

Influence of Information Needs and Information Seeking Behavior on Graduate School Students' Literacy Skills

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ABSTRACT: *In today's intricate and swiftly changing information landscape, possessing information literacy skills is crucial for the academic endeavors of graduate school students. This study explored the influence of information needs and information seeking behavior of graduate school students on their information literacy skills. The research looked at how graduate students in a private higher education institution in Cagayan de Oro, during the first semester of the 2023-2024 school year, use and seek information. The study used a questionnaire answered by 347 participants from various courses. Findings show that the participants appeared a strong awareness of their information needs, indicating clarity in what they were looking for. They understood the importance of checking and confirming information to make sure it is reliable. The study also found that participants actively searched for information, considering their thoughts, feelings, and experiences in the process. Importantly, the participants demonstrated high skills in information literacy, including evaluating information, using effective search strategies, accessing online databases, and citing sources correctly. This suggests that they have a good understanding of key concepts related to information literacy and are proficient in using these skills. The study concluded that there is a significant connection between students' information needs, how they search for information, and their information literacy skills. Those who have higher information needs and actively seek information are more likely to have better information literacy skills. Overall, the research highlights the complex relationship between these factors in the academic environment.*

KEYWORDS: graduate school students, information needs, information seeking behavior, information literacy skills.

INTRODUCTION

Information literacy skills are essential for graduate school students' academic pursuits, especially in today's complex and rapidly evolving information environment. These skills enable them to effectively and efficiently locate, evaluate, and use information from various sources. They are particularly critical for graduate students expected to engage in advanced research and scholarship. The growing reliance on digital technologies and the internet has made information literacy skills essential for graduate students to become proficient in handling complex research projects and decision-making tasks (Satti, 2020). Research has shown that having strong information literacy skills can positively affect graduate school students' academic performance, as well as their ability to navigate the overwhelming amount of information available to them (Miksa, 2018; Yang & Wang, 2020).

Nevertheless, the influence of information needs and information-seeking behavior of graduate school students' information literacy skills remains uncertain (Chinako & Daniel, 2022; Zhao et al., 2023). Bawden (2018) and Vakkari et al. (2020) advocate for more empirical research to uncover the connection between information literacy skills and information behavior and the development and integration of these skills into graduate education. Additionally, investigating the most effective strategies and techniques to enhance information literacy among graduate students is warranted (Argelagos et al., 2022; Liao & Tian, 2022).

Within the Philippine context, few studies have focused on the influence of these skills on graduate students' information-seeking behavior and information needs. The studies by Kasim (2019) and Yap (2018) dealt with the information literacy practices of graduate students in the Philippines positively influencing academic achievement among graduate students. This literature gap has prompted local librarian-scholars to call for more research.

Furthermore, there are notable gaps in the practical applications of information literacy skills in graduate education. Although graduate students recognize the importance of information literacy skills, they often need sufficient training (Zhang et al., 2021). This highlights the need for higher education institutions to provide graduate students with more comprehensive information literacy training. Universities and colleges in the Philippines have recognized the importance of information literacy skills and implemented information literacy programs. However, these programs are often limited and do not provide comprehensive training tailored to graduate students' needs.

With the foregoing discussions, the influence of graduate school students' information needs and information-seeking behavior on their information literacy skills is an essential area of study within the Philippine context. The gaps in the literature and practical applications suggest a need for more empirical research to fill the gaps in the literature and comprehensive information literacy training

tailored to graduate students' needs. This study, therefore, aims to contribute to the existing literature and practical applications of information literacy skills in graduate education by investigating graduate school students' information needs and information-seeking behavior on their information literacy skills within the Philippine context, particularly in the research locale.

Framework

This study assumes that awareness of information needs and information-seeking behavior influence graduate school students' information literacy skills. This assumption is supported by the Wilson Model of Information Behavior (1996) and ACRL Framework for Information Literacy for Higher Education (2015).

