International Journal of Education and Practice
2024 Vol. 12, No. 3, pp. 953-967
ISSN(e): 2310-3868
ISSN(p): 2311-6897
DOI: 10.18488/61.v12i3.3815

Digital competencies of secretarial students in Thailand

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Article History
Received: 8 July 2023
Revised: 16 November 2023
Accepted: 4 December 2023
Published: 22 July 2024

Keywords
Adaptive digital transformation
Digital competencies
Digital literacy
Digital use
Problem solving with digital tools
Secretarial students.

ABSTRACT

This quantitative research endeavors to assess the digital competencies of secretarial students across Thailand. The study population comprised secretarial students from vocational colleges under the Office of the Vocational Education Commission. A sample size of 400 participants was identified using Taro Yamane's principle of sample size determination. The evaluation was conducted through a comprehensive survey questionnaire, exploring key domains such as digital literacy, digital utilization, problem-solving with digital tools, and adaptive digital transformation. Mean and standard deviation were measured from the structured survey data, encompassing various aspects of digital competencies. The analysis revealed that secretarial students exhibited a high level of digital literacy, demonstrating competence in multifaceted tasks. This proficiency extended to the effective utilization of diverse digital tools, showcasing mastery in problem-solving within the digital realm. Furthermore, the study delved into adaptive digital transformation competencies, revealing students' adaptability to the digital ecosystem, and its various dimensions, including personalized learning approaches, idea generation, engagement with new media trends, transdisciplinary understanding, design thinking, negotiation skills, and multitasking abilities. These findings underscore the readiness of secretarial students to navigate the complex digital landscape in their future professional roles. These results provide valuable insights for educational institutions and policymakers to tailor digital literacy programs and curricula aligned with the specific needs of secretarial professionals in the dynamic context of the digital era.

Contribution/Originality: This research identifies key digital competencies crucial for success in secretarial roles, offering guidance to institutions, programs, and employers for creating tailored curricula and job descriptions to let secretarial students acquire essential digital skills for the modern workplace.

1. INTRODUCTION

1.1. Background

Secretarial work plays a crucial role in various departments, whether as an executive secretary, assistant secretary, or part of a secretary team within different departments. The secretaries serve as right-hand individuals to executives and are essential in driving the smooth, efficient, and timely execution of daily organizational operations. Secretaries are responsible for fulfilling routine and assigned tasks according to the expectations of their employers. To excel in this role, secretaries must possess a forward-thinking mindset, adept work and people

management skills, proactive initiative, adaptability in various situations, and most importantly, emotional maturity. Since secretarial work involves extensive coordination with multiple stakeholders, continuous self-improvement, particularly in technological proficiency, is crucial (Ngotngamwong, 2018).

Secretarial work holds significant importance in organizations across all levels. The International Association of Administrative Professionals (IAAP), formerly known as Professional Secretaries International, is a non-profit professional networking and educational organization in the United States. It offers professional development services, networking opportunities, and support to its members. The IAAP compiles various resources to support secretarial work, including job announcements, career advice, and necessary training programs. The organization is dedicated to assisting management professionals in reaching their full potential and advancing their careers (Professional Secretaries International World Headquarters, 2022).

In Thailand, the Association of Women Secretaries and Administrators of Thailand focus on developing training courses to enhance potential and provide knowledge in the secretarial field, tailored to meet the demands of organizational work. Their objective is to empower individuals to become exceptional right-hand assistants to executives (The Association of Women Secretaries and Managers of Thailand, 2020). The secretarial profession also holds significant importance in both the public and private sectors. With the advent of the digital age, secretaries play a crucial role in utilizing technology and communication to overcome boundaries and foster innovation. Organizations must adapt to these changing times, remaining vigilant in embracing technological advancements and expanding their business in a fast-paced and highly competitive environment (WICE Logistics, 2018). Digital transformation is vital for organizations to become digital entities, requiring the adjustment of services and work processes into digital formats.

Currently, it has become imperative for executive secretaries, in particular, to develop themselves and acquire digital skills to effectively manage their work with maximum efficiency. This includes proficiently handling digital information, ensuring flexibility to access and retrieve data from anywhere at any time, and possessing knowledge about essential tools, equipment, and information systems that aid in organizational tasks. Consequently, the development of personnel's potential, especially for executive secretaries, is considered crucial and highly necessary. They are viewed as prototypes within the organization due to their close proximity to executives and their coordination with employees at all levels. Hence, they must be prepared to embrace the digital age, continuously modifying and improving themselves to enhance their professionalism, stability, and sustainability.

Therefore, the acquisition and enhancement of digital skills are imperatives that necessitate continual development. While certain of these skills are cultivated within the framework of formal education, others are garnered through informal and non-formal educational settings. This includes instances of structured pedagogical instruction as well as autonomous self-directed learning experiences (Leahy & Wilson, 2014). In the contemporary landscape, our society mandates a profuse reliance on digital skills to adeptly navigate the multifaceted processes of information location, assessment, and generation. Consequently, it is of paramount significance to critically assess the imperative for cultivating and honing these essential proficiencies.

Vocational colleges are educational institutions dedicated to developing and cultivating professional secretaries among their students. These colleges offer commerce secretary academic programs, which have been running continuously for a considerable duration. Currently, there are 62 such programs available nationwide. The primary objective is to enhance the quality of students and graduates, aligning their skills with the demands of enterprises, communities, and the labor market. The aim is to produce and nurture vocational education personnel who meet the requirements of the National Economic and Social Development Plan and national education standards. The Office of the Vocational Education Commission focuses on generating and advancing middle-class manpower and technologists by implementing reforms in conceptual frameworks, organizational structures, and operational methods. The goal is to produce high-quality outputs that align with national development, in accordance with the Vocational Education Act of 2008, Section 6.

