

ATTITUDE TOWARDS LEARNING USING DIGITAL OR TRADITIONAL NOTE-TAKING METHODS AMONG PAULINIAN STUDENT NURSESRaya Crystal P. Espacio¹, Justin J. Dondoyano², Kaye S. Lim³, Mae B. Salaya, MAN, RN⁴¹College of Nursing, St. Paul University Iloilo, Iloilo City, Philippines²College of Nursing, St. Paul University Iloilo, Iloilo City, Philippines³College of Nursing, St. Paul University Iloilo, Iloilo City, Philippines⁴College of Nursing, St. Paul University Iloilo, Iloilo City, PhilippinesEmail: ¹raya.espacio@spuiloilo.edu.ph, ²justin.dondoyano@spuiloilo.edu.ph, ³kaye.lim@spuiloilo.edu.ph, ⁴msalaya@spuiloilo.edu.phOrcid ID number: ¹0009-0009-7106-6983, ²0009-0002-1539-1916, ³0009-0007-7033-6625, ⁴40009-0004-2423-2284

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ABSTRACT:

Technological advancements have transformed educational practices, offering student nurses both digital and traditional note-taking options. Digital tools provide speed, organization, multimedia integration, keyword search, and editing ease, while traditional pen-and-paper supports focus, memory retention, reduced distractions, personal engagement, independence from power, and reflective thinking. Paulinian student nurses show varied preferences shaped by learning styles and resource accessibility, with some retaining traditional methods despite institutional promotion of digital tools. This study determined the attitude towards both methods and identified perceived advantages and disadvantages using a descriptive quantitative design with 226 student nurses from St. Paul University Iloilo, academic year 2024-2025, selected via stratified random sampling. Data were gathered through a validated researcher-made questionnaire on demographics, attitude scales, and ranked advantages and disadvantages, analyzed using descriptive statistics. Results revealed positive attitudes toward digital (mean = 2.97) and traditional (mean = 3.09) note-taking, with no significant differences by sex or year level. Digital note-taking was hindered by eye strain, device dependency, glitches, distractions, and cost, while traditional methods were limited by hand fatigue, bulkiness, editing difficulty, lack of multimedia integration, and limited sharing. Findings indicate that student nurses adopt a blended approach, integrating digital efficiency and handwriting's cognitive depth. Institutions supporting both strategies through digital literacy programs and hybrid practices can enhance engagement, retention, and readiness for academic and clinical demands.

KEYWORDS: note-taking methods, student nurses, learning attitudes, digital note-taking, traditional note-taking**Introduction:**

Education today is rapidly shaped by digital technologies, with laptops, tablets, and smartphones transforming how students learn. One major shift is in note-taking, a vital skill for comprehension, retention, and organization of information [11]. While traditional pen-and-paper note-taking remains widely used, digital methods are increasingly popular for their ability to integrate multimedia, improve organization, and enable easy storage and sharing [16]. For student nurses, note-taking is critical due to the large volume of theoretical and clinical knowledge they must master. Studies show that digital note-taking supports interactive and flexible learning, encourages self-regulated study habits, and enhances academic performance through features like multimedia integration [3, 5]. However, distractions, multitasking, and internet dependency are common drawbacks [15]. On the other hand, traditional handwritten note-taking promotes deeper learning, focus, and better memory retention [9, 6], but it is less efficient for editing, storing, and sharing [1]. Research also highlights that students' motivation, learning styles, and perceptions strongly influence their choice of note-taking methods [13]. Digital natives often lean toward digital tools due to their exposure to technology-rich environments [12], though these do not always guarantee deeper learning unless used effectively [2]. Meanwhile, traditional methods still appeal to students who value simplicity and reduced screen exposure [8]. Despite the rise of digital platforms, little is known about how student nurses specifically perceive and benefit from digital versus traditional note-taking. At St. Paul University Iloilo, where digital tools like tablets and Learning Management System (LMS) are provided, not all students adapt to or prefer them. Exploring these preferences is essential in improving teaching strategies. This study therefore aims to know the attitudes of Paulinian student nurses towards learning using digital or traditional note-taking methods by examining their profiles, assessing their attitudes, and determining the key advantages and disadvantages of each method. Findings will help educators and administrators design learning strategies that support diverse student needs and promote optimal academic performance.

