloud—being a common yet important practice. On the other hand, more time-intensive strategies are not as consistently applied, suggesting a need for more targeted interventions to promote their effective use. This aligns with research that indicates higher online learning quality when instructors carefully design structured instructional activities (Adedoyin and Soykan, 2020). The shift to online learning, exacerbated by pandemic-related lockdowns, introduced challenges such as the lack of non-verbal communication cues that younger students would typically rely on in a physical learning environment (Khalil et al., 2020).

In addition to these challenges, factors such as teacher personalities, student engagement methods, and the design of course content play a significant role. Effective online learning depends largely on how well educators tailor the experience to meet individual student expectations, ensuring that both engagement and academic outcomes are met (Tang et al., 2021). Furthermore, the use of techniques such as building a web-based community, providing clear instructions, and employing creative learning methods can also contribute to improved student experiences (Analisa et al., 2023). Regular refinement of online course content is another critical factor, as it enhances student satisfaction over time, encourages higher enrollment, and reduces dropout rates (Han et al., 2022).

Understanding and addressing students' perceptions of task strategies in online courses are essential for educators to tailor their instructional approaches, thus optimizing student engagement and maximizing learning outcomes.

3.3.4. Self-regulated learning in terms of time management

Students should not only understand concepts of time management but also be actively involved in their work. Their valuable performances can be the result of management techniques that assist them in controlling their time in an online environment. On the scale of 1-5, students who marked "True of Me" stated that the most important thing for their maturity in their academic performance is their efficient time management, especially when they are in an online learning environment. Now more than ever, students need to be more proactive and use the resources available in order to keep the escalation of education for their current and future work locations. It is imperative for students to incorporate both collective learning activities and individual activities to the schedule. Group assignments, projects, and other interesting activities are some of the most frequent problems faced by the students during the group working process. These findings emphasize the critical importance of disciplined time management in online learning environments, where the absence of physical classroom settings and fixed class times could lead to procrastination or uneven workload distribution. Students' approaches to managing their time showcase their adaptability and commitment to maintaining academic rigor within a flexible learning context. The emphasis on time management is supported by Purdue University Global (2018), which highlights the necessity of planning and using time wisely to effectively balance academic, personal, and professional responsibilities. Effective time management is pivotal for students aiming to optimize productivity and achieve a balanced lifestyle, contributing to

their academic and personal success. This structured approach is essential as it helps mitigate issues like procrastination, often exacerbated in less structured environments. Research supports the notion that adept time management is a key predictor of success in online learning, affecting both academic performance and overall learning experience (Spencer and Temple, 2021). Strategies such as setting clear goals, prioritizing tasks, and adhering to a well-organized schedule are instrumental in helping students navigate the demands of online education (Yeh et al., 2019). Educators play a significant role in this process by providing the necessary guidance, resources, and feedback to support students in developing these skills (Men et al., 2023). Moreover, creating a supportive online learning environment that encourages engagement, interaction, and collaboration can further enhance students' ability to manage their time effectively and meet their academic goals (Wu et al., 2021). Additionally, it is crucial to address challenges that have arisen during the COVID-19 pandemic, such as ensuring access to stable internet connections and adequate technology, to provide equitable learning opportunities for all students (Hermanto and Srimulyani, 2021). Disciplined time management is a fundamental aspect of thriving in online learning settings. By fostering effective time management strategies and receiving robust support from educational institutions, students can enhance their learning experiences, improve their academic outcomes, and maintain a balanced approach to their educational pursuits.

3.3.5. Self-regulated learning in terms of help-seeking

The survey results regarding self-regulated learning in terms of help-seeking behavior indicate a moderate engagement with help-seeking strategies among students, with an average weighted mean of 3.47, categorized as "True of Me." This suggests that while students recognize the importance of seeking help, there might be varying degrees of comfort or perceived effectiveness associated with different methods of seeking assistance. Specifically, the strategy of finding someone knowledgeable in course content for consultation when needed scored a mean of 3.80, reflecting a relatively strong agreement and highlighting that students value expert advice for academic challenges. This approach is crucial as it directly impacts their understanding and performance in the course by enabling them to address specific issues or gaps in their knowledge effectively. Sharing problems with classmates online received a mean score of 3.64, suggesting that collaborative problem-solving and peer support are also valued among students. This method of help-seeking not only aids in resolving academic issues but also fosters a sense of community and shared learning experiences, which can be particularly beneficial in online learning environments where students may feel isolated. However, more traditional, or direct forms of help-seeking, such as meeting classmates face-to-face and persistently getting help from instructors via email, received lower mean scores of 3.21 and 3.22 respectively, both categorized as "Neutral." These findings suggest that while students are open to these methods, there may be perceived barriers or less utility in these approaches, possibly due to logistical challenges, perceived inefficacy, or the informal nature of communications in online settings.