This section emphasizes the need for vocational education management to be aligned with the educational development direction framework during the 12th National Economic and Social Development Plan (2017-2021) and the National Education Plan (2017-2036). This alignment ensures effective implementation of the plans, taking into account the contextual factors influencing the country's educational development, such as the rapid advancement of digital technology affecting the global economy and society, as well as the necessary skills for the 21st-century population (Education Council Secretariat Ministry of Education, 2017). Furthermore, these efforts are aligned with the national policy and plan for digital development in the economy and society for the years 2018-2037. The overarching objectives of this plan are to enhance the country's economic competitiveness through innovation and digital technology, promote social equality through access to information and services via digital media, improve the quality of life for the population, equip all personnel with knowledge and skills suitable for the digital age, and transform the working paradigm and government service provision through the utilization of digital technology and data to ensure transparency, efficiency, and effectiveness. Consequently, the learners' digital competency becomes a crucial aspect, challenging the abilities and professionalism of teachers in integrating core concepts and learning activities that foster digital competencies. The ultimate goal is to equip students with the digital competencies necessary for their learning, occupation, and life in the digital world (Lesch, 2014). Therefore, vocational colleges must adjust their approaches and drive student development in accordance with the aforementioned circumstances.

One significant entity contributing to the cultivation of essential secretarial personnel is the Office of the Vocational Education Commission (OVEC, previously known as DOVE). This organization bears the responsibility of aligning vocational education and training with the demands of labor markets and fostering national economic growth. This alignment is achieved through the implementation of manpower production policies and adherence to the National Economic and Social Development Plan (Silverstone & Towler, 1984). Most public vocational colleges offer a Diploma in Secretarial Practice with Digital Applications or similar programs. In the United States, public institutions known as community or junior colleges offer two-year associate's degrees and short-term vocational certificate programs, while private vocational colleges, also known as proprietary schools or for-profit colleges, provide postsecondary vocational and technical programs (Cellini, 2009). The construction of a digital campus is an important aspect of vocational college education, and it is based on the requirements of the Code for Digital Campus of Vocational Colleges of the Ministry of Education (Yongjun et al., 2023).

In light of pertinent research studies, it has been deduced that a conspicuous pattern emerges, signifying a discernible trend in the shift towards the digital era 4.0. This transformative process is characterized by clear and unequivocal consequences, prominently highlighting the adept utilization of information systems to augment data management, thereby heightening its caliber and operational efficiency (Ngotngamwong, 2018). Moreover, this shift necessitates a deliberate endeavor to reduce paper consumption while progressively striving for the establishment of an environment conducive to paperless office practice (Tyhulu et al., 2016). This sentiment aligns with the findings of Bette, Zuin, Baêta, and Moreira (2021). Their study underscores the indispensable attributes demanded of contemporary and future-oriented secretaries, which notably encompass adeptness in technology, coupled with outstanding communication prowess.

In addition, proficiency in the operation of software applications, including Microsoft Office, Google Suite, and Adobe Creative Cloud, to oversee the manipulation of documents, spreadsheets, and presentations, is of paramount importance. Additionally, a comprehensive grasp of social media platforms, such as Twitter and LinkedIn, assumes a pivotal role in facilitating the promotion of corporate identity and services. Furthermore, a mastery of video conferencing tools, exemplified by platforms like Zoom and Skype, emerges as a pivotal competence for the seamless orchestration of virtual meetings. Lastly, the acquisition of expertise in project management software, typified by tools like Asana and Trello, emerges as an imperative facet for ensuring effective task and deadline administration.

A study conducted by Mohd Salleh, Musa, and Sulaiman (2017) identified that competence in Information and Communication Technology (ICT) plays a pivotal role in enhancing the performance of corporate secretaries. Parallel to the research conducted by Ocholi, Aina, and Ezeani (2022) in their study titled "The Future of the Digital Workforce: Current and Future Challenges for Executive and Administrative Assistants," this article delves into an examination and projection of the extent and profundity of the ramifications posed by contemporary and forthcoming technologies on the roles of executive and administrative assistants.

The role of secretaries in educational institutions is undergoing a profound transformation. Once relegated to traditional administrative tasks, secretaries are now increasingly equipped with and empowered to tackle strategic, digital-enabled functions. Mastering communication tools, navigating online scheduling systems, meticulously maintaining digital records, and integrating educational technology into the academic landscape are just some of the skills defining the modern secretary (Dütting, Lattanzi, Leme, & Vassilvitskii, 2020). Beyond administrative streamlining, secretaries actively enhance the student experience through online support platforms, foster digital literacy skills, facilitate online learning initiatives, and engage students through social media. Furthermore, their contributions extend to data-driven decision-making, as they generate insightful reports, identify trends and patterns, and actively support research and evaluation efforts (Musty, 2023).

Based on the aforementioned background and significance, it is evident that advancements in digitalization have created a demand for secretaries who can drive organizational progress and support employers' work. As organizations adapt to the evolving digital landscape, it has become imperative for secretaries to be equipped to handle technological changes in the workplace. This shift towards digitalization has had a significant impact on the secretarial profession globally, necessitating the presence of secretaries who are well-prepared for digital work environments (Ezeonwurie, 2022). Previous research has thus underscored the significance of digital competence within the landscape of digital transformation across diverse societal contexts. Notably, these studies have drawn attention to the disparities in digital competency education and evaluation, with particular emphasis on the proficiencies pertaining to technology, including software applications and tools.