Methods and Methodology:

Research Design. This study utilized a non-experimental, descriptive quantitative research design to explore the attitudes of Paulinian student nurses towards learning using either digital or traditional note-taking methods. The purpose was to know students' learning preferences and perceptions to inform future strategies for effective nursing education. Data were collected using printed questionnaires administered face-to-face and online via Google Forms, allowing for a flexible and inclusive data collection process.

Setting of the Study. The research was conducted at St. Paul University Iloilo during the second semester of the Academic Year 2024–2025. This setting was appropriate due to its accessibility to nursing students across all year levels, ensuring a diverse range of insights regarding note-taking preferences.

Sample and Sampling Scheme. The participants were the officially enrolled student nurses from first to fourth year, based on the College of Nursing's enrollment records. The total population consisted of 562 students, comprising 169 first-year, 187 second-year, 131 third-year, and 75 fourth-year students. The sample size was determined using Krejcie and Morgan's table, resulting in a representative sample of 226 students, accounting for 40.21% of the total population. A stratified random sampling technique was employed, using the spin-the-wheel method and availability of respondents to ensure proportional representation from each academic year level.

Research Instrument. To gather the necessary data, the researchers developed a questionnaire based on a thorough review of literature. Sources included studies by Sun and Li (2019), Calamlam (2023), Gope et al. (2021), and others. The questionnaire underwent content validation and reliability testing to ensure that it effectively measured the variables of interest. It consists of five parts: Part I collected demographic data such as sex, year level, and preferred note-taking method, Part II included 20 statements about digital note-taking, with items 1 to 10 being positive and 11 to 20 being negative. Part III mirrored this structure, focusing on traditional note-taking. Both parts utilized a four-point Likert scale (1 = Strongly Disagree to 4 = Strongly Agree). Mean scores were interpreted using a predefined scale: scores between 2.51 and 4.00 indicated a positive attitude using digital or traditional note-taking methods for learning, while scores between 1.00 and 2.50 indicated a negative attitude using digital or traditional note-taking methods for learning. Parts IV and V assessed the perceived advantages and disadvantages of digital and traditional note-taking methods, respectively. Each part contained 15 statements, and participants were asked to rank the top five items they believed were most relevant. These sections provided deeper insight into student preferences and challenges associated with each method.

Data Gathering Procedure. The data gathering process began after the researchers secured approval during the pre-oral defense in November 2024 and received clearance from the St. Paul University Iloilo Ethics Review Committee. Formal letters requesting permission to conduct the study were sent to the Dean of the College of Nursing, the University President, and each of the year-level team leaders. Upon obtaining approval, researchers coordinated with level representatives to distribute the questionnaires and informed consent forms. To minimize academic disruption, questionnaires were conducted after class hours at designated university areas or online for those unavailable in person. In certain cases, distribution occurred during class time with faculty permission. Participants were informed of the voluntary nature of their involvement, and it was emphasized that non-participation would not impact academic standing. The researchers provided a clear explanation of the study, answered any questions, and collected informed consent before distributing the survey. The questionnaire focused on participants' experiences, preferences, and perceived challenges regarding digital and traditional note-taking. The estimated completion time was 10 to 15 minutes. Completed surveys were checked for accuracy and completeness before data analysis. Throughout the process, participant confidentiality and anonymity were strictly maintained.

Statistical Tools. For data analysis, descriptive statistics were employed. Frequency and percentage were used to summarize demographic data, while mean scores were used to evaluate student attitudes towards each note-taking method. To identify and rank the top advantages and disadvantages of digital and traditional note-taking, frequency and ranking methods were applied.