Thomas Wilson's Model of Information Behavior (1996) provides a critical framework for understanding graduate school students' information needs. This model posits that information needs arise when individuals perceive a gap between their current knowledge and their desired understanding, as outlined by Wilson (2020). Wilson's intricate construct reveals that information needs are primarily driven by the 'user component,' which encompasses requirements, aspirations, values, beliefs, and capabilities.

Furthermore, Wilson suggests information needs have a nuanced duality - they can be overtly expressed or subtly implicit, evolving due to various factors. These include professional/personal changes or developments in one's field. Notably, the model highlights how users' context significantly influences needs by acknowledging forces like social dynamics, culture, and technology that shape requirements.

At the heart of Wilson's model lies the 'information system component,' which plays a pivotal role in addressing diverse user needs. These systems, from libraries to informal networks, provide vital access to tools, resources, and services that facilitate seeking and navigating the expanding information landscape. This component considers availability, accessibility, quality, reliability, ease of use, and search effectiveness - all factors that influence meeting user needs.

Equally critical is the information source component, which addresses the multifaceted nature of users' needs. Information sources offer unique insights across a spectrum from primary to tertiary resources. The quality and relevance of sources play a crucial role in shaping user perceptions and meeting specific needs. Aspects like credibility, timeliness, accuracy, and utility highlight the importance of careful selection, as sources greatly influence journeys.

Finally, Wilson's model presents an opportunity to develop information literacy skills. Recognizing a need, information-literate individuals can precisely identify required information, as noted by Reddy et al. (2020). This underscores the importance of developing these skills for effective information management in today's information-centric world.

In this study, the information needs identified are based on the categorization developed by Ingwersen (2000). These needs are verificative information needs, conscious topical information needs, and muddled topical. The succeeding discussions will elaborate on these information needs.

Firstly, Verificative Information Need (VIN) is a concept that relates to the information-seeking behavior of users seeking to verify or confirm a particular piece of information. It focuses on the user's need to find reliable and trustworthy sources to validate or authenticate the information they have encountered. Wilson's (1997) model describes the intricate web of variables that explains why people seek knowledge. As a graduate school student, verifying information is essential in maintaining academic integrity, enhancing credibility and professionalism, upholding ethical conduct, ensuring work quality, promoting professional development, adhering to academic standards, and fostering personal growth. Information is a valuable resource that contributes to the growth of society (Eyinade & Bakare, 2022). By emphasizing information correctness and reliability, a graduate school student can contribute to the integrity of education and establish a solid foundation for future work as a researcher or professional.

Secondly, a user with Conscious Topical Information Need (CIN) clarify, evaluate, or explore information in a known subject matter and area. In contrast, known subject matter refers to topical (unstructured) data about contents such as terms, concepts, and picture representation. The conscious acts interacting with an information search system, including information retrieval (IR) systems and the World Wide Web (WWW), are called information searching behavior. (Wilson, 2000). The phenomena of information seeking are complex, and they are rising due to the increased usage of online resources via the Internet as individuals' needs for accurate information increase (Kostagiolas et al., 2021). As a graduate student, evaluating information is critical for developing critical thinking skills, maintaining research integrity, improving the quality of work, avoiding misinformation and bias, developing a solid knowledge base, conducting ethical research, and fostering professional development. By developing their skills as an information evaluator, learners enhance their ability to contribute substantially to an area of study and succeed in their academic and professional endeavors.

Lastly, a user with a Muddled Topical Information Need (MIN) is exploring new concepts and relationships outside of the known subject matter or domain. Information exists in different forms, such as internal, external, physical, and tacit, with characteristics such as accessibility and precision (Ugbala et al., 2022). As a graduate student, exploring new concepts of known information fosters intellectual growth, pushes the boundaries of knowledge, advances research and scholarship, bridges disciplinary gaps, enhances creativity and innovation, promotes career and professional development, and contributes to the betterment of society. Engaging in new ideas and concepts is necessary to contribute significantly to the field and push development in academia and beyond.