However, a noticeable research gap pertains to the quantitative appraisal of digital proficiencies, which is a focal aspect of this investigation. This study places distinct emphasis on the pivotal role of such evaluative metrics, alongside the ongoing imperative of providing sustained training for secretarial professionals. This emphasis gains further prominence in light of the dynamic shifts witnessed within the realm of office technology and the concomitant technological advancements. Specifically, the study answers the following research questions: What is the level of digital competence in secretarial work among secretarial students in Thailand? The findings of this research on secretarial work among secretarial students in Thailand will be valuable for vocational colleges nationwide. These findings can guide the development of suitable learners who align with the current job market's requirements. Additionally, they can serve as a source for producing professional secretaries in the future.

1.2. Research Objective

- To investigate the level of digital competency among secretarial students in Thailand in relation to their performance in secretarial tasks.

2. METHOD

2.1. Study Population

The study population for this research consisted of secretarial students enrolled in the secretarial department of vocational colleges under the Office of the Vocational Education Commission. Since the exact population size was unknown, the researcher determined a sample size using Taro Yamane's ready-made table, which is commonly used for sample size determination. Assuming a population proportion of 0.5 and a confidence level of 95%, a sample of 400 individuals was determined (Yamane, 1973).

To ensure representation from different geographic regions and institutions, the researcher divided the vocational colleges under the Office of the Vocational Education Commission into five regions: Central, Northeastern, Eastern and Bangkok, Southern, and Northern. Each region consisted of a specific number of colleges, with 12 in the Central Region, 12 in the Northeastern Region, 11 in the Eastern and Bangkok Region, 12 in the Southern Region, and 15 in the Northern Region.

A sample of 80 students per semester was selected from five regions. The researcher assumed that students enrolled in each college followed the same curriculum, resulting in similar characteristics among the population studying in each college. However, there might be variations in the college context or specific features of college readiness. To ensure fairness, the researcher employed a simple random sampling method, which provides an equal chance for every individual in the population to be selected for the sample.

2.2. Research Tools

The research instrument employed in this study was a self-developed 5-point scale questionnaire with approximately 45 questions assessing the digital competence of secretarial professional students in Thailand. This questionnaire was built upon the existing frameworks for digital competence assessment in general and those specifically targeting Thai citizens (Office of the National Digital Economy and Society Commission, 2018) while adapting them to the context of secretarial work. The researcher carefully ensured the quality of the questionnaire through a multi-stage process, specifically focusing on digital competency in secretarial work among secretarial students in Thailand. To establish content validity, three experts examined the questionnaire using the Index of Item-Objective Congruence (IOC). This index helped evaluate the alignment between the items and the objectives of the questionnaire.

A pilot test was also conducted using the draft version of the digital competency questionnaire for secretarial work among secretarial students in Thailand. A sample of 40 individuals was selected for this purpose, representing a group used for experimentation with research tools. The researcher analyzed the quality of each questionnaire item by assessing the discriminant power and item-total correlation. These analyses were performed using a data analysis software package.

2.3. Data Collection

The data collection phase involved a sample of 400 participants. The researcher collected data from this sample to further investigate digital competency in secretarial work among secretarial students in Thailand. By adhering to these steps, the researcher ensured the reliability and validity of the questionnaire, which proved to be a valuable tool for assessing digital competency in secretarial work among professional secretarial students in Thailand. The details are provided in Table 1, which illustrates the outcomes of the item analysis performed to calculate the Cronbach's alpha measure, and assessing the relationship between the questionnaires.

Table 1. Outcomes of the item analysis performed to calculate the Cronbach's alpha.

Scale: All variables			
Case processing summary			
		N	%
Cases	Valid	40	100.0
	Excluded[a]	0	0.0
	Total	40	100.0
a. Listwise deletion based on all variables in the procedure.			
Reliability statistics			
Cronbach's alpha	Cronbach's alpha based on standardized items		N of items
0.971	0.971		56

In summarizing the case processing and reliability statistics, all 40 cases in the study were deemed valid, yielding a 100% inclusion rate. Listwise deletion, encompassing all variables, ensured a comprehensive analysis with no missing data. Further, the analysis revealed strong internal consistency, with a Cronbach's alpha of .971. This high coefficient remained consistent when applying it to standardized items, verifying the robustness of the 56-item dataset and indicating strong, positive correlations among the variables.

Table 2 presents a Summary of Corrected Item-Total Correlations for Digital Competence Questionnaire, showing the individual item's influence on the overarching characteristics of the scale. It provides insights into the mean scale value, scale variance, Corrected Item-Total Correlation, squared multiple correlation, and Cronbach's alpha, considering the removal of items for each variable.

Table 2. Illustrates the summary of corrected item-total correlations for digital competence questionnaire.

