Original Article
ISSN (Online): 2582-7472

ShodhKosh: Journal of Visual and Performing Arts
February 2024 5(2), 1195–1198

DESIGNING AN INSTRUMENT TO EVALUATE ONLINE INFORMATION SEARCHING STRATEGIES AMONG HIGHER EDUCATION STUDENTS

Anitha. G. [1], Rajeshkumar. M. [2]

[1] Research Scholar, Centre for Educational Research, Madurai Kamaraj University, Madurai, Tamil Nadu, India
[2] Assistant Professor, Centre for Educational Research, Madurai Kamaraj University, Madurai, Tamil Nadu, India

DOI
10.29121/shodhkosh.v5.i2.2024.4916

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

This study focuses on designing a research instrument to evaluate the online information searching strategies of higher education students. The concept of information searching is analyzed across three key dimensions: Cognitive, Search Regulation, and Metacognitive processes. Leveraging insights from experts, literature reviews, and online resources, a tool comprising 36 initial statements was developed, later refined to 26 statistically validated items based on rigorous item analysis. The tool was validated using statistical methods, including t-tests, Kolmogorov-Smirnov tests, and Cronbach's Alpha, ensuring reliability and content validity. The finalized instrument highlights the interconnectedness of the identified dimensions, providing comprehensive insights into students' online information searching behaviors. It further emphasizes the significance of integrating these dimensions to improve information-seeking systems and practices, addressing gaps in the Indian educational context.

Keywords: Online Information Searching, Higher Education Students, Metacognitive Processes, Information Seeking Strategies

1. INTRODUCTION

Information seeking refers to the process of locating or retrieving necessary information from various sources. The methods employed for seeking information differ among individuals. These methods, referred to as information-seeking strategies or behaviors, encompass the approaches users adopt to locate relevant information. Wilson (2000) defines information-seeking behavior as a deliberate effort to obtain information driven by a need to achieve specific goals. Marchionini (2006) describes it as a knowledge acquisition process with a problem-oriented focus, where a solution may or may not be discovered. More specifically, it is characterized as a conscious endeavor to fulfill a knowledge gap or need. Chen and Hernon (1982) further explain that information-seeking behavior reflects an individual's response to the interplay of information needs, available resources, and the seeker's personal attributes. Together, these factors shape the responses to information-seeking in a given situation. Consequently, an individual's information-seeking patterns are shaped by their unique information environment.

The educational systems in developing nations are undergoing a significant transformation, with digital media emerging as a driving force behind this shift. Innovations in digital media have expanded the perspectives of educational

authorities, encouraging them to rethink traditional approaches to teaching and learning. The advent of modern digital media has enabled the implementation of fresh methodologies in the educational process. The influence of digital media is vast and multifaceted. It has opened up diverse opportunities for information seeking in this technologically advancing era. Resources such as electronic information platforms including CD-ROMs and network-based sources serve as primary channels for the storage and dissemination of recorded information (Akhtar, 2020).

Individuals seek information through various channels, including library information centers, online services, or consulting others. This process is referred to as 'information seeking behavior.' It represents the actions undertaken in response to a need for information. As Ellis (2009) explains, it is the "complex pattern of actions and interactions that individuals engage in when searching for information of any type and for any purpose." Similarly, Chen (1982) describes “information-seeking patterns as the paths an individual follows to address and fulfill an information need”.

In the process of online information searching, university students engage in various cognitive and metacognitive activities. These include formulating search queries, identifying relevant websites and information sources, and comparing the retrieved information with the requirements of the task at hand. When the desired information is not found, they revise their search queries to refine their results (Reisoglu et al., 2022; Sanchiz et al., 2017).

During the information seeking process, students undertake several steps to critically evaluate and synthesize information. They assess whether the information collected from various sources adequately supports their claims, compile evidence by synthesizing the information, and employ diverse formats such as text, video, and audio to present their evidence from multiple perspectives (Namdar, 2017). These information searching activities, in turn, foster the development of metacognitive skills, which are recognized as essential competencies of the 21st century (Ala-Mutka, 2011).

1.1. STATEMENT OF THE PROBLEM

Research on information searching strategies primarily emphasizes the impact of individual characteristics and the nature of information searching tasks on these strategies, as well as the interplay between such characteristics and the strategies themselves (Monchaux et al., 2015; Sanchiz et al., 2017). However, there is a noticeable lack of applied studies aimed at enhancing information searching strategies or promoting the use of metacognitive skills (Reisoglu et al., 2020). In this context, it is essential for the researcher to design a tool that evaluates higher education students' online information searching strategies and supports the enhancement of these skills.

1.2. OBJECTIVES

The primary aim of this study is to create a research instrument for assessing higher education students' online information searching strategies. Notably, there appears to be a lack of tools designed to evaluate these strategies with specific dimensions from an Indian perspective, prompting the researcher to develop such an instrument.