Wilson's model of information behavior provides a strong theoretical framework for examining the intricate dynamics that influence graduate students' information-seeking processes. The model

elucidates information-seeking as a complex, multifarious phenomenon stemming from the interplay of these factors: cognitive, affective, and experiential, which combine to form each person's distinct approach to information gathering.

This comprehensive model serves as an instrument, sketching not merely the pathways of information acquisition but highlighting the underlying psychological and sociocultural factors driving the search for knowledge within an increasingly information-rich global landscape. Consequently, Wilson's paradigm transcends theoretical abstraction, furnishing researchers and practitioners with a guiding framework for understanding how individuals navigate the vast and ever-expanding information in the digital epoch.

In this study, the information behavior identified by the researcher is sourced from the model, as mentioned earlier, of information behavior, including cognitive, affective, and experiential factors. The succeeding discussions will elaborate on these factors to thoroughly understand these variables.

Cognitive factors refer to the mental processes involved in understanding and processing information. These include the individual's knowledge, skills, and abilities, as well as their perception of the relevance and importance of the information. According to the Wilson model, cognitive factors play a critical role in shaping information needs, as they determine the individual's ability to comprehend and use the information effectively (Wilson, 2000). Almorsy and Alnajjar (2020) found that cognitive factors such as the type of research question influenced students' information-seeking behavior. Similarly, Niu and Hemminger (2017) used the model to study the information-seeking behavior of graduate students, emphasizing the importance of cognitive and affective factors in shaping their information behavior.

Affective factors refer to the emotional and motivational aspects of information behavior. These include the individual's interests, values, attitudes toward the information, as well as their level of motivation and engagement. The Wilson model suggests that affective factors are closely intertwined with cognitive factors, shaping the individual's perception of the relevance and importance of the information (Wilson, 2000). Kitzie and Gudex (2018) applied the Wilson model to investigate graduate students' information needs and behavior in the social sciences. They concluded that affective factors such as curiosity and interest influenced their information-seeking behavior.

Experiential factors refer to the individual's past experiences with information-seeking and use. These include their previous successes and failures and their level of familiarity and comfort with different types of information sources and channels. The Wilson model argues that experiential factors can shape the individual's information needs and behavior, influencing their preferences and biases toward specific information sources and channels (Wilson, 2000). A study by Zhang and Gao (2021) used the Wilson model to explore the information needs and behavior of Chinese graduate school students, finding that past experiences played essential roles in shaping their information behavior.

The ACRL Framework for Information Literacy for Higher Education (ACRL 2015) emerged as a pivotal response to transformations reshaping the information landscape. Formally embraced in 2016, the ACRL encapsulates an ethos of inclusive, participatory engagement characterizing academic communication. Its significance resonates through academia and is instrumental in advancing information literacy.

The ACRL reimagines information literacy objectives to equip graduate students to understand intricate knowledge-making processes and navigate, employ, and contribute to diverse information. Recognizing information literacy as crucial for intellectual growth and academic excellence, the ACRL becomes an indispensable guidepost for graduate educational journeys.

As Bagget et al. (2018) underscored, the ACRL offers a comprehensive information literacy approach encompassing skill development and a more profound comprehension of the evolving information landscape. Aligning with Liu et al. (2022), who revealed that students with better information literacy exhibit more effective information-seeking, the ACRL represents a paradigm shift - empowering graduate students as adept navigators and contributors within today's complex information ecosystem.

The ACRL recognizes discipline-specific knowledge as essential in information literacy, highlighting and evaluating distinctive sources and practices (ACRL, 2016). Scholars utilize ACRL to gain insight into capabilities and efficiently tailor graduate programs to research interests (Zhao et al., 2023).

Furthermore, the ACRL acknowledges that information literacy skills are needed at every research stage. Librarians can use it to identify points for graduate students to apply skills most effectively, enabling gap identification and solutions (Soria et al., 2017).

This study, therefore, utilized the ACRL to investigate graduate information literacy - skills like evaluating of information sources, effective search strategies, ability to use databases, and ability to cite resources properly - across research process stages.