Item-total statistics					
N of items	**Scale mean if item deleted**	**Scale variance if item deleted**	**Corrected item-total correlation**	**Squared multiple correlation**	**Cronbach's alpha if item deleted**
VAR00001	248.9750	293.820	0.687	0.000	0.970
VAR00002	249.0000	294.821	0.626	0.000	0.970
VAR00003	249.1250	299.958	0.334	0.000	0.971
VAR00004	248.9750	293.820	0.687	0.000	0.970
VAR00005	248.9500	293.023	0.739	0.000	0.970
VAR00006	249.1250	300.676	0.292	0.000	0.971
VAR00007	248.9750	294.743	0.633	0.000	0.970
VAR00008	248.9750	293.820	0.687	0.000	0.970
VAR00009	249.0000	301.436	0.242	0.000	0.971
VAR00010	248.9750	293.051	0.733	0.000	0.970
VAR00011	248.9750	293.820	0.687	0.000	0.970
VAR00012	249.1250	300.676	0.292	0.000	0.971
VAR00013	248.9750	294.743	0.633	0.000	0.970
VAR00014	249.1000	298.605	0.410	0.000	0.971
VAR00015	248.9750	294.743	0.633	0.000	0.970
VAR00016	248.9750	293.820	0.687	0.000	0.970
VAR00017	249.0000	294.821	0.626	0.000	0.970
VAR00018	248.9750	293.051	0.733	0.000	0.970
VAR00019	248.9750	294.743	0.633	0.000	0.970
VAR00020	248.9750	293.051	0.733	0.000	0.970
VAR00021	249.0000	294.718	0.574	0.000	0.971
VAR00022	249.1000	300.451	0.302	0.000	0.971
VAR00023	248.9750	293.820	0.687	0.000	0.970
VAR00024	248.9750	293.666	0.697	0.000	0.970
VAR00025	248.9750	293.820	0.687	0.000	0.970
VAR00026	248.9750	294.897	0.624	0.000	0.970
VAR00027	249.0000	294.821	0.626	0.000	0.970
VAR00028	249.0000	301.436	0.242	0.000	0.971
VAR00029	248.9500	293.382	0.718	0.000	0.970
VAR00030	248.9750	293.820	0.687	0.000	0.970
VAR00031	248.9750	293.820	0.687	0.000	0.970
VAR00032	248.9750	294.743	0.633	0.000	0.970
VAR00033	249.1500	298.387	0.432	0.000	0.971
VAR00034	248.9750	294.743	0.633	0.000	0.970
VAR00035	248.9750	294.743	0.633	0.000	0.970
VAR00036	248.9750	295.153	0.609	0.000	0.970
VAR00037	249.0000	293.333	0.713	0.000	0.970
VAR00038	248.9750	294.743	0.633	0.000	0.970
VAR00039	248.9750	293.820	0.687	0.000	0.970

Item-total statistics					
N of items	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
VAR00040	248.9500	295.228	0.609	0.000	0.970
VAR00041	249.1000	299.221	0.374	0.000	0.971
VAR00042	248.9500	295.228	0.609	0.000	0.970
VAR00043	248.9750	294.743	0.633	0.000	0.970
VAR00044	249.0000	294.821	0.626	0.000	0.970
VAR00045	248.9750	293.820	0.687	0.000	0.970
VAR00046	248.9750	294.743	0.633	0.000	0.970
VAR00047	248.9500	294.151	0.672	0.000	0.970
VAR00048	249.0000	293.333	0.713	0.000	0.970
VAR00049	248.9500	295.228	0.609	0.000	0.970
VAR00050	248.9750	293.051	0.733	0.000	0.970
VAR00051	248.9500	294.151	0.672	0.000	0.970
VAR00052	249.0000	294.410	0.650	0.000	0.970
VAR00053	248.9750	294.743	0.633	0.000	0.970
VAR00054	248.9500	295.228	0.609	0.000	0.970
VAR00055	249.1750	298.917	0.407	0.000	0.971
VAR00056	249.0000	294.821	0.626	0.000	0.970

Notably, the scale mean exhibits minimal fluctuation within the narrow range of 248.9500 to 249.1750, underscoring a consistent level across all items. The Corrected Item-Total Correlation, serving as an indicator of individual item strength, varies from .242 to .739. Crucially, a majority of items surpass the .6 criterion (ranging from .242 to .739), thereby positively influencing the scale's internal consistency. The consistently high values for both squared multiple correlation and Cronbach's alpha further affirm the robust reliability of the entire scale. These findings underscore a cohesive set of items characterized by strong inter-item relationships, ultimately confirming the reliability and consistency of the measurement scale.

2.4. Procedures and Methods for Data Analysis

Data analysis was conducted to assess the digital competency in secretarial work among secretarial professional students in Thailand. Descriptive statistics, including the mean and standard deviation (SD), were utilized to interpret the digital competency levels of the sample group. The mean range was established based on the criteria outlined by Best and Kahn (2006) as follows:

4.50 - 5.00: Students demonstrated the highest level of digital competency in secretarial work.

3.50 - 4.49: Students exhibited a high level of digital competency in secretarial work.

2.50 - 3.49: Students displayed a medium level of digital competency in secretarial work.

1.50 - 2.49: Students' digital competence in secretarial work was at an elementary level.

1.0 - 1.49: Students' digital competency in secretarial work was at a level that required further development.

3. RESULTS

3.1. Digital Literacy

Table 3 presents the mean ($\bar{x}$) and standard deviation (SD) scores for competencies related to Digital Literacy. The secretarial students in Thailand demonstrated a high level of proficiency in these competencies, indicating their strong digital literacy skills and digital competency in secretarial work.

Table 3. Results of digital competency in secretarial work of secretarial students in digital literacy.

Digital literacy competencies	$\bar{x}$	SD.
1. The proficiency in utilizing search engines to efficiently retrieve desired information by employing appropriate search terms or keywords.	4.09	0.75
2. The skill in analyzing and summarizing primary information or media content received, while distinguishing between facts and opinions.	4.00	0.74
3. The capability to generate information or media content in a manner that aligns with given instructions, ensuring accuracy and safety.	3.96	0.75
4. The aptitude to accurately specify the content to be searched for or accessed.	4.04	0.74
5. The competence in swiftly accessing information from diverse sources and assessing the credibility of the obtained information through comparison.	3.99	0.80
Total	4.02	0.76

