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College Student Self-Efficacy in Information Literacy: Influence On Their Research Academic Skills

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ABSTRACT: *Self-efficacy in information literacy refers to the individual's confidence in his ability to locate, evaluate, and use information to accomplish a goal. This concurrent nested mixed method explored the college students' self-efficacy in information literacy in relation to their research academic skills. There were 81 fourth-year college students enrolled in the program of Bachelor of Science in Information Technology in a satellite campus of a state university in Misamis Oriental. The instrument's validity and reliability were ensured through panel review and reliability test using the Cronbach's alpha. Data were analyzed using descriptive statistics and multiple regression analysis. Findings reveal that participants' research academic skills were generally very good, indicating that they performed well on their capstone research project and their self-efficacy on information literacy skills were generally all high. Self-efficacy in information literacy skills in terms of synthesizing and creating significantly influenced the research academic skills. Strengthened research capability emerged as the theme which contributed good in academic research skills. It was concluded that students who had high self-efficacy in information literacy skills were more likely to feel confident in their ability to conduct effective research and use information effectively, thus contributing to effective research academic skills. This study points the need to develop and implement innovative information literacy programs.*

KEYWORDS: self-efficacy, information literacy, research academic skills, influence on research skills, self-efficacy on information literacy, academic research skills

INTRODUCTION

With the advent of technology these days, many students depend on ever-ready Internet sources. Everything is laid down, and in just a few clicks, information can be extracted. Before, when most sources were printed materials, searchers exerted effort in reading, analyzing, and comprehending material. Thus, skills in information literacy are hampered (Chu and Law, 2017).

The capacity to locate, assess, organize, use, and transmit information in a variety of formats is known as information literacy. This ability is especially important when making decisions, solving problems, or learning new information. Knowledge of procedures is useless without the assurance that these are implemented. The ability to obtain information on its own is insufficient (Clark, 2017).

Students in college must be adept at locating and using resources in a technologically advanced information environment. People frequently have to organize and retrieve data from numerous sources. The authority, trustworthiness, and currency of information determine its suitability for different situations. To access pertinent information, people need information literacy abilities

There is a lack of research that specifically examines the relationship between self-efficacy in information literacy and academic research skills among college students (Hsieh and Cho, 2017). While there are studies that explore the relationship between self-efficacy and academic performance, there is limited research that focuses on information literacy self-efficacy and its role in developing academic research skills among college students. Hence, this study hopes to fill in the gap that is observed.

Considering the aforementioned facts, the researcher found it essential to conduct a study on the information literacy situation in school where she is employed. It was observed that some students, particularly those with Research subjects, struggle to comprehend information. The school where the researcher is presently employed found that the school never had a licensed librarian for several years, and only had a library-in-charge without background in library science. Although a licensed librarian was hired in 2020 until today, the restoration process in enhancing information literacy is still going on. Some students still faced challenges especially during the COVID-19 pandemic and had limited access to resources. Students may use the internet without understanding information reliability, and their self-efficacy beliefs about information literacy can affect their research abilities. The findings provide valuable information on how to motivate students to become more information literate. Mery (2016) in “Information Literacy Identity” concluded that understanding and supporting students’ information literacy identities can help promote more effective and engaging information literacy instruction. In addition, this study contributes to the literature on information literacy, particularly in terms of the development of students' research academic skills and self-efficacy in information literacy.

Statement of the Problem

This study determined college students’ self-efficacy in information literacy in relation to their research academic skills. Specifically, it answered the following questions.

1. What is the participants’ level of research academic skills?
2. What is the level of the participants’ self-efficacy of information literacy skills in terms of:
   2.1 recognizing the need for Information;
   2.2 distinguishing the ways of addressing the gaps;
   2.3 constructing strategies for locating;

2.4 organizing, applying, and communicating; and
2.5 synthesizing and creating?

3. Do the participants' self-efficacy on information literacy skills significantly influence their research academic skills?

4. What are the participant's experiences in applying self-efficacy in information literacy on their research academic projects?

Theoretical and Conceptual Framework

This study assumes that the students' self-efficacy in information literacy significantly influence their research academic skills. This assumption is based on self-efficacy as explained in *socio-cognitive theory* proposed by Bandura (1977), *information literacy identity theory* developed by Lillis and Scott (2007) and the *Society of College, National and University Libraries (SCONUL) pillars of information literacy* model (2011).

The term self-efficacy is one of the central constructs of Bandura's (1986) social cognitive theory, and it refers to an individual's perception of his or her capacity to achieve a specific objective (Aharony and Gazit, 2018). Albert Bandura (1977) avers that self-efficacy refers to a person's confidence or belief in one's own abilities to perform tasks or accomplish goals. It can apply to numerous other domains, most notably information literacy. In information literacy, it emphasizes the possession of information skills and the self-assurance to use these skills effectively. In other words, individuals must also develop confidence in the skills they are acquiring.