Ethical Considerations. Ethical considerations were carefully observed throughout the study. The research instrument was validated by three experts to ensure its clarity and relevance. Participants were fully informed about the study's aims and procedures. To avoid any perceived pressure, class leaders did not assist in the distribution or collection of consent forms or questionnaires. Participants were asked to provide minimal contact information, such as email addresses, strictly for communication regarding the study. All collected data were anonymized using participant codes, and were stored in a secured digitally encrypted or in locked

cabinets. Only authorized personnel had access to the data. The retention period for the data was two weeks post-study, after which all physical documents were shredded, and digital files were permanently deleted. In the event of participant withdrawal, all related data were removed from the dataset. To promote transparency and respect participant contributions, a summary of the findings was made available upon request. The study emphasized that participation involved no right or wrong answers and allowed students to skip questions they found uncomfortable. A disclaimer in the questionnaire clarified that the study focused on learning preferences and not on evaluating study habits.

Research Utilization .The findings of the research are intended for publication in academic journals and dissemination within nursing education circles. Should the study reveal predominantly positive attitudes toward either note-taking method, the results will be used to recommend improvements to educational strategies and resources. Regardless of whether the findings are favorable or indicate challenges, the data will inform decision-making for instructional development within the College of Nursing and other educational institutions. Ultimately, this research aims to contribute to enhancing academic performance and learning experiences for student nurses.

Results: This study examined the attitudes of Paulinian student nurses at St. Paul University Iloilo towards digital and traditional note-taking methods. A total of 226 participants were selected using stratified random sampling based on year level.

Table 1. Distribution of participants by sex, year level and as to preferred note-taking method

Demographic Characteristics	Frequency (f)	Percentage (%)
Sex		
Male	48	21.24
Female	178	78.76
Year Level		
Level 1	68	30.09
Level 2	75	33.19
Level 3	53	23.45
Level 4	30	13.27
Note-taking Method		
Digital note-taking	72	31.86
Traditional note-taking	31	13.72
Both note-taking method	123	54.42
Total	226	100.00

Table 1 shows 78.76% were female and 21.24% were male. In terms of academic level, 30.09% were first-year students, 33.19% were second-year, 23.45% were third-year, and 13.27% were fourth-year students. Regarding preferred note-taking methods, 31.86% preferred digital note-taking, 13.72% preferred traditional note-taking, and 54.42% preferred both methods.

Table 2. Attitudes of student nurses towards learning using digital note-taking method, as a whole and according to profile

Category	Mean	Interpretation
Sex		
Male	2.94	Positive
Female	2.98	Positive
Year Level		
Level 1	2.97	Positive
Level 2	2.93	Positive
Level 3	3.01	Positive
Level 4	3.03	Positive
Method		
Digital Only	2.94	Positive
Both	2.99	Positive
Overall	2.97	Positive

The overall mean score for digital note-taking was 2.97 based on table 2. When grouped by sex, male students had a mean score of 2.94, and female students had a mean score of 2.98. When grouped by year level, first-year students had a mean score of 2.97, second-year students 2.93, third-year students 3.01, and fourth-year students 3.03. Based on the preferred note-taking method, students who used both digital and traditional methods had a mean score of 2.99, while those who used only digital note-taking had a mean score of 2.94.

Table 3. Attitudes of student nurses towards learning using traditional note-taking method, as a whole and according to profile

Category	Mean	Interpretation
Sex		
Male	3.01	Positive
Female	3.12	Positive
Year Level		
Level 1	3.02	Positive
Level 2	3.16	Positive
Level 3	3.06	Positive
Level 4	3.23	Positive
Method		
Traditional Only	3.10	Positive
Both	3.09	Positive
Overall	3.09	Positive

The overall mean score for traditional note-taking was 3.09 based on table 3. When grouped by sex, male students had a mean score of 3.01, and female students had a mean score of 3.12. When grouped by year level, first-year students had a mean score of 3.02, second-year students 3.16, third-year students 3.06, and fourth-year students 3.23. Based on the preferred note-taking method, those who used only traditional note-taking had a mean score of 3.10, and those who used both methods had a mean score of 3.09.