2. METHODOLOGY

In this study, the concept of information searching was explored across three dimensions: Cognitive, Search Regulation, and Metacognitive processes of students. To design the research tool, the researcher initially sought input from experts in teacher education, higher education faculty with extensive teaching experience, and professionals in information technology. Additionally, relevant literature was reviewed, and online resources were consulted to gather comprehensive insights. Using the collected information, 36 statements were formulated for the tool. The responses were structured on a 5-point Likert scale, with options ranging from "Strongly Agree" to "Totally Disagree," assigned weightages of 5, 4, 3, 2, and 1, respectively. The tool was implemented among 100 higher education students, and the collected data were meticulously scored. Following this, the instruments were organized in descending order based on the scores, ranging from the highest to the lowest. For item analysis, the responses from the top 27% and bottom 27% of the participants were selected.

To select reliable items, the researcher employed three statistical methods: t-value, Kolmogorov-Smirnov test, and Cronbach's Alpha test. The research tools collected from higher education students were ranked in descending order based on their scores. The top 27% and bottom 27% of respondents were identified, resulting in a total of 54 samples being considered for analysis. For both the higher and lower groups, individual test item scores were examined. The

Kolmogorov-Smirnov test was applied to assess the equality of mean scores, and items with significantly differing mean scores were retained (Guilford, J.P., 1965). Items showing Kolmogorov-Smirnov test values significant at the 0.01 level were included in the final tool. Cronbach's Alpha values were calculated for the two sets of scores corresponding to each statement. Items with Alpha values greater than 0.5 were retained, while those below 0.5 were excluded. Additionally, the significance of test items was established by calculating t-values, with statements showing t-values greater than the table value at the 0.01 level being considered for inclusion.

The finalized tool was developed based on statistical criteria, with Cronbach's Alpha values ranging from 0.74 to 0.93, Kolmogorov-Smirnov test values between 1.99 and 4.96, and t-values from 3.64 to 11.58. Out of the initial 36 statements, 26 were deemed statistically valid. The final version of the tool, titled "Online Information Searching Strategies among Higher Education Students," comprises 26 statements scored on a five-point scale, allowing respondents to achieve a maximum score of 130 and a minimum score of 26.

3. RELIABILITY AND CONTENT VALIDITY OF THE TOOL

The reliability coefficient of the tool was determined using the split-half method and was found to be 0.76, indicating validity. During the initial phase of tool development, the selected statements were reviewed by experts in educational psychology, information and communication technology, and teacher education testing for their approval. These experts evaluated the appropriateness of the statements, which were subsequently revised based on their recommendations. This process ensured the content validity of the tool prior to its administration.

4. CONCLUSION

The developed tool clearly identifies and elaborates on the dimensions necessary for assessing "Online Information Searching Strategies among Higher Education Students." It highlights the practical value of these dimensions in addressing specific aspects of information searching, including cognitive, regulatory, and metacognitive processes. Furthermore, it provides insightful recommendations for enhancing the efficiency and effectiveness of information-seeking systems by incorporating strategies aligned with the identified dimensions. By emphasizing the interconnectedness of these dimensions, the tool underscores the importance of an integrated approach to information searching. It suggests that a well-designed system should cohesively blend these dimensions to provide a comprehensive and robust framework for understanding and improving online information searching behaviors. This holistic perspective not only enriches academic exploration but also contributes to the advancement of practical applications in digital information environments.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

REFERENCES

Akhtar, G. (2020). Impact of Digital Media on Information Needs and Seeking Behavior of University Teachers in Pakistan.

Ala-Mutka, K. (2011). Mapping digital competence: Towards a conceptual understanding. *Sevilla: Institute for Prospective Technological Studies*, 7-60.

Chen, C. C., & Hernon, P. (1982). *Information Seeeking: Assessing and anticipating user's needs*. New York: Neal-Schuman.

Ellis, R. A., Hughes, J., Weyers, M., & Riding, P. (2009). University teacher approaches to design and teaching and concepts of learning technologies. *Teaching and Teacher Education*, *25*(1), 109-117.

Guilford, J. P. (1965). The minimal PHI coefficient and the maximal PHI. *Educational and Psychological Measurement, 25*(1), 3–8.

Marchionini, G. (2006). Exploratory search: from finding to understanding. *Communications of the ACM*, *49*(4), 41-46.

Monchaux, S., Amadieu, F., Chevalier, A., & Marine, C. (2015). Query strategies during information searching: Effects of prior domain knowledge and complexity of the information problems to be solved. *Information Processing & Management*, *51*(5), 557-569.

Namdar, B. (2017). A Case Study of Preservice Science Teachers with Different Argumentation Understandings: Their Views and Practices of Using Representations in Argumentation. *International Journal of Progressive Education*, *13*(3), 95-111.

Reisoglu, İ., Cebi, A., & Bahcekapılı, T. (2022). Online information searching behaviours: Examining the impact of task complexity, information searching experience, and cognitive style. *Interactive Learning Environments*, *30*(3), 417-434.

Reisoglu, I., Toksoy, S. E., & Erenler, S. (2020). An analysis of the online information searching strategies and metacognitive skills exhibited by university students during argumentation activities. *Library & Information Science Research*, *42*(3), 101019.

Sanchiz, M., Chevalier, A., & Amadieu, F. (2017). How do older and young adults start searching for information? Impact of age, domain knowledge and problem complexity on the different steps of information searching. *Computers in Human Behavior*, *72*, 67-78.

Wilson, T. D. (2000). Human information behavior. *Informing science*, *3*, 49.