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Identifying information literacy skills of new graduate students

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Abstract

The UIN Syarif Hidayatullah Jakarta Graduate School Library organizes an information literacy program to create new students who are proficient in dealing with academic tasks. Understanding students' initial information literacy skills needs to be considered because it is input for developing information literacy programs that are more oriented toward student needs. This study aimed to identify the initial information literacy skills of new graduate students based on the Big6 Model. The research approach was quantitative with survey methods. A sample of 43 respondents was taken from a total population of 160 people using incidental techniques, namely students who were present in person at the 2022 Odd Semester New Student Orientation. Data was collected using a closed questionnaire with a Likert Scale. Data analysis and interpretation used descriptive statistics. The research results showed that the information literacy skills of new students were 70%, categorized as good. Students were confirmed to have evaluated search results at 74% while seeking strategies, and the use of information was at 68% and 69 (sufficient category). The condition of task definition and synthesis skills was 71%, location and access were 70%, with Google Scholar, Academia, and Moraref as the most frequently referenced sources of digital information; all three aspects were categorized as good. The preparation of search strategies and utilization of information sources is in the sufficient category. Therefore, these two aptitudes are considered to be the focus of academic library information literacy training in the future.

Keywords**:** Information literacy assessment; Big6 Model; Graduate student

Mengenali keterampilan literasi informasi mahasiswa baru pascasarjana

Abstrak

Perpustakaan Sekolah Pascasarjana UIN Syarif Hidayatullah Jakarta menyelenggarakan program literasi informasi untuk menciptakan mahasiswa baru yang mahir ketika dihadapkan dengan tugas-tugas akademik. Memahami keterampilan awal literasi informasi mahasiswa menjadi penting diperhatikan karena merupakan input untuk pengembangan program literasi informasi yang lebih berorientasi kebutuhan mahasiswa. Penelitian ini bertujuan untuk mengidentifikasi keterampilan awal literasi informasi mahasiswa baru pascasarjana berbasis Model Big6. Pendekatan penelitian adalah kuantitatif dengan metode survei. Sampel berjumlah 43 responden diambil dari total populasi 160 menggunakan teknik insidental, yaitu menjadikan mahasiswa yang hadir secara langsung ketika Orientasi Mahasiswa Baru Semester Ganjil 2022. Pengumpulan data melalui kuesioner tertutup dengan Skala Likert. Analisis dan interpretasi data menggunakan statistik deskriptif. Hasil penelitian menunjukkan keterampilan literasi informasi mahasiswa baru adalah 70%, berkategori baik. Mahasiswa terkonfirmasi melakukan evaluasi hasil penelusuran sebesar 74% sedangkan seeking strategies dan the use of information, yaitu 68% dan 69, (kategori cukup). Kondisi keterampilan task definition dan synthesis sebesar 71%, location and access 70% dengan Google Scholar, Academia, dan Moraref sebagai sumber informasi digital paling banyak direferensikan, ketiga aspek dikategorikan baik. Mayoritas mahasiswa sudah memanfaatkan aplikasi manajemen referensi, meliputi menu referensi bawaan Office Word Processor, Footnote, Mendeley dan Zotero. Keterampilan awal literasi informasi mahasiswa baru sekolah pascasarjana secara keseluruhan berkategori baik. Mahasiswa memiliki keunggulan dalam mendefinisikan kebutuhan, menentukan lokasi sumber informasi dan mensintesis. Penyusunan strategi penelusuran dan menggunakan sumber informasi berkategori cukup, sehingga menjadi fokus pelatihan literasi informasi di masa mendatang.

Kata Kunci: Penilaian literasi informasi; Model Big6; Mahasiswa pascasarjana

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INTRODUCTION

Graduate students' perceptions of their level of information literacy competence are vital because they affect their self-confidence and motivation to complete more complex academic tasks (Koler-Povh & Turk, 2020). Student assessment, called self-efficacy, regarding the status of skills in the fields of information, critical thinking, and problem-solving, is an inseparable element of academic skills. Dolničar and Podgornik (2023) show that the correlation of information literacy with self-efficacy is positive; in fact, information literacy is the most effective method for implementing active learning. The transition from undergraduate or gap-year student to graduate student encounters high-stakes pressures and emotions, shaping students' adjustment to a new information environment (Reyes et al., 2018). However, the concept of assessment has not received much attention in the context of information literacy. Studies on self-efficacy and its relationship with information skills have only been conducted in the last few decades, and some of these studies prove the essence of information literacy in the development of self-efficacy (Clark, 2017). Aharony and Gazit (2020) added that self-efficacy in information literacy skills can help the student's academic life and other relevant activities. Measuring information literacy skills is part of students' self-efficacy that is useful individually, namely understanding their ability to adapt to the availability of new sources of information they encounter.