Table 4a. Top 5 advantages of digital note-taking method:

Rank	Statement	Frequency	Percentage
1	Statement 1: Digital tools allow students to organize notes systematically using folders, tags, and search functions.	187	95.90
2	Statement 2: Notes can be accessed anytime, anywhere, across devices.	185	94.87
3	Statement 3: Digital notes can incorporate images, videos, and links into their notes for enhanced understanding.	183	93.85
4	Statement 5: Digital notes can quickly search for keywords, making studying more efficient.	182	93.33
	Statement 6: Digital tools enable students to share notes easily with peers, fostering collaborative learning.	182	93.33
5	Statement 4: Digital notes can be easily edited or updated without the need to rewrite entire sections.	179	91.79

Table 4b. *Top 5 disadvantages of digital note-taking method:*

Rank	Statement	Frequency	Percentage
1	Statement 4: Prolonged screen use can cause discomfort and strain on the eyes.	170	87.18
2	Statement 7: Digital devices require charging, making them less reliable during power outages.	159	81.54
3	Statement 3: Software glitches, low battery, or device malfunctions can disrupt note-taking.	158	81.03
4	Statement 1: Devices used for note-taking can lead to distractions, such as notifications or multitasking.	149	76.41
5	Statement 6: Digital tools, such as tablets or laptops, are more expensive than traditional note-taking supplies.	141	72.31

On the Table 4a , The perceived advantages of digital note-taking included the ability to organize notes using folders, tags, and search functions; accessibility of notes anytime, anywhere, and across multiple devices; the incorporation of multimedia such as images and videos; the ability to quickly search for keywords, which made study sessions more efficient; and the ease of editing and updating notes without the need to rewrite them. These advantages were consistently reported across sexes and year levels. Female students indicated a slightly higher frequency of agreement with statements related to accessibility and searchability. Across all year levels, the organizational benefits and accessibility of digital notes were the most frequently cited. The perceived disadvantages of digital note-taking based on the table 4b, included eye strain resulting from prolonged screen exposure; dependence on power or battery to operate digital devices; vulnerability to technical issues such as software errors or system crashes; and increased likelihood of distractions caused by notifications or other applications during note-taking. These disadvantages were reported by students across all sex and year level categories.

Table 5a. *Top 5 advantages of traditional note-taking method as a whole*

Rank	Statement	Frequency	Percentage
1	Statement 1: Writing by hand helps me remember information more effectively through the cognitive process of physically recording information.	142	92.21
2	Statement 2: Traditional note-taking reduces distractions compared to digital methods, helping me to stay focused on the material.	126	81.82
3	Statement 4: The physical act of writing can make learning feel more personal and connected.	125	81.17
4	Statement 10: Handwritten notes do not rely on electricity or charging, ensuring they are always available.	122	79.22
5	Statement 5: Traditional note-taking does not rely on technology, so there are no issues with battery life or software malfunctions.	118	76.62
	Statement 6: Handwritten notes encourage more time for reflection and summarizing, fostering critical thinking.	118	76.62

Table 5b. *Top 5 disadvantages of traditional note-taking method as to whole*

Rank	Statement	Frequency	Percentage
1	Statement 9: Writing by hand can lead to cramps or fatigue, especially during long sessions.	118	76.62
2	Statement 6: Physical notebooks can be bulky, making it difficult to manage or transport large volumes of notes.	112	72.73
3	Statement 11: Handwritten notes cannot easily integrate images, videos, or other multimedia, limiting the depth of learning materials.	110	71.43
4	Statement 8: There is no automatic backup for handwritten notes, which is a risk if notes are lost or misplaced.	109	70.78
5	Statement 7: Sharing handwritten notes with my classmates is less efficient than digital tools, which offer easy sharing and collaboration options.	99	64.29