The first competency focuses on the proficiency in utilizing search engines to retrieve desired information efficiently, received an average score of 4.09 with a standard deviation of 0.75. This demonstrates the participants' ability to effectively use search terms or keywords to obtain the information they need. In the competency 2, participants displayed skill in analyzing and summarizing primary information or media content while differentiating between facts and opinions. They scored an average of 4.00 with a standard deviation of 0.74, indicating their ability to critically evaluate and extract relevant information from various sources. In terms of the third competency of generating information or media content aligned with given instructions, the participants scored an average of 3.96 with a standard deviation of 0.75. This highlights their capability to create accurate and safe content based on specific guidelines. The competency 4, which pertains to accurately specifying the content to be searched for or accessed, received an average score of 4.04 with a standard deviation of 0.74. This demonstrates the participants' aptitude for identifying and defining their information needs. The competence 5 of swiftly accessing information from diverse sources and assessing the credibility of the obtained information through comparison scored an average of 3.99 with a standard deviation of 0.80. This indicates the participants' ability to efficiently navigate through various sources and evaluate the reliability of the information they acquire.

3.2. Digital Use: Digital Skills/ICT Skills

The study focused on digital competency in secretarial work among secretarial students, specifically examining their proficiency in using digital skills (Digital Skills/ICT Skills). The study encompassed five key areas: computer usage, internet usage, word processing, spreadsheet programs, and presentation programs. Table 4 summarizes the results of digital competency in secretarial work among secretarial students in the domain of digital use.

Table 4. Results of digital competency in secretarial work of secretarial students in digital use.

Digital use competencies	$\bar{x}$	SD.
Computer usage:		
1. Utilizing hardware, such as desktop computers or portable laptops, for work purposes.	4.08	0.79
2. Employing operating systems such as windows operating system or Linux operating system to facilitate work-related tasks.	4.01	0.77
3. Managing data through tasks like classification and file management (Using file manager) on the computer.	4.04	0.79
4. Performing data backup and recovery procedures, such as backing up and restoring files.	3.90	0.82
5. Utilizing mobile devices like smartphones and tablets for work-related activities.	4.21	0.76
6. Leveraging cloud computing systems, such as Google, Microsoft, or Amazon, to facilitate work processes.	4.15	0.80
Internet usage:		
7. Web browsing: Proficiency in using web browsers such as Edge, Chrome, Firefox, and Opera for work-related tasks.	4.00	0.85
8. Information Retrieval: Effective utilization of search engines such as Google, Bing, Yahoo, and Wiki to find information assigned for work.	4.08	0.80
9. Email usage: Proficiency in using email services such as Gmail, Outlook, and Yahoo by creating an email account. Ability to read and compose emails, conduct correspondence, and send/Receive email attachments for work-related communication and coordination.	4.03	0.81
10. Cloud computing and services: Utilization of various programs through internet-based cloud	4.06	0.77

Digital use competencies	$\bar{x}$	SD.
computing or cloud service platforms.		
11. Online office applications: Proficiency in using online office applications such as Google Documents, Google Slides, Google Sheets, etc., for work-related tasks.	4.09	0.80
12. Online calendar management: Utilization of online calendars such as Google Calendar to plan and manage work, appointments, and events. Ability to schedule events using the invitation system, share calendars with colleagues, and search for events.	4.00	0.79
13. Social media utilization: Competence in using social media platforms such as Facebook, Twitter, and Instagram to promote, communicate, and create a positive image for employers and organizations.	4.18	0.78
14. Communication programs: Proficiency in using communication programs such as line, WeChat, and WhatsApp for communication and coordination purposes.	4.14	0.77
15. Smartphone applications: Utilization of smartphone applications such as voice recorder, video recorder, and voice typing for various work-related tasks.	4.03	0.80
16. Video conferencing: Competence in conducting video conferences using tools such as Skype and Zoom.	4.07	0.79
17. Electronic transactions: Proficiency in utilizing electronic transaction platforms such as PayPal, Mobile Banking, Internet Banking, Prompt Pay, True Wallet, Rabbit Line Pay, and AirPay for secure financial transactions.	4.05	0.82
Using a word processor:		
18. Proficiency in utilizing word processing programs such as Microsoft Office, LibreOffice, and online document managers like Google Docs for work-related tasks.	4.05	0.80
19. Effective management of documents as assigned.	4.07	0.76
20. Ability to customize font styles and correctly use heading marks.	4.09	0.77
21. Skill in arranging paragraphs in a document appropriately.	4.05	0.79
22. Competence in inserting objects into a document.	4.04	0.81
23. Proficiency in printing documents for work purposes.	4.07	0.80
Using spreadsheet programs:		
24. Proficiency in utilizing spreadsheet programs such as Microsoft Office, LibreOffice, Google Sheets, Polaris Office, and SoftMaker FreeOffice for work-related tasks.	3.98	0.82
25. Ability to effectively manage spreadsheets, including creating worksheets and correctly managing data in cells, rows, and columns.	3.98	0.79
26. Competence in adjusting data within the worksheet, such as moving data, filtering data, and sorting data correctly.	3.93	0.81
27. Skill in formatting data within the worksheet.	3.99	0.79
28. Proficiency in setting printing settings, including print preview and printing worksheets.	4.01	0.79
29. Ability to utilize function formulas for calculations.	3.92	0.80
30. Competence in inserting objects onto the worksheet and customizing them.	3.97	0.81
31. Skill in setting sheet protection to ensure data security.	3.92	0.84
Using presentation programs:		
32. Proficiency in utilizing presentation programs such as Microsoft Office, LibreOffice, Google Slides, and Polaris Office for creating and delivering presentations.	4.00	0.82
33. Ability to effectively manage presentations, including creating new presentations, managing slide views, and selecting suitable layouts.	4.01	0.79
34. Skill in using text within slides, including proper formatting and selection of appropriate heading styles.	4.01	0.78
35. Competence in inserting objects into presentations and adjusting them appropriately.	3.97	0.81
36. Proficiency in setting slide transitions and applying appropriate styles for smooth and engaging slide transitions.	3.99	0.81
Total	4.03	0.80

Table 5 summarizes the study's results on digital competency in secretarial work among students pursuing professional secretarial roles, emphasizing the use of digital technologies in five competency areas. It presents the proficiency levels of secretarial students in various digital competency areas.