These results illustrate the complexity of help-seeking behavior in self-regulated learning, particularly in the context of new normal education that heavily relies on digital platforms. While students are proactive in seeking help through various channels, the effectiveness and frequency of these strategies can be influenced by personal comfort, the nature of the issue, and the perceived costs of seeking help, such as time, effort, or the fear of negative evaluation. This aligns with research by Karabenick and Berger (2013), which highlights the underuse of necessary help-seeking in educational settings and the need for interventions to encourage more effective and frequent help-seeking behaviors among students. Understanding the factors that influence students' willingness and ability to seek help effectively is critical (Adams et al., 2022). These factors include personal comfort, the nature of the issue, and perceived costs like time, effort, or fear of negative evaluation, which can deter students from seeking the help they need (Adams et al., 2022). Addressing these barriers is crucial for educators and mental health professionals to design interventions that promote a supportive environment for students to seek help when needed (Johnson et al., 2021). Barriers such as stigma, shame, denial, practical obstacles, lack of knowledge about available resources, and concerns about negative evaluation can hinder students from seeking help for mental health concerns or academic challenges (Larsen, 2023). By addressing these barriers through targeted interventions and promoting mental health literacy, educational institutions can encourage students to overcome obstacles and seek the support they need (Jaroszewski et al., 2019). In digitally mediated educational environments, where students may face unique challenges and stressors, promoting help-seeking behaviors and providing accessible resources for support are essential components of fostering a supportive learning environment (Tenkorang et al., 2021). By addressing the factors that influence help-seeking behaviors and creating a culture of openness and support, educational institutions can enhance student well-being, academic success, and the overall learning experience. Promoting effective help-seeking behaviors in digitally mediated educational settings requires a multifaceted approach that addresses individual, interpersonal, and systemic factors. By recognizing and addressing barriers to help-seeking, educators and mental health professionals can create a supportive environment that encourages students to seek help when needed, ultimately enhancing student well-being and academic success.

3.3.6. Self-regulated learning in terms of self-evaluation

The survey results concerning self-regulated learning in terms of self-evaluation show that students actively engage in reflective practices to assess and enhance their learning, with an average weighted mean of 3.64, categorized as "True of Me." This demonstrates a strong commitment among students to utilize self-evaluation strategies to better understand and improve their learning outcomes in online courses. Delving into specific self-evaluation techniques, summarizing learning to examine understanding scored a mean of 3.61. This strategy is crucial as it helps students consolidate their knowledge and identify areas where they may need further clarification or study. It reflects an active approach to learning, where students are not just passive recipients of information but are engaged in making sense of the material on their own. Asking themselves a lot of questions about the course material when studying received a mean score of 3.55. This method of self-inquiry encourages deeper cognitive processing and helps students clarify their understanding and

prepare better for assessments. It also fosters a proactive attitude towards learning, where students take the initiative to ensure they have a robust grasp of the subject matter. Communication with classmates about their performance in online classes scored a mean of 3.70. This indicates that students value peer feedback and comparison as a means of gauging their own progress and understanding. Similarly, communicating to find out what they are learning differently from their peers also received a mean of 3.70. This comparison can highlight diverse perspectives and approaches within the same course, offering students insights into alternative methods of understanding and applying course content.

The analysis of these findings has proved that self-assessment is key in students' self-regulated learning, especially when it comes to online learning where the interaction with the instructor is not immediate and feedback from him/her may be limited. A student's demonstration of engagement with self-evaluation methods like summarization, questioning and peer communication reveals that they are making efforts to take control of their learning process and are able to do it correspondent to their development in a dynamic way. According to Schunk (1996), self-evaluation is of significant importance and even greater when it is done more frequently and/or yields unusual outcomes, as it can help students develop more potent learning strategies and achieve better learning outcomes. Self-assessment is in accordance with Dai et al. (2022) research that highlights how personalized learning opportunities spread. Apart from that, the literature shows that technology is facilitating self-regulation by imposing one's style of learning through personalized learning (Pengelley et al., 2024). They play a crucial part in students' ability to use the right strategies to learn and to consistently assess the progress they have made (Irvine et al., 2017).