Evaluating of Information Sources. According to the Association of College and Research Libraries, evaluating information sources, encompassing citations, and understanding a source's authority is critical for graduate students. Proper citation acknowledges intellectual contributions, reflects ethical practice, and provides an exploration trail for sources. These concepts of authority align with ACRL's assertion that authority is contextual and multidimensional, dependent on subject expertise for credibility rather than universal applicability.

Understanding relevance is also essential. Graduate students must discern that an authoritative source in one context may not be appropriate or credible in another. This involves assessing a source's credentials and fitness regarding specific research needs. Additionally, students should distinguish between primary sources offering firsthand evidence versus secondary sources analyzing primary data. Critically evaluating differences in utility and value-added between source

types is crucial for rigorous, ethical research. Developing contextual evaluation skills ultimately empowers graduate students to gauge sources' credibility and contribution to their scholarly work.

Effective Search Strategies involve techniques and approaches to optimize finding relevant and reliable information. The ability to properly cite resources is information creation as a process within the broader information literacy framework, as defined by the ACRL Framework. It entails various processes and considerations to achieve correct and acceptable source credit. An individual must engage in critical thinking and questioning when evaluating authority. Graduate school students can improve the efficiency and efficacy of the information-seeking process by using good search strategies and considering searching as strategic exploration. It also highlights that information seeking is an active and strategic behavior that comprises exploration, discovery, and adaption of search tactics. Graduate students should be able to identify appropriate search terms using Boolean operators and utilizing advanced search options. They should also be familiar with the different types of databases and search engines and their respective search interfaces.

Ability to Use Online Databases. Online databases play an essential role in providing access to vast volumes of scholarly knowledge in today's digital age, making the ability to navigate and use them efficiently an essential part of information literacy. By using online databases, scholars can access the most recent research findings, investigate multidisciplinary views, and participate in academic conversations within their field of study. Researchers can stay up to date on current scholarship and contribute to ongoing academic conversations by being able to search and retrieve material from online databases.

Graduate students need to be able to navigate online databases to find relevant information. This includes understanding how to use search tools, accessing full-text articles, and utilizing such features as alert services and saved searches. More importantly, there should also be the ability to evaluate the quality of databases and understand their disciplinary focus.

Ability to Cite Resources Properly. It refers to adequately crediting and acknowledging the original authors or developers of information sources used in academic work. It entails adhering to established citation styles or formatting requirements to maintain uniformity and clarity in attributing sources. Citing sources correctly is a vital component of academic research and inquiry, and it aligns with ACRL (Association of College and Research Libraries) values. The ACRL (2015) emphasizes the significance of ethical and responsible research techniques, including accurate and appropriate source citations.

Graduate students need to be able to cite sources properly to avoid plagiarism and to give credit to the sources used. This involves understanding citation styles, correctly formatting citations, and the importance of citing sources in different contexts. Graduate students should also be familiar with citation management tools, such as EndNote, Zotero, Mendeley, and many more, to help them organize and manage their citations.

Overall, the analysis of the intricate interrelationship between graduate students' information needs, seeking behaviors, and literacy skills acquisition affords enlightening insights. Graduate students manifest multifarious information requirements, spanning verified data, conscious interest cultivation in specific domains, and sometimes nebulous information-gathering motives. An interleaving of cognitive ideations, affective sensibilities, and subjective life experiences shapes their modes of inquiry.

Furthermore, strong information literacy competencies—encompassing critical source appraisal, effective search strategies, dexterous online database navigation, and proper source citation—prove indispensable for graduate scholars. Such skills empower students to successfully traverse the vast sea of information, ensuring the ability to critically evaluate, retrieve, and utilize information optimally for academic undertakings.

In summary, graduate students' iterative information needs and seeking patterns continually inform the development of literacy skills, which, cyclically, enable the ever-more successful fulfillment of arising needs and refinement of behaviors. Comprehending this complex interdependent phenomenon assists in creating supportive frameworks to promote graduate academic excellence. Figure 1, in the subsequent page, depicts the graphical presentation of the interplay of the variables as used in the context of this study.