Teaching, learning, and research activities require scientific information to support ideas. The increasingly abundant information, especially in the era of the internet and digitalization, requires special skills to search, filter, criticize and use information in accordance with scientific communication in national and global contexts. Dorvlo (2016) affirms that the abundance of alternative information, including print, electronic, image, spatial, sound, visual and numerical, indicates that the current problem is no longer the absence of information sources but how to assess large amounts of information effectively and efficiently. As academic sources expand, students seeking Islamic information use diverse patterns. Information for educational purposes, primarily via books, scientific journal databases, Google Scholar, and Islamic information to meet non-academic needs, comes from YouTube, Instagram, and websites (Mudawamah et al., 2023).

The consequences are clear: Information literacy sessions should become essential to graduate education, as graduates who attend library teaching sessions have more knowledge (Grigg & Dale, 2017; Magliaro & Munro, 2018). Students should have clear motivation and determine strategies in carrying out information behavior so that it is on target in its implementation, pay attention to details, and have creativity in interacting with information (Wati et al., 2023). In addition, learning independence in academic tasks through individual learning is a characteristic and challenge in the culture of graduate student life which can be realized through improving information skills. Azami and Delkhosh (2018) explain the benefits of information literacy training: understanding information needs, increasing the internet and information databases knowledge, and self-efficacy beliefs.

Understanding new graduate students' existing information literacy skills can be crucial for the various stakeholders involved in the educational experience. Identifying any deficiencies among graduate students is urgent to justify their initial academic journey and ensure adaptation during academic performance, particularly in enriching their papers with reliable sources; students may face information poverty due to technological advances. Consequently, most universities worldwide have improved their electronic databases to address these significant changes (Allari et al., 2022). In an era where multiple forms of information are abundant, those who invest in information must possess the knowledge and skills necessary to find, access, and utilize it efficiently, although the need to seek, assess, and employ information has existed since time immemorial, the competencies required to perform these tasks have become increasingly extensive, intricate, and crucial in the Information and Communication Technology (ICT) landscape (Anunobi & Udem, 2015).

Considering the interdisciplinary and multidisciplinary research curriculum of Graduate School UIN Syarif Hidayatullah Jakarta, students are expected to undergo all learning interventions, especially combining two or more subjects and integrating them with Islamic (or Religion) studies such as Religion and Law, Religion and Medicine, Islam and the Environment, Islam and Anthropology, Islam and Technology, etcetera. In addition, the study can overcome current Islamic issues. This prominent research topic requires strong information literacy qualifications as students must search for relevant literature and academic sources to enrich their basic knowledge of Islamic Studies (non-Islamic Studies for their previous education) and non-Islamic Subjects (for those who have taken full Islamic Studies). The complexity of graduate students often stems from the diversity of their educational, research, and personal backgrounds, and they can be viewed as a specific population with unique needs (Anders, 2021; Clarke, 2022; Kline, 2022).

Graduate or doctoral students possess distinct skill sets, and their entry into these educational endeavors emphasizes the importance of information literacy in equipping them with essential research skills and a comprehensive understanding of the research process (Parramore, 2019). The advanced techniques in brainstorming research ideas, consulting with experts, searching, finding, and filtering sources, justifying credibility and avoiding problematic issues are reflected in one particular skill: information literacy skills. Similarly, a study revealed notable strengths among graduate students in areas such as knowledge of databases, search strategies, accessing sources, and awareness of legal and ethical issues in the information ecosystem; however, they exhibited persistent challenges in defining information needs and understanding the nature and scope of information paradigms (Al-Qallaf, 2020). Consequently, librarians must be involved in noticing information literacy skills among new graduate students as an integrated part of the educational process.

