

Graduate Students Views in Using Search Engines for Thesis Writing

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Abstract

The search engine market found that Google held a prominent position as the preferred search engine among graduate students. As these students heavily depend on search engines to meet their academic requirements, enjoy advantages such as convenient search outcomes and increased confidence in utilizing web search engines for their thesis writing. This qualitative-descriptive research describes the behavioral intentions of graduate students in using search engines in their thesis writing. The study utilized semi-structured written interviews to gather data through Google Forms and delivered using a messenger application to the informants who were purposively selected using purposeful sampling. The information gathered was then analyzed through thematic Analysis. The findings revealed that three (3) themes emerge from the results, namely: Behaviors, Factors, and Outcomes, and five (5) meaningful categories, namely: Stress, Open Mindedness, Transitioning, Peer Influence, and Performance output. The study shows that their use of current technology helped graduate school students by maximizing the use of search engines in their skills in thesis writing.

Keywords: Search Engines, Graduate students, Thesis writing.

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Introduction

The global search engine market from 2010 to 2016 has been studied having 90% of the results showing Google as the most widely used search engine in the world. Users are said to benefit from personalized search in ways such as interpreting the areas of complex questions, seeing relevant search results, and ultimately enjoying a better search experience. Moreover, interest in using search engines has been growing increasingly especially among students because they rely on web searches for their academic needs. Online electronic resources, including search engines such as Google

Scholar, Academia, Science Direct, Research Gate, and Eric are the most commonly used resources, particularly for complex academic tasks. Concerning its effect on academic performance, results have shown satisfaction among various search engines like Google Scholar. An average gain score of 3.89 was reported by (Kundu, 2020); (Tang et al., 2022); (Trespacios et al., 2023), improving students' perspectives and self-efficacy in using web search engines. In addition, there is also a positive relationship with the general average point (GPA) of students using libraries as sources of information (Soria et al., 2014). However, students have come to rely on these search engines for default information, which often leads to irrelevant, biased, and information overload (Rieger, 2009). Furthermore, lack of internet connectivity and resources hinder access to search engines, leading to a lack of knowledge and skill.

The collection of studies on search engines and their effect on academics have made a general connotation of their valued effect of improvement on the academics of the students from varied disciplines. Yet not every discipline is equally suited to a discovery tool (Asher et al., 2013). Moreover, the application of search engines was negatively correlated with the learners' performance outcomes. Search engines and their relation to academic performance are mainly focused on students taking bachelor's degrees or lower years and grade levels and the lack of graduate student studies on the use and practices of the internet and search engine while for academic tasks should be addressed. Search engines are used by students to complete academic projects and seek information, therefore it is vital to recognize the importance of the internet as means of academics (Javaid et al., 2023); (Kooli, 2023); (Darling-Hammond et al., 2020); (Labadze et al., 2023). The purpose of this study is to describe how search engines were used by graduate students for their thesis.

The information obtained from search engines are not entirely reliable and may be regarded as a source of bias and irrelevant information. More so, it is critical to have skills and ability to use search engines to achieve and meet academic demands effectively. Thus to describe how search engines affect thesis writing, the theory of Planned Behavior (TPB) was used for interpreting the views of graduate students through their practices in using search engines for thesis writing. In TPB, there are three determinants to explain their perspectives. These three factors are envisioned as having both immediate and long-term effects on perception via perceived behaviors. Based on the TPB, this research described the behaviors of graduate students in making use of search engines for thesis writing.

Methodology

Research design

This study utilized qualitative research design, a form of systematic empirical inquiry into meaning. It was anchored on a naturalistic inquiry approach which describes and interprets the experiences and actions of people and groups. Moreover, this study is in relation to the TPB theory to interpret their behaviors in making use of search engines for thesis writing.

Informants and Sampling

The informants of this study were selected through a set of purposeful sampling and distributed to the five (5) graduate students that undergo inclusion criteria to ensure the validity of the outcomes. The inclusion criteria are as follows: (a) enrolled as graduate school student at a public university, (b) pursuing a master's degree in social studies, (c) having their final oral thesis defense presented to the research committee, and (d) using search engines such as Google Scholar, academia, science direct, research gate, and Eric.

Table 1. Inclusion Criteria

Informants	West Visayas State University	Masteral Degree (Social	Final Thesis Defense (Stage)	Search Engines used: Google Scholar, Academia, Science direct, Research
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		(Graduate Student)	Studies)		gate, and Eric
1.	Mary	✓	✓	✓	✓
2.	Supremo	✓	✓	✓	✓
3.	Noel	✓	✓	✓	✓
4.	Ron	✓	✓	✓	✓
5.	Jenny	✓	✓	✓	✓

Instrument

This study utilized a semi-structured written interview to collect detailed information of the participants while giving them flexibility in how they responded through open-ended questions. Three (3) experts in qualitative research reviewed and validated the interview guide questions to ensure validity and reliability. Overall, the study's credibility was strengthened by the validation process, which made sure the questions were thorough and suitably crafted to derive significant data.