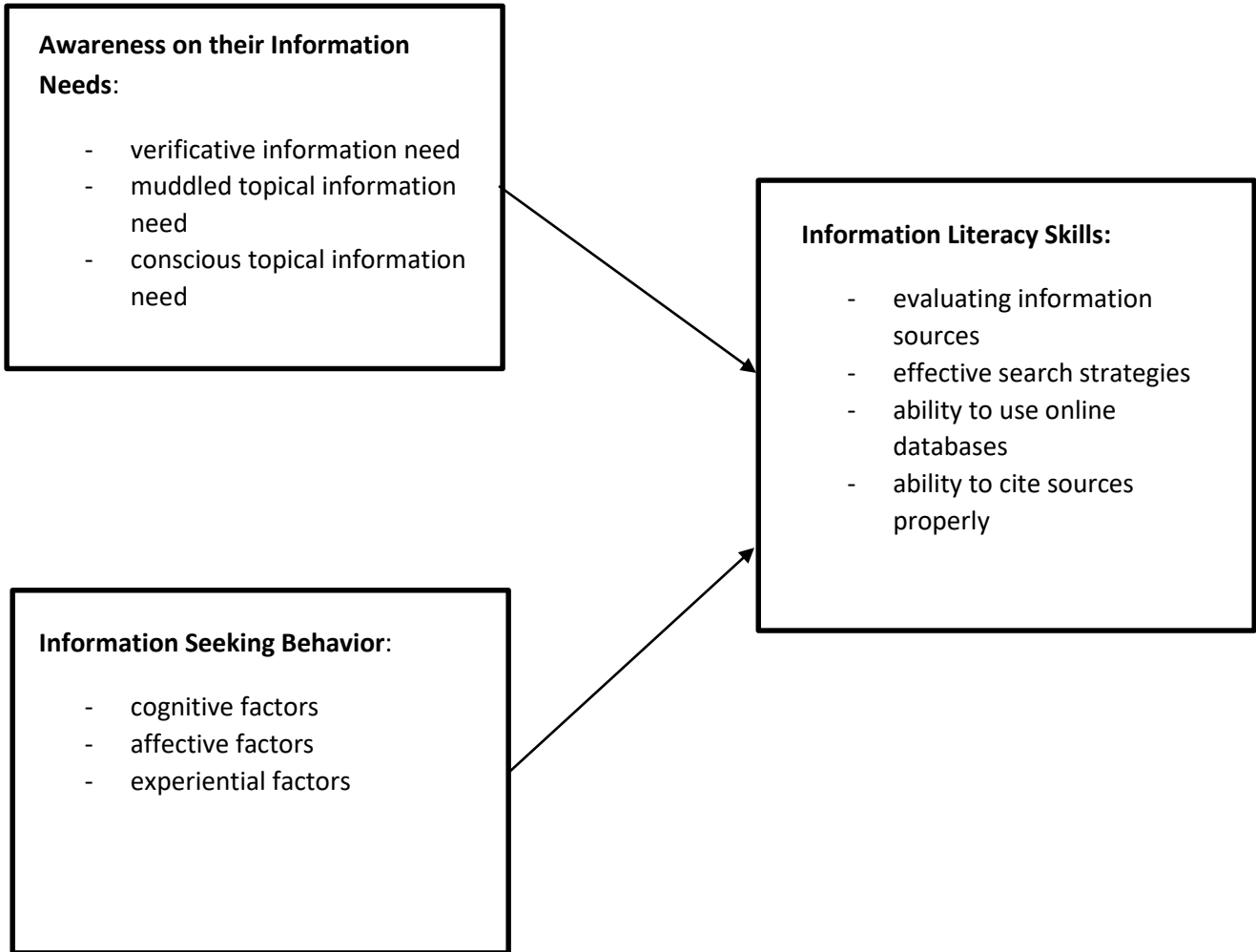


Figure 1 – Schematic Diagram of the interplay of the variables of the study

Objective of the Study

This study assumes that awareness of information needs and information-seeking behavior influence graduate school students' information literacy skills.