In terms of traditional note-taking, the perceived advantages on the table 5a, included improved retention of information due to the act of writing by hand; better concentration during lectures; more personal engagement with the learning material; ease of use without requiring electricity or internet connectivity; and more time encouraged for reflection during the note-taking process. These advantages were reported by students across all year levels. On the table 5b shows the disadvantages of traditional note-taking included hand fatigue from prolonged writing sessions; difficulty in editing or reorganizing content once written; the physical bulk of maintaining and storing multiple notebooks; and the lack of efficient methods to store and share handwritten notes. These disadvantages were noted across all year levels and were more frequently reported by students who preferred digital methods.

Discussion: The findings of this study revealed that Paulinian student nurses at St. Paul University Iloilo exhibited a positive attitude towards both digital and traditional note-taking methods. While both methods were favorably rated, traditional note-taking received a slightly higher overall mean score than digital, suggesting a continued preference for its perceived cognitive benefits such as enhanced retention, focus, and comprehension. These perceptions are supported by Lichty [8] and Siegel [14], who emphasized the mental engagement associated with handwriting as a tool for deep learning. An analysis by sex revealed that female students had slightly higher mean scores for both digital and traditional note-taking compared to male students. This aligns with the findings of Voyer and Voyer [18], who suggested that females often excel in verbal and language-based tasks, potentially making them more inclined toward traditional methods that demand active processing. In contrast, the marginally lower digital note-taking scores among males may reflect different study habits or approaches, although Murtafi'ah et al. [10] reported that male students may demonstrate more confidence in using technology. Despite these minor differences, both sexes showed an overall positive reception to both note-taking approaches, indicating gender is not a strong determinant of note-taking preferences in this context. Across year levels, the results indicated that attitudes toward both note-taking methods became increasingly positive with academic progression. Fourth-year students reported the highest mean scores for both digital and traditional note-taking, while first-year students had the lowest. This may be attributed to the increasing academic and clinical demands placed on students in higher levels, requiring them to adopt more effective and strategic learning techniques. Calamlam [3] highlighted that digital tools become more essential as students progress due to the growing volume of content and the need for efficiency in organizing materials. Furthermore, this trend supports the Theory of Planned Behavior [17], which posits that students' behavioral choices, such as selecting a note-taking strategy, are influenced by their confidence, perceived control, and readiness based on experience. More than half of the respondents preferred using both digital and traditional note-taking methods, indicating a flexible, dual-strategy approach to learning. This adaptability suggests that students are not strictly bound to one method but rather apply each tool based on situational needs. Salame et al. [13] observed that students are increasingly strategic in how they approach academic tasks, adapting tools and techniques to match content type, context, and their individual preferences. Among the reported advantages of digital note-taking, students highlighted its organizational features, accessibility, multimedia integration, keyword searchability, and ease of editing. These findings are consistent with the work of Albaker [1], who reported that digital platforms support more structured and easily retrievable content, which is especially useful in fast-paced courses like nursing. Sun and Li [16] also emphasized the role of digital accessibility in promoting continuous and flexible learning, making it possible for students to review materials anytime and anywhere. However, despite these advantages, digital note-taking was also associated with several limitations. Students reported experiencing eye strain from prolonged screen time, dependency on battery life and internet access, technical glitches, and distractions from non-academic applications. These drawbacks are well documented in the literature. Kumari et al. [7] highlighted health-related issues caused by screen exposure, while Shi and Yu [15] noted the negative impact of multitasking and app notifications on focus and cognitive retention. These limitations underline that although digital tools offer convenience, they require disciplined use and careful attention management to be fully effective. In contrast, traditional note-taking was recognized by students for its cognitive and psychological advantages. The most valued benefits included improved retention through the physical act of writing, better concentration during lectures, more personal engagement with material, independence from electricity or connectivity, and more time encouraged for reflection. Gür [6] explained that generative note-taking, which involves processing and rephrasing information by hand, results in more meaningful learning and stronger memory formation. These benefits were particularly appreciated by senior students, suggesting that with experience, students tend to recognize the deeper learning that traditional note-taking supports. Nonetheless, students also cited practical limitations of traditional note-taking. These included hand fatigue, difficulty editing notes once written, the bulk of carrying multiple notebooks, and the lack of efficient methods for sharing handwritten content. According to Albaker [1], while traditional note-taking fosters greater cognitive involvement, it is less efficient in terms of organization, sharing, and revising, especially in technology-integrated educational environments. These practical challenges may explain why many students opt to use both digital and traditional tools interchangeably. The consistent positive attitudes toward both digital and traditional note-taking across sex and year level indicate that student nurses have adopted an adaptive and personalized approach to learning. The preference for a dual-strategy method reflects broader educational trends where students seek to balance cognitive effectiveness with practical convenience. Salame et al. [13] emphasized the importance of self-regulated learning, where students take ownership of their educational strategies and tailor them to meet specific academic needs. These findings carry significant implications for nursing education. First, instructors should recognize and support diverse note-taking preferences by integrating flexibility into teaching strategies. For example, allowing students to choose between printed handouts and digital materials enables them to engage with content using their preferred tools. Cross and Kendrick [4] advocated for encouraging reflective and strategic note-taking practices, which can help students