Data collection

Before conducting the study, a letter was submitted to the Dean of the College of Education to ask permission to conduct the study. Also, informed consent was made to be given to the informants considering ethical considerations to ensure the informants' complete confidentiality and protection. Then, the researchers disseminated the link of a semi-structured written interview through google forms using a messenger application. Lastly, the data gathered was organized and transcribed using Google Docs in which the informants were labeled individually.

Data analysis

This study utilized thematic analysis which requires the transcription of written interviews that followed coding stages. The first stage is where researchers read and re-read transcripts to identify potential themes. They specifically look at how to create overall themes and sub-themes while keeping the variety of the original codes. The second stage involved analysis by the researchers, who found phrases that fit with the main themes. Before defining and labeling the themes, the researchers then reviewed them. For the final stage, the writing up of the report started when the researchers had agreed on the themes.

Results

The results showed that graduate students find search engines to be efficient and helpful when writing their thesis. These findings indicated that graduate students developed behaviors, factors, and outcomes when using search engines. These behaviors, factors, and outcomes are broken down into meaningful categories of stress-free, open-mindedness, peer influences, transitioning, and performance output which are further divided into sub-categories.

Behaviors

It is the developed attitude of graduate students in the use of search engines. It consists of a total of two categories namely, stress-free and open-mindedness.

Stress-Free

It is a concept or condition relating to an individual's behavior "stress", which is a natural human response to our actions and is inevitable in our lives. Moreover, in this category, there are factors that result stress-free in using search engines that are divided into two sub-categories: time reducing and convenient accessing.

Time reducing

Though search engines have multiple resources, results show that the use of different search engines simultaneously reduces searching time and increases efficiency.

Jenny: “It is easy to look for some articles or related studies/works of literature that are needed in my research in a short time. By using search engines it could save time in finding relevant information in different platforms.”

Ron: “It allows me to quickly and easily find information that is of genuine interest or value without having to sift through a large number of irrelevant web pages.”

Supremo: “Spending time in search for the pieces of information and data are at any time anywhere as long as signal is available.”

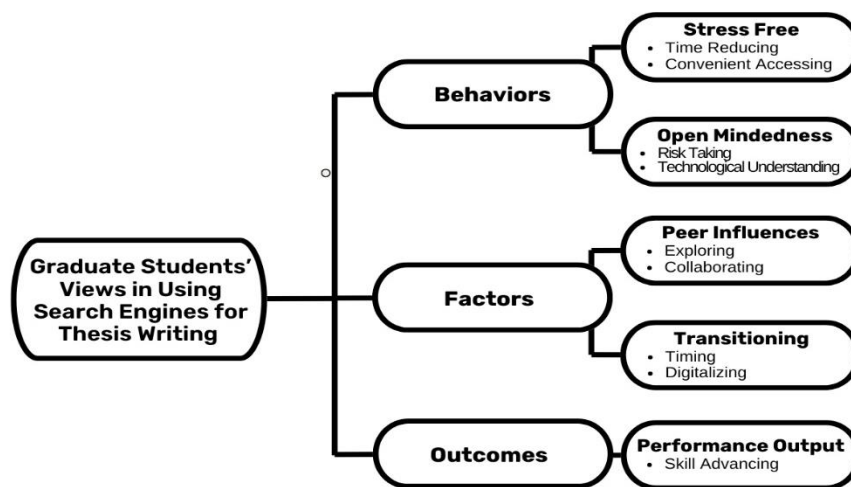


Figure 1. Illustrations of meaningful categories

Convenient Accessing

The web environment is familiar to users, therefore, they are comfortable and confident in making the choice to access sources of information that are available on the net .

Jenny: “It can access a wide range of sources including websites, images, videos, etc. It provides with diverse resources to find the information I need. It could access a vast amount of information on any topic which can help more informed decisions.

Ron: “Search engines deliver results that are relevant to my searches, delivering relevant information on high-quality websites. Although madasig subung ang internet but need gd mag invest para sa load unlike sa library, free and very accessible for all ages.”

Open Mindedness

Being open-minded is being responsive to different viewpoints and new experiences. This behavior is linked to graduate students utilizing search engines for thesis writing that leads to risk taking, and technological understanding.

Risk Taking

It is crucial to comprehend in deeper terms how people use the World Wide Web to conduct information processing and decision-making.

Mary: “I search in google or internet what I need to do in certain action to my research. One must be a "risk taker" of using those engines.”

Ron: “My only concern is that if I will be able to integrate and use upcoming or future tools since our technology evolves and develops at a rapid pace. Unlike in the library, it doesn't require that you're

“tech-key”, all you need are your functional skills like reading, writing and comprehending to be able to conduct research.”