Developing advanced information literacy skills and knowledge in graduate students is a significant concern for academic librarians. Primarily, the findings indicated that graduate students

prioritize independent efforts as the most effective means of learning in utilizing e-resources, with librarians ranking relatively lower in terms of their perceived impact (Motawah et al., 2020). Therefore, librarians can determine students' information literacy level when entering a new lecture atmosphere. This situation is driven by several global trends and dynamics of academic librarianship in the last twenty years, namely the birth of Transforming Libraries for Graduate Students Conference by Kennesaw State University, Academic Library Services for Graduate Students Interest Group by ALA (American Library Association) and Electronic Thesis and Dissertation Association Conference USETDA, begins to lead to the assessment of graduate students as a population (library users) with unique needs influenced by undergraduate status, covering master, doctoral, and professional student (Anders, 2021). Castañeda-Peña et al. (2015) succeeded in classifying user status tendencies in the first year, namely information collectors, information verifiers, and reflexive students.

Through the information literacy program, students are expected to be skilled and independent, namely able to identify information needs and produce extraordinary ideas (Rahmah & Desriyeni, 2018). The survey involved 473 respondents; the results showed that medical students' information literacy has a direct and indirect but positive influence on their creativity. In contrast, the variable implementation of extended life learning does not have a direct influence but has a positive impact on students' creative skills mediated by information literacy (Naveed et al., 2023). For example, it is separated from information skills that are equivalent to the demands of the tasks students encounter. The high expectations of postgraduate (PG) students to produce quality research papers and comprehensive theses addressing identified problems necessitates their active engagement in extensive research (Oni et al., 2023). In that case, graduate students will experience the potential phenomenon of information exhaustion due to excess information. Orientation and instruction related to information literacy are now substantial in line with the increasing abundance of electronic information resources and the significance of using the Internet to access information (El Hassani, 2015). These skills must continue to be studied and developed to harmonize today's generation's information literacy conditions. Librarians from the University of Dar es Salaam, Tanzania, Wema (2021) confirm that many studies are on using virtual learning environments – VLEs for teaching information literacy to universities and colleges.

One of the information literacy models widely used in higher education institutions and companies, the Big 6 Model includes stages: defining tasks, information retrieval strategies, location and access, information use, synthesis, and evaluation (Marlini & Rahmah, 2020). The model, initiated by Mike Eisenberg and Robert B. Berkowitz, presents a set of systematic, logical, comprehensive, and applicative skills used to develop curriculum or problem-solving-based frameworks needed by students in the information age (Kamba & Buba, 2022). Mendoza (2020) augments that the Big6 Model helps students understand the research process, especially when they are in a situation of information overload,

which impacts the effectiveness of their completion time. The survey in this study is part of the literacy program planning recommended by ACRC, namely "Accommodate departmental and institutional level programs" (American Library Association, 2019).

Academics, practitioners, and researchers have carried out several studies on librarianship. Swapna and Biradar (2017) investigate the information literacy skills of Graduate Science students at Kuvempu University and Davanagere University and produce a specific picture of students' information literacy skills through the highest to lowest percentages at each stage. Zhao (2019) examines the information literacy skills of graduate students at the University of Windsor, and his study reveals that graduate students either have a basic understanding of information literacy skills or have yet to meet ACRL standards significantly. Therefore, he suggests that the library should provide programs for graduate students regarding information literacy training, Integration of Information Literacy credits, and collaboration between libraries. Zeeshan et al. (2020) measure the information literacy skills of graduate students of Lahore University of Management Sciences (LUMS), and the findings have become inputs in the management of University administration, policymakers, and the development of university-level information literacy programs in Pakistan. The main point of these three studies is the benefits of information literacy measurement activities to students, providing real input relevant to student needs for future library programs.

This study aimed to identify the information literacy skills of new students at the Graduate School of UIN Syarif Hidayatullah Jakarta, consisting of master and doctoral students of Islamic studies. The selection of study objects for new students was the first initiative of the librarians of the UIN Jakarta Graduate School Research Library to obtain students' actual status in terms of their ability to provide information in the academic space. In previous research findings, respondent specifications needed to be more specific to new students. In addition, the information literacy model in this research used the Big6 Information Literacy Model to assess students' literacy stages. Researchers reused the survey method used in previous research with the consideration of obtaining an accurate and representative picture of perceptions. Consequently, the distribution of student perceptions described quantitatively will make it easier for librarians to determine the weaknesses and strengths that students have in meeting their academic information needs. Eventually, librarians will find it easier to assess the follow-up of information literacy programs.