Table 5. The summary table shows the results of the study of digital competency in secretarial work of secretarial professional students using digital tools.

Competency area	Proficiency level
Computer usage	High (4.07)
Internet usage	High (4.07)
Using a word processor	High (4.06)
Using spreadsheet programs	High (3.96)
Using presentation programs	High (4.00)

The participants demonstrated a high level of proficiency in computer usage and internet usage, both scoring 4.07 out of 5. They showed excellent skills in utilizing hardware, operating systems, web browsers, and online search engines. In terms of using a word processor, the students displayed a high proficiency level with a score of 4.06. They were able to effectively use word processing programs, format text, and manipulate document elements. Regarding spreadsheet programs, the participants exhibited a high level of proficiency, scoring 3.96. They demonstrated competence in creating worksheets, managing data, applying formulas, and formatting cells. In the area of using presentation programs, the students showcased a high proficiency level, scoring 4.00. They were able to effectively create and deliver presentations, customize slide layouts, and incorporate multimedia elements.

These results indicate that secretarial students possess a strong foundation in digital competencies, particularly in computer usage, internet usage, word processing, spreadsheet programs, and presentation programs. These skills are essential for their future roles in secretarial work, enabling them to effectively utilize digital tools and technologies in their professional responsibilities.

3.3. Problem Solving with Digital Tools

Table 6 illustrates the results of digital competency in secretarial work among secretarial students, demonstrating their abilities in problem-solving using digital tools.

Table 6. Results of digital competency in secretarial work of secretarial students in problem solving with digital tools.

Problem solving with digital tools competencies	$\bar{x}$	SD.
1 . Proficiency in resolving various issues related to the use of digital technology.	3.88	0.80
2. Ability to utilize digital tools effectively for problem-solving in the workplace.	3.98	0.73
3. Skill in selecting appropriate digital tools based on specific needs and desired outcomes, while also maintaining up-to-date digital skills.	3.94	0.78
4. Capability to identify diverse causes of problems arising from the use of digital devices, tools, services, or environments through various approaches.	3.87	0.81
5. Competence in analyzing and evaluating problems, enabling the prioritization of solutions and the selection of appropriate remedies.	3.87	0.81
Total	3.91	0.79

Table 6 presents the mean ($\bar{x}$) and standard deviation (SD) scores for problem-solving competencies using digital tools. The participants exhibited a high level of proficiency in various aspects of problem solving with digital technology. In terms of resolving issues related to the use of digital technology (Competency 1), the participants scored an average of 3.88 with a standard deviation of 0.80. This indicates a solid level of proficiency in addressing digital technology-related challenges. The ability to effectively utilize digital tools for problem-solving in the workplace (Competency 2) received an average score of 3.98 with a standard deviation of 0.73. This suggests that the participants are skilled in applying digital tools to solve work-related problems. Competency 3, which involves selecting appropriate digital tools based on specific needs and maintaining up-to-date digital skills, scored an average of 3.94 with a standard deviation of 0.78.

This demonstrates the participants' competence in choosing the right tools for specific tasks and their commitment to staying updated in their digital skills. For Competency 4, which focuses on identifying causes of problems arising from digital devices, tools, services, or environments, the participants scored an average of 3.87 with a standard deviation of 0.81.

This highlights their capability to analyze and identify various sources of digital technology-related issues. Lastly, Competency 5, which pertains to analyzing and evaluating problems and selecting appropriate remedies, received an average score of 3.87 with a standard deviation of 0.81. This indicates the participants' competence in critically assessing problems and making informed decisions regarding solutions. Overall, the participants demonstrated strong problem-solving abilities with digital tools, indicating their readiness to navigate and address challenges in the digital workplace.

3.4. Adaptive Digital Transformation

Table 7 illustrates the results of digital competency in secretarial work among secretarial students in adaptive digital transformation competencies.

Table 7. Results of digital competency in secretarial work of secretarial students in adaptive digital transformation.

Adaptive digital transformation competencies	$\bar{x}$	SD.
1. Ability to adapt and integrate into the digital ecosystem.	4.16	0.72
2. Sensitivity towards the needs of others and proficient management of those needs.	4.16	0.74
3. Proficiency in developing personalized techniques and learning methods for quick and efficient acquisition of knowledge.	4.17	0.75
4. Capacity to generate and actualize innovative ideas.	4.12	0.74
5. Possession of adaptive thinking skills to navigate various situations.	4.08	0.72
6. Aptitude for adapting to emerging trends and phenomena in new media (New-media literacy).	4.12	0.73
7. Ability to learn and comprehend diverse disciplines and foster transdisciplinary understanding.	4.09	0.76
8. Competence in designing logical ideas (Computational thinking) and emotional intelligence (Sense making) when collaborating with others and solving problems.	4.09	0.74
9. Proficiency in negotiation skills for effective problem-solving (Negotiation).	4.07	0.75
10. Efficiency in managing and operating multiple applications simultaneously (Multi-tasking) or across different platforms.	4.10	0.72
Total	4.12	0.74

Table 7 displays the mean ($\bar{x}$) and standard deviation (SD) scores for competencies related to Adaptive Digital Transformation. The participants exhibited a high level of proficiency in these competencies, indicating their readiness for digital transformation. Competency 1, which focuses on the ability to adapt and integrate into the digital ecosystem, received an average score of 4.16 with a standard deviation of 0.72. This demonstrates the participants' capability to seamlessly transition and function within the digital environment. Participants displayed a high level of sensitivity towards the needs of others and proficiently managed those needs (Competency 2), scoring an average of 4.16 with a standard deviation of 0.74. This highlights their interpersonal skills and the ability to cater to the requirements of others.