Supremo: “Thesis writing needs extra effort, time, money and even dedication and commitment and I could testify into that.”

Technological Understanding

The ability to utilize, understand, manage, and analyze technology in an ethical and responsible manner is known as technology literacy.

Mary: “I used only apps that are familiar to me and easy to browse. I have to be more adaptive in computer literacy because those are necessary in doing thesis writing.”

Supremo: “I recommend the use of search engines for a greater impact and with an exemplary outputs in return.”

Jenny: “Search engines are designed to provide the best possible service about the technological growth of our world.”

Ron: “Academia, Research Gate, Elsevier and other reputable sites are the go-to when it comes to research. When I am exhausted in structuring my thoughts, there are applications that assist me in paraphrasing my work. Perhaps if these search engines had not been created or even existed, conducting research or writing an academic paper would have been as difficult as it was previously.”

Noel: “In using search engine, one must be knowledgeable, cautious, and use it efficiently. I need to verify always the information that I am getting especially from the internet.”

Factors

The behavior of graduate students and how they react to certain events can both be significantly influenced by a variety of factors that resulted in the emergence of two categories and two sub-categories, specifically transitioning, and peer influences.

Transitioning

It refers to the process individuals go through when faced with change, necessitating them to adapt and adjust over time. There are various factors related to graduate students making use of search engines during their thesis writing that guided transitioning in it, which can be extended into two sub-categories, time, and digital.

Timing

The pandemic transitioned the delivering of lessons online, transforming the learning experience into a fully online course. As a result, online searches are used in classwork.

Supremo: “Search engines played a vital role among us who are taking thesis writing for this the call of time in it's generation.”

Ron: “kag indi gd dapat madula (it should not be eliminated) ang (the) traditional way of conducting research, it should be “a must” sa gihapon (still) because lain ang (it is a different) feeling nga naga kapot sang (of holding a) hard copy gd (emphasis remark). Old Technology can go hand on hand with newer technology.”

Digitalizing

Digitalization has become a significant catalyst for the widespread adoption of search engines in recent years. This shift towards digitalization reshaped the way we navigate and interact with information, revolutionizing the methods by which we seek answers and explore the digital landscape.

Mary: “I have to be more adaptive in computer literacy because those are necessary in doing thesis writing.”

Ron: “As graduate students, we were taught to use new tools in our research papers, moving away from the traditional and time-consuming method of scanning any hardbound to a simple click of a

button using search engines. My only concern is that if I will be able to integrate and use upcoming or future tools since our technology evolves and develops at a rapid pace.”

Peer influences

It is the process of acting or thinking in a way that one might or not ordinarily act or think as a result of interactions with friends and associates emerging two sub-categories such as exploring, and collaborating.

Exploring

The current educational methods have been impacted by the use and development of educational technologies exploring educational websites became vital for students in their academic responsibilities.

Mary: “Exploring those search engines equip myself to be more innovative in the fast rapid use of technology.” She added, “Experimentation and exploration are in utmost consideration in order to enhance and to make my thesis writing stress free.”

Noel: “I became more aware and learn to explore various search engines.”

Collaborating

Peer-to-peer collaboration helps students to express their ideas, leading to improved search outcomes.

Mary: “By asking those who have already done with their thesis writing, in such, their shared experiences to me gives me an idea on how to do my writing. I also tried to download free apps that they mention and search on google on how to use and browse them.”

Outcome

The performance outcome of graduate school students heavily relies on their behaviour and factors evolving category and performance output.

Performance Output

Graduate students' performance output in using search engines is determined by their ability to efficiently and effectively utilize the available search tools and techniques to find accurate and relevant information that has one sub-category which is skill advancing.

Skill Advancing

It refers to learning cognitive, technical, and interpersonal skills through planned, organized, and increased effort.

Mary: “I have to be more adaptive in computer literacy because those are necessary in doing thesis writing. Determination to know is another key pushes to achieve successful thesis.”

Jenny: “Search engines are designed to generate new ideas. It have made it possible for people to explore and gain more knowledge.”

Noel: “I became more aware and learned to explore various search engines.”

Ron: “As graduate students, we were taught to use new tools in our research papers, moving away from the traditional and time-consuming method of scanning any hardbound to a simple click of a button using search engines. Old Technology can go hand in hand with newer technology.”

Supremo: “I am recommending the use of search engines for a greater impact and with an exemplary output in return.”