RESEARCH METHODS

A quantitative research approach was needed to identify new graduate students' information literacy skills as it measured attitudes and opinions from a large population (Verhoef & Casebeer, 1997). This study exposed how students assessed their abilities by scaling on choices given, and the outcomes helped researchers to predict the current statement of new graduate students' information literacy skills. The population of this study included all new students at the Graduate School of UIN Syarif Hidayatullah Jakarta for the Odd Academic Year 2022, totaling 160 people. This study used an incidental sampling

technique to obtain a sample of students who participated in the Library Orientation Program (offline) directly, and resulted in 43 students being selected to take part in the survey (Fauzy, 2019). The data collection instrument used a closed questionnaire developed from 6 (six) stages of the Big6 Information Literacy Model with a Likert-style answer scale (1 to 5). The survey was distributed through Google Forms after the Orientation activity ended. The collected data was then processed statistically and interpreted narratively as analysis.

RESULTS AND DISCUSSION

Based on the distribution of questionnaires covering 12 statements (answers on a scale of 1 to 5) and filled in by 43 respondents (Masters and Doctoral level), a total score of 1,812 was obtained with an ideal score of 2,580. Next, an overview of the information literacy skills of first-year graduate students is depicted through mathematical calculations in Figure 1.

Minimum Index Value = Minimum Score × Number of Statements × Number of Respondents
= 1 × 12 × 43
= 516
Maximum Index Value = Maximum Score × Number of Statements × Number of Respondents
= 5 × 12 × 43
= 2.580
Interval = Maximum Index Value – Minimum Index Value
= 2.580 – 516
= 2.064
Interval Distance = Interval: Tiers
= 2.064: 5
= 412,8
Score Percentage = [(total score) : maximum score] × 100%
= [1.812: 2.580] × 100%
= 70 %

Figure 1. Calculation for information literacy skills
Source: Data processing result, 2023

The same calculation model was carried out at each information literacy Big6 Model stage: task definition, seeking strategy, location and access, information use, synthesis, and evaluation. By adjusting the number of statements for each information literacy skill and the distribution of respondent's answers, the percentage for each skill was obtained as a reflection of students' self-confidence in their ability or knowledge of information retrieval. For comparison, the diagram was equipped with a median and overall average to demonstrate potential information gaps for new students (Figure 3).

Overall, the information literacy skills of the 43 new students at the Graduate School of UIN Syarif Hidayatullah Jakarta were in the "good" category. This was proven by a total score of 1812 from an ideal score of 2580 (70%), and if this value was positioned on the category label (Figure 3), then the value was in the "good" area. The average percentage obtained from each stage was 70%, with a median value of 71%. Next, grouping was carried out into category I, whose percentage was above or equal to the median, and category II, which was below the overall median percentage figure. There were three stages in category

I, namely task definition (71%), synthesis (71%), and evaluation (74%), while in category II were seeking for strategies (68%), location-and-access (70%), and use of information (69%) were in category II. If sorted by the lowest percentage, the order was seeking strategy, information use, location and access, task definition, synthesis, and evaluation. Thus, it could be interpreted that the focus of developing students' information literacy skills in the future would be the seeking strategies, the use of information, as well as location and access.

Task definitions, is the ability of students to define the problem of their information needs. This initial stage introduces students to their capacity to recognize academic tasks in the new graduate school environment. In practice, it involves identifying knowledge (cognition) possessed and predicting the availability of information. An intellectual atmosphere will provide a different experience, as academic culture demands a learning curriculum and learning support resources. Therefore, skill measurement makes it an urgent need to justify students' perceptions of the intellectual tasks they will undertake, including final theses and dissertation projects that require advanced information literacy skills. The results of this measurement are helpful for librarians to adjust the type of academic skills training in the future.

The total score in the task definition category (Table 1), 305 per ideal score of 430, resulted in a percentage score of 71%. The number of statements in this aspect was 2 (two), so the minimum value (N. min) was 86, and the maximum value (N.max)/ideal was 430, obtaining a quarter interval distance of 68.8. Thus, the total score of 305 was in the interval 292.4 – 361.2, categorized as "good." Statistically, this category obtained a total score of 305 out of an ideal score of 430, with a percentage of 71%. Compared with the median value of 71%, the ability to define information needs and identify problems was good. However, this dimension still required a follow-up so that students' confidence in their abilities increased. Basically, identifying needs is an initial stage that affects subsequent processes. When students misdefine their information needs, the tendency to obtain irrelevant sources is inevitable. Therefore, information literacy classes such as brainstorming ideas, topic mapping, gap analysis, analysis of previous research, and advanced levels can utilize the Vos Viewer or Biblioshiny applications, recommended as topics commensurate with the current conditions of new students**.**