In terms of developing personalized techniques and learning methods for efficient knowledge acquisition (Competency 3), the participants scored an average of 4.17 with a standard deviation of 0.75. This indicates their proficiency in tailoring learning approaches to enhance their learning outcomes. Competency 4, which relates to the capacity to generate and actualize innovative ideas, received an average score of 4.12 with a standard deviation of 0.74. This highlights the participants' creativity and their ability to bring their ideas to fruition. The possession of adaptive thinking skills to navigate various situations (Competency 5) scored an average of 4.08 with a standard deviation of 0.72. This demonstrates the participants' ability to adapt and respond effectively to different circumstances. Competency 6, which pertains to adapting to emerging trends and phenomena in new media (New-Media Literacy), received an average score of 4.12 with a standard deviation of 0.73. This indicates the participants' ability to stay updated with new media trends and effectively utilize them.

The ability to learn and comprehend diverse disciplines and foster transdisciplinary understanding (Competency 7) scored an average of 4.09 with a standard deviation of 0.76. This highlights the participants' proficiency in acquiring knowledge from various disciplines and integrating them into their understanding. Competency 8, which involves designing logical ideas (Computational Thinking) and emotional intelligence (Sense Making) during collaboration and problem-solving, received an average score of 4.09 with a standard deviation of 0.74. This indicates the participants' competence in utilizing both rational and emotional intelligence in their work. Proficiency in negotiation skills for effective problem-solving (Negotiation) (Competency 9) received an average score of 4.07 with a standard deviation of 0.75. This demonstrates the participants' ability to negotiate and resolve issues in a constructive manner. Finally, the efficiency in managing and operating multiple applications

simultaneously or across different platforms (Competency 10) scored an average of 4.10 with a standard deviation of 0.72. This indicates the participants' proficiency in multitasking and handling diverse applications. Overall, the participants showcased a high level of competence in the adaptive digital transformation competencies, highlighting their preparedness for the evolving digital landscape.

Figure 1 illustrates the digital competency levels of secretarial professional students in Thailand concerning their performance in secretarial work.

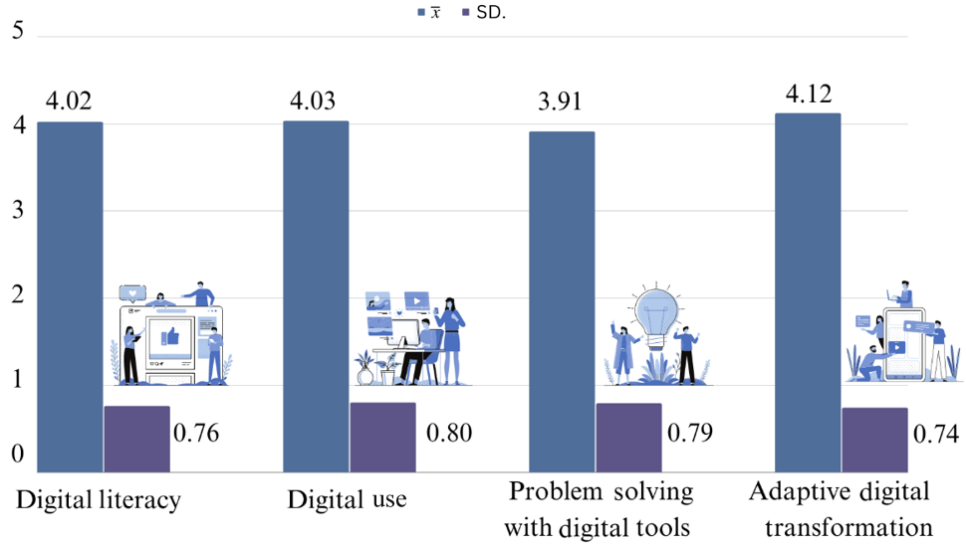

Figure 1. Summary of results: Digital competency in secretarial work of secretarial professional students in Thailand.

The provided information presents the mean ($\bar{x}$) and standard deviation (SD) of different digital competencies among secretarial students in Thailand. The students' digital literacy competencies were found to have a mean score of 4.02, with a standard deviation of 0.76. This indicates a relatively high level of proficiency in utilizing digital literacy skills such as using search engines effectively and analyzing information. Regarding digital use competencies, the students achieved a mean score of 4.03, with a standard deviation of 0.80. This suggests a high level of competence in utilizing digital tools and applications, including computer usage, internet usage, word processing, spreadsheet programs, and presentation programs. In terms of problem-solving with digital tools competencies, the students attained a mean score of 3.91, with a standard deviation of 0.79. This indicates a good level of proficiency in utilizing digital tools to address and resolve various issues encountered in their work. Furthermore, the students demonstrated adaptive digital transformation competencies, with a mean score of 4.12 and a standard deviation of 0.74. This suggests a high level of adaptability to the digital ecosystem, sensitivity toward the needs of others, and proficiency in utilizing personalized learning methods and innovative thinking to navigate digital transformations. Overall, the study indicates that secretarial students in Thailand possess a strong foundation in digital competencies, including digital literacy, digital use, problem-solving with digital tools, and adaptive digital transformation.