Furthermore, information literacy identity theory (Mery, 2016) is another anchor of this study. This theory suggests that individuals develop a sense of identity related to information literacy based on their experiences and interactions with information. According to this theory, individuals with a stronger sense of identity related to information literacy are more likely to engage in information-seeking behaviors and develop higher levels of self-efficacy.

Moreover, the Society of College, National and University Libraries' (SCONUL) Pillars of Information Literacy Model (2011) outlined the factors of information literacy which are the bases for evaluating students' literacy information level. In this study, only five pillars of information literacy were used as the foundation in evaluating students' literacy in information. Only these pillars were used as they were the only ones applicable in this study as manifested by a validity test.

In this study, mind and tools are represented by the information literacy skills students use in their research process. These skills include the following abilities: (1) recognizing the need for information; (2) distinguishing ways of addressing gaps; (3) constructing strategies for locating; (4) organizing, applying, and communicating; and (5) synthesizing and creating (SCONUL, 2011).

Recognizing the need for information relates to the need for information being a critical component of information literacy, as it involves identifying when information is necessary to make informed decisions, solve problems, or create new knowledge. Individuals who have high self-efficacy in recognizing the need for information are likely to be more confident and proactive in seeking out the information they need, while those with low self-efficacy may be more hesitant or unsure. However, simply having access to these resources is not enough; patrons also need to be aware of their existence in order to make effective use of them, as well as the necessary skills to take advantage of the services and resources that are made available (Ternenge and Kashimana, 2019).

Distinguishing the ways of addressing the gap is another skill. A research or literature gap refers to unexplored or underexplored areas with potential for further study (Qureshi, 2023). Identifying research gaps is an essential stage in the research process, as it enables researchers to refine their research questions and concentrate their efforts on areas where more knowledge or understanding is required (Academy, 2023).

Constructi+ng strategies for locating techniques refers to techniques that individuals use to effectively locate and access information from various sources. These strategies involve identifying the type of information needed, selecting appropriate sources, using search terms and keywords, and evaluating the relevance and credibility of information found. Combining the main concepts of one's search query, for instance, can be a search strategy that retrieves accurate results (Hill, 2017).

Organizing, applying, and communicating the information is a practical instrument for structuring independent learning, and this suggests that managing information effectively leads to sustainable results. Such can improve the performance and development of the learner (Rupp, 2022). With the students' capability of organizing and consolidating knowledge, this can increase the likelihood of them understanding the information available and transferring such from working to permanent memory, where students can use it now and the future. Students organize knowledge in various ways, including hierarchical, categorical, sequential, and other methods (Gallagher, 2003).

Synthesizing and creating information increase the generalizability and applicability of the findings and generate new knowledge. Synthesizing and creating information, self-efficacy in information literacy involves having the confidence to gather and organize diverse sources of information, critically evaluate their credibility and relevance, and creatively use them to generate new knowledge, insights, and solutions.

The aforementioned information literacy skills are essential skills for students to master for academic, professional, and personal success (Cooper, 2019). For students to be information

literate, they should have the competence to locate, evaluate, and use information so that they can apply these skills as adults.

The students' research academic skill is a thorough investigation of what is known about a specific topic and a realistic understanding of the research process, which results in a well-planned research strategy. Students conduct research to obtain the "right answers" to a specific academic problem they are investigating. Additionally, according to Ballo et al. (2016), research self-efficacy and research interest also demonstrated a significant positive correlation with knowledge, but deliberate practice of research methodologies was the greatest predictor of research knowledge and skills.

METHODS

The participants of the study were the 81 fourth-year college students of satellite campus of a state university in Misamis Oriental under the program of Bachelor of Science in Information Technology enrolled in the research subject for school year 2022-2023. Concurrent nested mixed-method design was used in this study. A questionnaire was used to gather needed data. Validity of the instruments was ensured through panel review and reliability test using the Cronbach's alpha after the pilot test of the research questions was made. Data were analyzed using frequency, percentage, mean and standard deviation. Also, in testing the hypothesis, regressions were utilized.

RESULTS AND DISCUSSIONS

Participants' Research Academic Skills

Range	Description	Frequency	Percentage
1.0	Outstanding	0.00	0.00
1.5 – 0.99	Very Good	42.00	51.85
2.0 – 1.49	Good	37.00	45.68
2.5 – 1.99	Fair	1.00	1.23
3.0 – 2.49	Poor	1.00	1.23
	Total	**81**	**100**
	Overall Mean	**1.62**	
	Interpretation	**Very Good**	
	SD	**0.23**	

The participants' research academic skills were very good, indicating that they performed well on their capstone research project. Thus, continued high-quality instruction and mentoring may provide students with guidance and assistance to develop their abilities and aid students with their capstone projects (Queiruga-Dios et. al., 2023).