METHODS

This study employed a descriptive correlational design encompassing two predictor variables—information needs, information-seeking behaviors—and one outcome variable: information literacy skills. Descriptive correlational design is employed in study designs that seek to provide a static representation of circumstances while also establishing the relationship between variables (McBurney & White, 2009). The study design would also allow the researcher to track changes in the participants' behaviors or attitudes over time in order to discover how these changes influence future outcomes (Monsen & Horn, 2007). As such, this approach facilitated multidimensional data gathering on the complex interplay between graduate students' information needs, behaviors, and emergent literacy capacities. By illuminating this phenomenon from interlinked dimensions, the rich insights afforded via this design promote more informed comprehension and allow for substantiated analytic generalizations. The complementarity of data on how information needs and seeking behaviors shape information literacy skill development will provide a comprehensive understanding to inform potential improvements in graduate-level information literacy education approaches.

RESULT AND DISCUSSION

Table 1 gives the basic descriptive data, to demonstrate scale reliabilities, normality measures, means and standard deviations.

Table 1. Scale Reliabilities, Normality Measures, Means, Standard Deviation, and Zero-Order

<i>Variable</i>	<i>Cronbach's Alpha (R)</i>	<i>Mean</i>	<i>SD</i>
1. Verificative Information Need	.704	4.19	0.52
2. Conscious Topical Information Need	.816	3.95	0.72
3. Muddled Topical Information Need	.779	4.10	0.10
4. Cognitive Factors	.775	4.03	0.61
5. Affective Factors	.826	4.15	0.80
6. Experiential Factors	.685	4.05	0.65
7. Evaluating Information Sources	.906	4.03	0.71
8. Effective Search Strategy	.761	3.87	0.71
9. Ability to Use Online Databases	.852	4.08	0.70
10. Ability to Cite Resources Properly	.857	4.14	0.69

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.312	.249		1.26	.210
Verificative Information Need	.074	.080	.055	.921	.358
Conscious Topical Information Needs	-.163	.077	-.140	-2.13*	.034
Muddled Topical Information Needs	.240	.084	.220	2.84**	.005
Cognitive Factors	.324	.082	.281	3.96**	.000
Affective Factors	.234	.077	.199	3.02**	.003
Experiential Factors	.172	.075	.151	2.29*	.023

Model Summary

R= .702 R²= .493 Adjusted R² = .485 F = 55.20** p = .000

The combination of predictor variables accounting for 48.5 percent of variance in participant information literacy, alongside the noted evolution of student information practices over time (Parrish et al, 2023), spotlight two key opportunities. First, recognizing that needs and behaviors dynamically change throughout academic careers flags a requirement for flexible scaffolding at each transitional skill level. Rather than a one-size-fits-all approach, support should adapt across iterative metacognitive and technological competency developments as students' progress.

Second, results isolate the cognitive domain's outsized influence on literacy, aligning with Arono et al. (2022) states that enhancing digital skills gain more in performing information literacy skills, and builds up various strategies in gathering or finding information. This result means specifically focusing on building critical thinking during information searches can be helpful and have positive effects in gathering information. Customizing assistance to students' shifting needs as they advance can profoundly improve interactions with information. Participants' skill is shaped through each learning experience. So information literacy skills attuned in prioritizing cognitive enhancement that may constructively influence the ultimate acquisition and usage of knowledge academically and across lifelong horizons thereafter.

CONCLUSION

This study reveals how graduate students engage with information in a thoughtful way, showing their motivation for lifelong learning and careful analysis. The participants stand out for their active and strategic use of information skills, going beyond just technical abilities and emphasizing critical thinking. The results shows that this has broader impacts on developing critical thinking skills among graduate students, contributing to information science and education, and highlighting the importance of teaching graduate students how to navigate and use information effectively in today's complex world.

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