4. DISCUSSION

Research on digital competencies in secretarial work is highly relevant in a globalized and technology-driven workplace. Ngotngamwong (2018) research underscores the necessity for secretarial roles to adapt to the era of globalization and embrace new facilitating technologies, which entails continuous learning. The implementation of telework patterns during the COVID-19 pandemic further highlights the importance of adaptation. A study conducted by Bette et al. (2021) involving executive secretaries in the private sector revealed that a majority of the interviewees noticed a shift in their skill utilization, resulting in increased independence due to changes in the scope of their work and work environment. Additionally, in the post-pandemic context, most respondents confirmed that

companies would not revert to their pre-pandemic work methods and would require enhanced digital skills to keep pace with technological advancements.

Similarly, the study by Chinweike, Lawrencia, and Angela (2021) emphasizes the growing demand for future secretaries who possess digital employability skills in order to excel within organizations. These skills encompass electronic record management, as well as the use of photo-based and video-based social media applications, among others. In a related research conducted by Oborah (2021) in Nigeria, a strategic framework utilizing SWOT analysis is proposed to address the threats posed by interventionist measures, technological advancements, and government policies that impact the secretarial profession. Consequently, stakeholders are advised to consistently review the curriculum, provide cutting-edge technology, and update government policies to align with the evolving landscape of secretarial practices.

In addition, Amadi (2022) study on promotion strategies for enhancing secretarial performance in business organizations acknowledges the necessity of implementing strategies to empower secretaries in the rapidly evolving global business landscape. These findings collectively contribute to the identification and understanding of the essential digital competencies required for secretarial professionals to excel in their roles. Consequently, this knowledge serves as a valuable guide for educational institutions, training programs, and employers in developing comprehensive curricula, training modules, and job descriptions that effectively address the demands of the digital workplace. These insights align with the research conducted by which investigates the effectiveness of digital workplace changes and highlights the significance of digital competencies in promoting sustainable action within the field of education.

The research underscores the increasing importance of digital competencies for secretaries in educational institutions. Dütting et al. (2020) depict a profound transformation, as modern secretaries must now master communication tools, navigate online scheduling systems, meticulously maintain digital records, and integrate educational technology into the academic landscape. Beyond streamlining administrative tasks, secretaries directly enhance the student experience through online support platforms, foster digital literacy skills, facilitate online learning initiatives, and engage students through social media. Their contributions extend even further, encompassing data-driven decision-making through generating insightful reports, identifying trends and patterns, and actively supporting research and evaluation efforts (Musty, 2023). These diverse skill sets highlight the multifaceted nature of digital competencies required for secretaries to thrive in the modern educational environment.

5. RECOMMENDATIONS

Research focused on digital competence within the realm of secretarial work is of paramount relevance within the contemporary globalized and technology-driven professional landscape. The significance of this research stems from several key factors. Firstly, it aids in the identification and comprehensive understanding of the foundational digital proficiencies imperative for secretarial practitioners to excel in their duties. This knowledge serves as a guiding compass for educational institutions, training initiatives, and employers, shaping curricular frameworks, training modules, and job specifications. By ensuring that secretaries possess the requisite skills to adeptly navigate the demands of the digital workplace, this research underpins their professional efficacy. Additionally, the research assumes a pivotal role in shaping the contours of training programs and professional development endeavors, illuminating the specific digital competencies integral to secretarial roles. This informed perspective informs the structuring of workshops, training sessions, and courses, fostering the enhancement of digital acumen and enabling practitioners to remain attuned to technological progressions within their domain. Moreover, the research findings wield significant influence in refining recruitment and selection procedures. By discerning the essential digital competencies indispensable to secretarial positions, employers are empowered to craft job descriptions, competence frameworks, and evaluation criteria that harmonize with the requisite technological proficiencies. This, in turn,

augments organizational efficiencies, amplifying productivity through the recruitment of candidates aligned with the digital demands of the role.

6. CONCLUSION

This exploratory study investigated the digital competencies of secretarial students enrolled in vocational colleges under the Office of the Vocational Education Commission in Thailand. A self-developed questionnaire, grounded in existing frameworks for digital competence tailored for Thai citizens, was adapted to the specific context of secretarial work. 400 Participants completed the questionnaire.

Findings revealed a high level of digital literacy among students, including proficient use of search engines, critical information analysis, and accurate content creation. They also demonstrated adeptness in computer usage, internet navigation, and effective utilization of word processors, spreadsheets, and presentation tools. These results highlight the importance of equipping secretarial students with robust digital skills to meet modern workplace demands. Further research and continuous digital skills development are crucial for the continued success of secretarial professionals in an increasingly digitalized environment.

Furthermore, analysis indicated problem-solving competencies in using digital tools, enabling students to effectively resolve related issues. Moreover, they exhibited adaptive digital transformation competencies, showcasing their ability to adapt to the digital ecosystem, understand user needs, and engage with emerging media trends. These findings hold significant implications for educational institutions and policymakers in Thailand, emphasizing the need for enhanced digital literacy programs and curricula designed specifically for secretarial professionals.

Overall, the study underscores the critical role of digital skills in the secretarial profession and the importance of continuous learning and adaptation in a rapidly evolving digital landscape. By demonstrating their proficiency in utilizing digital tools and technologies effectively, secretarial students in Thailand position themselves as valuable assets in the workforce.

Funding: This research is supported by the Faculty of Humanities and Social Sciences, Khon Kaen University, Thailand (Grant number: 66-3/004).
Institutional Review Board Statement: The Ethical Committee of the Center for Ethics in Human Research, Khon Kaen University, Thailand on 26 May 2023 (Ref. No. HE663154).
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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