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Participants' Self-Efficacy in Information Literacy Skills

Information Literacy Skills	Mean	Description	Standard Deviation
Recognizing the need for Information	4.09	High	0.64
Distinguishing the ways of addressing the gaps	3.95	High	0.66
Constructing strategies for locating information	3.91	High	0.67
Organizing, Applying, and Communicating Information	3.84	High	0.65
Synthesizing and Creating Information	3.88	High	0.64
Grand Mean	**3.93**	**High**	**0.65**

Legend: 4.51 – 5.00 Very High
3.51 – 4.50 High
2.51 – 3.50 Moderate
1.51 – 2.50 Low
1.0 – 1.50 Very Low

The participants' self-efficacy on information literacy skills in all components were all high (3.93) in terms of recognizing the need for Information; distinguishing the ways of addressing the gaps; constructing strategies for locating; organizing, applying, and communicating; and synthesizing and creating information. It indicates that, high self-efficacy in information literacy skills were more likely to feel confident in their ability to conduct effective research and use information effectively.

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Regression Analysis Showing the Influence of the Participants' Application of Information Literacy Skills on their Research Academic Skills

APPLICATION OF INFORMATION LITERACY SKILLS	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.40	.175		8.02	.000
Recognizing the need for Information	.135	.081	.369	1.66	.101
Distinguishing the ways of addressing the gaps	-.127	.081	-.355	-1.56	.123
Constructing strategies for locating information	.147	.090	.422	1.64	.105
Organizing, applying, and communicating information	.113	.064	.313	1.76	.083
Synthesizing and creating information	-.217	.090	-.591	-2.42*	.018
Model Summary					
R = .372 R^2 = .138 Adjusted R^2 = .081 F = 2.41* p = .044					

Considering the components of the information literacy skills, only synthesizing, and creating information came out as having a negative significant influence on the participants' research academic skills, indicating that for every unit increase in their skills in synthesizing and creating, there is a corresponding .217 increase in their research academic skills (B= -.217, t= 2.42, p = .018). It is understandable that the beta sign is negative since the lower the number, the higher the grade (1.0 is the highest grade).

This finding reveals that synthesizing and creating have high influence on participants' research academic skills. When participants have the ability on synthesizing and creating, they are more likely to engage on research projects. Participants may analyze and interpret information in a meaningful way, identify patterns and relationships, and generate new knowledge.

CONCLUSION

The researcher's assumption that the individual's belief in his capacity to do the research activities has been confirmed. It can be inferred that an individual's confidence in one's information skills is a major factor to produce a good research output. To be an information literate does not only involve possessing information literacy skills but also being competently confident of using such skills when conducting research. This implies that the students were confident with basic and advanced skills of information literacy skills and had implications to their academic performance in terms of research. The students who had high self-efficacy in information literacy skills were

more likely to feel confident in their ability to conduct effective research and use information effectively. This, in turn, contributed to their overall good performance in their research academic skills.

The results of this study confirm Bandura`s Social Learning Theory and Niecolls` Achievement Goal Theory. Bandura's Social Learning Theory proposes individuals who have higher levels of self-efficacy are more motivated to engage in activities such as research. Similarly, Nicholls' Achievement Goal Theory espoused that student who believe they can succeed in conducting research, analyzing data, and drawing conclusions are more motivated to engage in these activities and develop their skills. Also, Krath et al, (2021) surmised that by fostering students' beliefs in their own ability to succeed in these areas, educators can help to promote engagement and success in the development of their research academic skills.

Recommendations

Based on the findings and conclusions generated in the study, the following recommendations are hereby presented for consideration:

1. For School Administration that they may provide institutional support in developing a comprehensive policy that outlines the goals, objectives, and expectations of the information literacy program. The policy may include guidelines in assessing and evaluating students' information literacy skills, and outline strategies for integrating information literacy into the curriculum;
2. For the Librarians that:
   2.1. they may collaborate with teachers in developing the lesson plans and activities to integrate information literacy into the curriculum; and
   2.2. they may provide support to teachers as they implement these activities.
3. For the students to participate in information literacy activities such as research projects, class discussions, and library programs. These activities will help them develop their skills and gain a deeper understanding of the importance of information literacy; and
4. For future researchers that they may use the findings of this research to develop and implement innovative information literacy programs that address the specific needs of the institution.

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