Discussions

Search engines are used by graduate students in their thesis writing which led our findings to describe their views in using search engines and its effectiveness as a searching tool. Wherein, the findings showed three (3) themes namely: Behaviors, Factors, Outcomes, and further expounded by (5) meaningful categories, namely: Stress free, Open Mindedness, Transitioning, Peer Influence, and

Performance output. Stress free is a concept or condition relating to an individual's behavior “stress”, which is a natural human response to our actions and is inevitable in our life. This is linked to time reducing, as search engines are invaluable tools for graduate students as they assist in finding relevant web pages and generate responses to user queries which reduces searching time (Liu et al., 2023). As a result, search engines keep up with the growth of the web by providing access to students to be efficient that are most beneficial to their thesis writing. Meanwhile, convenient accessing is a process of accessing relevant information and sources to be convenient and hassle-free, as search engine results were readily available at any time and from any location. Search engines, such as Google and Google Scholar. Identify materials that describe the research topic and are available for literature search of published articles and journals that are convenient for providing access (Chigbu et al., 2023).

Learners benefit more from open learning environments since they can freely explore knowledge, choose their own learning strategies, and use software as resources rather than teachers and literature.. This is then supported in a study Practice and Exploration of Completely Online Network where it is stated that exploring through the use of information technology, it can serve as a guide for decision-making at the educational and teaching levels (Gao, 2021). On the other hand, studies contradict these findings as the study from 2017 states that the social effects of using the Internet are frequently associated with social networking that concerns personal networks in the social sphere. In addition, studies on the impact of social media use on already-existing social links or relationships, for instance, indicate that this Internet activity increases the process of individualization. This idea contradicts the positive effects of search engine usage as it declares that the extensive use of various search engines may cut interconnections as it promotes individualism, it also declared that search engines limit our grasp of exploration as it spoon feed the user of their individual needs. Furthermore, transitioning is the process which individuals go through when faced with change, necessitating them to adapt and adjust over time. Time is a means of adapting to the new generation of thesis writing as indicated by the responses. That can be seen in students' heavy reliance on search engines like Google as their primary or exclusive tool for seeking information.

The increase use of search engines is evident in the rise of searches performed outside of library catalog (Yu & Young, 2017). Young university researchers, heavily depend on Google for their information needs, overlooking the valuable assistance that librarians can provide. Highlights the increasing popularity over the past two decades of search engines indicating the widespread reliance for accessing information (Zhai et al., 2024); (Dwivedi et al., 2021). This increasing trend is evident in the number of searches conducted daily, with Google alone processing approximately 1.2 trillion searches worldwide and 2 trillion in 2018 (Arora et al., 2019). Likewise, the utilization of search engines can be attributed to the shift from print to digital materials and information gathering. The introduction of computer literacy skills in thesis writing has played a significant role in this transition. Having computer literacy skills is crucial for accessing digital information, and graduate students who possess computer literacy skills are more likely to use electronic resources. Which resulted in Google Scholar being used within higher education for research purposes, designed for finding scientific papers. As well as, the influence of Information and Communication Technology (ICT) has transformed libraries from conventional book-centric nature to digital, electronic, and virtual libraries (Halder, 2021). However, even though the internet contains a lot of information, it can be disorganized and unreliable, making it challenging to find credible and specific material, notably in examining citations, It was found that web citations did not last very long. Consequently, obstacles like limited accessibility and the requirement for computer skills can hinder the effective use of search engines (Botelho, 2021); (Ben Youssef et al., 2022). In addition, an increasing number of individuals, particularly younger users, are engaging in searches with higher frequency.

There are a number of limitations to this study that should be recognized and addressed in future studies. Firstly, because there are only five graduate students majoring in social studies in the sample, future research may use a bigger sample size and add other disciplines to examine views in using search engines to create thesis writing. Secondly, to include the capacity to access and expenses of graduate students in using search engines for thesis writing. Thirdly, to take account of the possible

risk of using search engines like irrelevant information and redirection to fake sites encrypted with malware, virus, and other threats. Finally, greater validation of views of graduate students in search engine usage may be provided by future research. Despite these drawbacks, this study added to the body of knowledge regarding the factors that influence graduate students' views in using search engines.

Conclusion

The use of search engines in thesis writing provides a positive effect on graduate school students who are in their thesis writing. Through search engines, the informants were able to maximize both their potential and the potential of what technology brings. The rapid growth of the internet made clear that search engines became a necessity and an essential tool in thesis writing as it provides users with privileges that help graduate school students in writing their thesis to a next level. The study underscores that exposure to the internet helped develop the advancement skills of graduate school students concerning their technological capabilities. In addition, their practical use of search engines enabled the informants to maximize the use of their time due to the proficiency search engines provides. Search engines were also able to develop a more efficient communication towards graduate school students, advisers, and peers. This promotes a collaboration process that enables a joint effort towards individuals. The use of graduate school students in their thesis writing reflects their views toward search engines. By this, we can conclude that search engines were able to accommodate the factors that are needed in thesis writing for graduate school students.

Conflicts of Interest

The authors declare no conflict of interest.

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