Effective self-regulated learners employ systematic and controllable strategies, accept responsibility for their learning outcomes, and engage in continuous self-monitoring to enhance their academic achievements (Pascua, 2022). Self-evaluation is a foundational component of self-regulated learning that enables students to effectively monitor their progress, identify improvement areas, and tailor their educational experiences to their needs. By fostering environments that promote self-regulated learning and supporting effective self-evaluation practices, educators can empower students to achieve academic success and cultivate essential lifelong learning skills.

3.4. Relationship between Extent of Mobile Phone Usage and Self-Regulating Learning

Table 1 shows that the correlation analysis examining the relationship between the extent of mobile phone usage and self-regulated learning reveals a highly significant correlation across various components of self-regulated learning. This analysis underscores that higher levels of mobile phone usage for educational purposes positively associate with different dimensions of self-regulated learning, such as goal setting, environment structuring, task strategies, time management, help-seeking, and self-evaluation. In the realm of goal setting, the correlation coefficients indicate strong positive relationships ($r = 0.477$-$r = 0.558$) across all types of communication facilitated by mobile phones, whether it be learner-to-learner, learner-to-content, or learner-to-teacher, with all P-values showing high significance ($P = 0.000$). This suggests that the use of mobile phones supports students in setting and achieving learning goals effectively. Similarly, environment structuring, which involves organizing the physical and temporal learning environment, also shows substantial positive correlations ($r = 0.446$-$r = 0.509$) with mobile phone use. This indicates that students who effectively use their mobile phones tend to create better learning environments that enhance their educational experiences. Task strategies and time management aspects of self-regulated learning also demonstrate notable positive correlations with mobile phone use. Task strategies, which include methods like note-taking and actively engaging with learning materials, showed correlations ranging from $r = 0.230$ to $r = 0.327$. Time management, crucial for effectively organizing study schedules, exhibited stronger correlations ($r = 0.394$-$r = 0.453$), suggesting that mobile phones can play a significant role in helping students manage their study time more efficiently. Help-seeking and self-evaluation, which involve interacting with peers and instructors and reflecting on one's learning process, also showed positive correlations with mobile phone usage (r-values ranging from $r = 0.171$ to $r = 0.416$). These findings imply that mobile phones facilitate a more connected and reflective learning environment, where students can easily seek assistance and evaluate their academic progress.

These results corroborate earlier studies which have demonstrated a significant link between mobile phone usage and self-regulated learning, suggesting that mobile technology can substantially enhance individual learning capabilities. Specifically, research by Eftekhari et al. (2013) pointed to the positive impacts of multimedia software on mobile phones that facilitate learning. Similarly, Hartley et al. (2020) found that the use of smartphones, particularly when incorporating self-regulated learning measures and controlling for prior achievements, positively influences academic success. This evidence underscores the transformative potential of mobile technology in educational settings, illustrating a clear connection between strategic mobile phone usage and the enhancement of self-regulated learning capabilities. The implications of these findings are profound, suggesting that when utilized appropriately, mobile phones can greatly contribute to academic success by promoting greater autonomy and self-directed learning among students. These observations highlight how integrating mobile technology into learning environments can effectively support and potentially accelerate the educational development of students.

3.5. Challenges Encountered by the Students on the use of Mobile Phones as an Alternative Delivery Mode in the New Normal Learning Scheme

The challenges faced by students using mobile phones as an alternative delivery mode in the New Normal Learning Scheme are extensive, spanning technical, personal, and environmental issues. The survey identifies specific challenges, quantitatively highlighting the most significant issues based on the frequency of responses.

Table 1: Correlation analysis of mobile phone usage and self-regulated learning components

Self-regulated learning	Mobile phone usage		
	Learners to learners communications	Learners to content communications	Learners to teachers communication
Goal setting	0.477** (0.000)	0.495** (0.000)	0.558** (0.000)
Environment structuring	0.446** (0.000)	0.461** (0.000)	0.509** (0.000)
Task strategies	0.230** (0.000)	0.327** (0.000)	0.297** (0.000)
Time management	0.394** (0.000)	0.438** (0.000)	0.453** (0.000)
Help-seeking	0.171** (0.000)	0.286** (0.000)	0.246** (0.000)
Self-evaluation	0.316** (0.000)	0.416** (0.000)	0.391** (0.000)

Legend: **highly significant relationship (P≤0.01)
numbers in the upper entry are r-values
numbers enclosed in parentheses are P-values

3.5.1. Technical challenges

The predominant challenge reported is a "Weak or poor Internet connection/signal," cited by 119 respondents, making it the most critical barrier to effective mobile learning. The second most frequent issue, "Technical issues," includes difficulties using mobile phones for school activities such as presentations and managing files, reported by 40 respondents. This category also covers challenges related to specific software requirements that are not compatible with mobile usage. Additionally, the "Low quality of cell phone" was mentioned 27 times, pointing to performance issues like lagging during online classes. "Limited phone memory/storage," critical for accessing and storing educational materials, was reported 21 times. "Battery problems," which affect the continuity of learning activities, were mentioned by 12 respondents.