Seeking strategies, is a stage where students plan to search for information with results that are accurate and relevant. This activity is confirmed through two statements, namely, students' reliability in using keywords to search for information sources and students' ability to explore with the help of Boolean Logic, Google Syntax, Synonim, and other strategies. Both need to be more credible for obtaining an overview of knowledge and search strategies commonly used by graduate first-year students. The role of the seeking strategy is very significant in supporting students' success in finding sources of information. This phase is like a connecting bridge between the abstract concepts of student needs and the reality of the availability of information around them. This allegory sentence explains that each individual's information needs are exclusive, that is, only known to the individual and sometimes still in the form

of absurd hypotheses that are difficult to translate into the text (keywords). There is a process of compiling keywords, freelance searches, and searches with special techniques, where the search results can realize the knowledge constraints of students. For example, some of the terms in the article's title inspire the following keyword arrangement or represent abstract concepts that previously could not be spoken.

The total score in the Seeking Strategies category (Table 1), 292 per ideal score of 430, resulted in a percentage score of 68%. The number of statements in this aspect was 2 (two), so the minimum value (N. min) was 86, and the maximum value (N. max)/ideal was 430, obtaining a quarter interval distance of 68.8. Thus, a total score of 292 was in the interval 223.6 – 292.4, categorized as "sufficient." At this level, the overall score was 292; out of the ideal score of 430, a percentage of 68% was obtained, which illustrated that the information search skills of first-year graduate students were still below the median and overall average scores. It could be interpreted that the seeking strategy was in the "sufficient" or "fair" category. So, it recommended that librarians received more attention when developing information literacy program curricula. The level of student confidence at the literacy stage, the activity of developing search strategies and the use of special techniques when interacting with search engines on the Internet are foreign objects that have not been recognized in completing academic tasks. This situation is unfortunate, considering the benefits of seeking strategies that can prevent information seekers from searching on the Internet, which is too much (information overload) and potentially triggers physical or mental fatigue. Therefore, further information search workshops are needed to hone Boolean Logic (AND, OR NOT) skills, use Syntax symbols or abbreviations, and understand information retrieval online.

Location and access, describe students' knowledge of the availability of academic information sources on the Internet. This concept is essential because as an academic, carrying out academic assignments must be supported by various sources of information in order to produce objective scientific work. Cognitively, literacy students have extensive knowledge about the availability of information sources subscribed to by their institutions, public facilities from the National Library, and open access information sources, and independently continue to add to the list of information sources as a treasure of academic information sources. Furthermore, individuals familiar with location and access can map information sources on the Internet based on subject coverage, reputation, and access strategies. Especially at the postgraduate level, the number of references used can reach tens or even hundreds. Therefore, knowledge about the availability of academic databases and how to access them becomes an integral part of graduate students' learning and research activities.

The total score in the location and access category (Table 1), 151 per ideal score of 215, resulted in a percentage value of 70%. The number of statements in this aspect was 1 (one), so the minimum value (N. min) was 43, and the maximum value (N.max)/ideal was 172, obtaining a quarter interval distance of 34.4. Thus, a total score of 151 was in the interval 146.2– 180.6, categorized as "good." In statistical

calculations, a location and access percentage of 70% was obtained by comparing 151 per ideal score of 215. This figure was categorized as "good," or students already felt confident. However, this value was still below the median (Figure 3), which indicated that there was still a need for improvement in knowledge regarding the availability of information sources on the Internet; this was confirmed by the browsing habits of first-year graduate students who predominantly relied on open-source type sources as illustrated in the following WorldCloud Generator (Figure 4).

Use of Information, is a phase where information from search results will be used as a scientific reference for graduate students. Obtaining good quality scientific work requires the use of good information as well. In practice, information seekers identify search results through bibliographic data displayed on the portal or source site, including titles, authors/editors, abstracts and keywords, and references**.** The total score in the use of information category (Table 1), 295 per ideal score of 430, resulted in a percentage value of 69%. The number of statements in this aspect was 2 (two), so the minimum value (N. min) was 43, and the maximum value (N. max) / ideal was 172, obtaining a quarter interval distance of 68.8. Thus, a total score of 295 was at intervals of 292.4 – 361.2, categorized as "good." The reverse statement confirmed this skill, "I only read similar research titles and then make them references," and confirmed the habit of using special reading techniques. Understanding this reading technique was essential to avoid undressing information sources because students downloaded documents similar to their written works directly. Ideally, students read the abstracts of journal articles and match abstract keywords with search keywords, reference sources used, and even the author's expertise in the subject he was researching. The score obtained at this stage was 295 out of 430, resulting in a percentage of 69% (below the median) (Figure 3). Students were not so confident when faced with information on the Internet, especially reading techniques that were less familiar among graduate first-year students. Therefore, an information literacy training program is needed regarding the types of reading techniques applicable in the graduate school environment.