determine when and how to best utilize digital or traditional methods for different types of content. Second, institutions should address the specific challenges associated with each method. For students using digital tools, guidance on healthy device usage, screen time management, and distraction-reduction strategies could mitigate the adverse effects identified in this study. For those who prefer traditional note-taking, support might include resources for organizing and digitizing handwritten notes, or opportunities to scan and store notebooks for easier retrieval and sharing. Finally, promoting hybrid note-taking strategies that combine the strengths of both methods could enhance overall academic performance. For instance, students might be encouraged to take handwritten notes during lectures for focus and retention, then digitize them for organization and review. Such practices not only leverage the benefits of each method but also help students develop flexible learning strategies that can be applied in diverse clinical and academic settings. In conclusion, the study demonstrates that Paulinian student nurses maintain a positive attitude toward both digital and traditional note-taking methods. Digital tools are appreciated for their efficiency, organization, and accessibility, while traditional methods are valued for their cognitive depth and reliability. The preference for using both highlights a strategic, adaptive approach to learning, where students consciously select note-taking methods based on context, content, and personal learning style. These findings should guide nursing educators in designing instruction that is responsive to the varied needs of learners, ultimately supporting deeper engagement, improved retention, and better preparation for clinical practice.

Conclusion: This study concludes that both digital and traditional note-taking methods play an essential role in the academic development of student nurses. Each method presents unique strengths, digital note-taking aligns with the fast-paced demands of nursing education, offering convenience, efficiency, and features that support collaboration and information management. In contrast, traditional note-taking enhances cognitive processes such as memory retention, focus, and critical thinking, providing a more personal and reflective learning experience. The researchers emphasize that these methods should not be seen as opposing choices but as complementary tools. A blended approach that integrates both styles offers flexibility, allowing student nurses to adapt to various academic and clinical situations. This strategy can maximize learning outcomes by leveraging the advantages of each method depending on the context. Additionally, the study highlights the need for institutional support in helping students develop effective note-taking strategies. Educational institutions are encouraged to provide guidance, promote digital literacy, and offer resources to strengthen both technological and handwriting skills. By doing so, students can make informed choices about their learning techniques. Future research may further explore the impact of blended note-taking strategies on clinical performance, long-term retention, and academic achievement across different learning modalities. This study underscores the importance of empowering student nurses with adaptive learning tools to enhance their academic journey and professional preparedness in an ever-evolving healthcare environment.

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