3.5.2. Personal and environmental challenges

Distractions from the environment and social media are significant, with 18 mentions, highlighting how external noises and digital notifications disrupt learning concentration. Financial constraints, particularly the cost of data or necessary subscriptions, were cited 14 times. "Time pressure/management," reflecting the challenge of balancing coursework with other responsibilities, was also significant, noted by 12 respondents alongside battery issues.

3.5.3. Health and emotional well-being

Health-related challenges, including "the effect of radiation/eye irritation and headaches," were mentioned by 9 respondents, underlining the physical toll of prolonged usage of mobile devices. Emotional challenges like "Depression" and "Self-motivation" were grouped together with a frequency of 3, emphasizing the mental and emotional strains imposed by remote learning environments.

3.5.4. Educational and systemic issues

Difficulty in understanding the topic/module was highlighted 6 times, and issues related to educators, including their reactions and computer literacy, were noted, reflecting systemic and pedagogical barriers to effective mobile learning.

The challenges students encounter with mobile phone-based learning in the New Normal scheme are indeed complex and multifaceted, necessitating a holistic strategy to address them effectively. Technical issues such as poor internet connectivity and device limitations are significant, compounded by distractions from social media and environmental noise. Personal challenges, including financial constraints and difficulties in managing time, further impede learning. Additionally, health concerns such as eye strain and mental well-being, coupled with systemic issues like educator readiness, add layers of complexity to the learning experience. To effectively tackle these challenges, a comprehensive approach is essential. Improving technical infrastructure to ensure robust internet connectivity and addressing device issues are critical steps. Supporting students' holistic well-being is also crucial; this includes providing resources to manage distractions, promoting mental health, and addressing financial barriers. Moreover, enhancing pedagogical approaches to mobile learning can help improve time management skills and alleviate health concerns like eye strain, thus significantly benefiting students. The complex nature of mobile learning requires not just technical enhancements but also creating a supportive environment that addresses the diverse personal, health, and systemic challenges students face. By comprehensively addressing these issues, educational institutions can optimize mobile learning as a viable educational delivery mode in the new normal. This ensures that students have the necessary support to overcome obstacles and succeed in their academic endeavors, as highlighted by sources such as Jamal et al. (2016) and Chen et al. (2022).

4. CONCLUSION AND RECOMENDATONS

4.1. Conclusion

The survey conducted at Nueva Ecija University of Science and Technology-San Isidro Campus provides valuable insights into the impact of mobile phone use on autonomous learning among students. It was found that mobile phones are essential devices for promoting various aspects of independent learning, including goal-setting, environment structuring, task strategies, time management, help-seeking, and self-evaluation. Mobile phones foster educational environments that support student-to-student, student-to-content, and student-to-teacher communications, acting as key tools that guide students toward deeper engagement with their school subjects. This practice reflects a broader shift in education away from traditional books and towards more digital and online learning experiences, accelerated by the COVID-19 pandemic. The research reveals a direct positive relationship between the extent of mobile phone use and the enhancement of self-regulated learning skills, indicating that the smart utilization of mobile technologies can significantly boost student performance.

4.2. Recommendation

Educational institutions and policymakers should strengthen digital infrastructure to address issues such as poor internet connections and outdated devices, prioritizing greater access to high-speed internet and suitable mobile devices for more students. Teachers should develop mobile-optimized learning resources, such as e-books, apps, and videos, that cater to the diverse learning styles of modern students, thereby increasing their appeal. There

is a critical need for digital literacy empowerment, enabling learners to apply mobile technology in more sustainable and environmentally responsible ways. Additionally, solutions must be sought for the physical and psychological problems resulting from prolonged device usage, including mental health support and education on ergonomic habits. A community of learners should be fostered where students are encouraged to collaborate through online forums, virtual study groups, and interactive sessions, which will positively impact their attitudes toward learning and the environment. Teaching practices should incorporate mobile-based evaluation methods and provide immediate feedback to students, irrespective of educational objectives. Ongoing scientific research is essential to assess the effectiveness of mobile learning and to introduce innovative technologies in various teaching areas globally. Ultimately, educational organizations will benefit significantly from mobile technology, with improved learning outcomes resulting from these proposals.

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