Synthesis, is a student activity that combines various sources and organizes them systematically and logically so that new concepts can answer research questions. This activity requires analytical power because the information seeker must align the cited information sources with the expected research (writing) goals or objectives. The success of this synthesis process is indicated by the content of the written work that can be understood by the reader regarding the researcher's problems and objectives. It even becomes positive input for the reader's decision-making. This idealism is essential to note in the context of postgraduate education because it is related to the publication obligations of the institution (Sekolah Pascasarjana UIN Syarif Hidayatullah Jakarta, 2021).

The total score in the synthesis category (Table 1), 610 per ideal score of 860, resulted in a percentage value of 71%. The number of statements in this aspect was 4 (four), so the minimum value (N. min) was 172, and the maximum value (N.max)/ideal was 860, obtaining a quarter interval distance of 137.6. Thus, a

total score of 295 was at intervals of 584.8 – 722.4, categorized as "good." Based on statistical calculations of this aspect, the synthesis skills of graduate first-year students are represented in a total score of 610 out of 810, so a percentage of 71% was obtained or called "good". Conditions also showed that students were confident in their skills in synthesizing various sources of information. Then, other aspects of using reference applications and citation styles were also confirmed. The description of the use of the application can be seen in Figure 5.

Evaluation, is the last activity of the information literacy cycle, which aims to measure the suitability of tracing information sources to their organization. Indeed, this evaluation is not a final and repetitive stage but is a process of justifying the results that determine whether the search is continued or sufficient. Then, this evaluation indirectly occurs at each stage of information literacy; for example, when the "keyword" does not succeed in calling up the relevant document, the student directly corrects the keyword. The glass replacement process is the result of the indirect evaluation.

The total score in the evaluation (overall process) category (Table 1), 159 per ideal score of 215, resulted in a percentage value of 74%. The number of statements in this aspect amounts to 1 (one), so the minimum value (N. min) is 43, and the maximum value (N. max)/ideal was 172, obtaining a quarter interval distance of 34.4. Thus, a total score of 151 was in the interval 146.2 – 180.6, categorized as "good." This evaluation category was a form of evaluation of the overall search process for each stage of information literacy. This evaluation provided an overview of the advantages and disadvantages of the information search process carried out by students so that the subsequent search could avoid the same mistakes. To confirm this skill, students answered one statement and scored 159 out of 215. The percentage result in this category met the figure of 74%, indicating a reasonably good level of confidence. This evaluation capability can be developed by providing an evaluation framework for the information search process, which includes standards for achievements in each information search process**.**

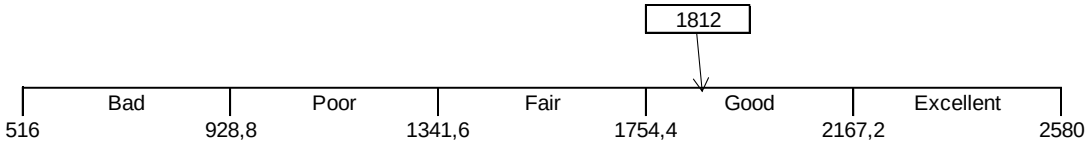

Figure 2. Information Literacy Skills in Category Table
Source: Data processing result, 2023

Figure 2 provides information for qualitative labels related to overall information literacy skills. The same labeling is carried out for each stage of information literacy with adjustments to the minimum value, maximum value, interval range, and total score as a determinant of the position of the category of each stage of information literacy (see Figure 2 as an example). The specific picture of the score at each stage is illustrated in Table 1.

Table 1
The Statistical Calculation of each Stage of Information Literacy (IL)

ILSkills	Total Score	Category	V (value).max	V.min	Interval	Interval Range	Result	Median	Mean
Overall	1812	Good	2580	516	2064	4 12,8	70%	71%	70%
Task definition	305	Good	430	86	344	68,8	71%	71%	70%
Seeking strategies	292	Sufficient	430	86	344	68,8	68%	71%	70%
Location and access	151	Good	215	43	172	344	70%	71%	70%
Use of Information	295	Good	430	86	344	68,8	69%	71%	70%
Synthesis	610	Good	860	172	688	137,6	71%	71%	70%
Evaluation	159	Good	215	43	172	344	74%	71%	70%

Source: Data processing result, 2023

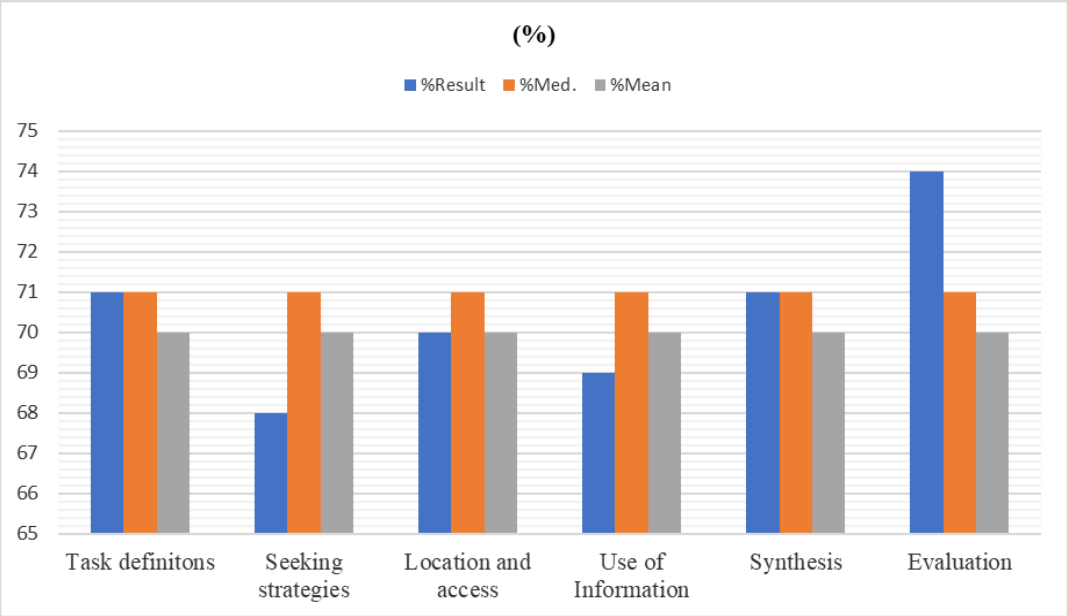

Figure 3. Data Distribution
Source: Research result, 2023

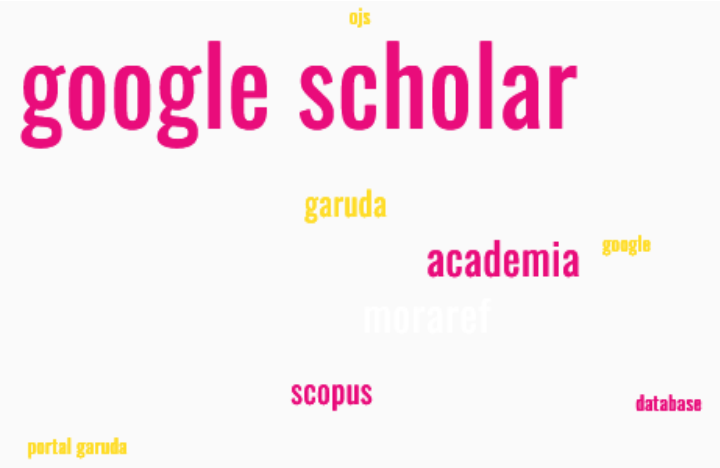

Figure 4. Online Information Preferences
Source: Research result using https://monkeylearn.com/word-cloud, 2023

Figure 4 indicates that Google Scholar contributes the most to graduate student references when gathering information from an internet search. Moraref and Academia are second options for students to get online information. Other sources like Garuda, Scopus, and Google have a lower portion than Google Scholar, predicting less student use.

Figure 5. Reference Manager Preferences
Source: Research result using https://monkeylearn.com/word-cloud, 2023

Figure 5 illustrates the familiarity of graduate students regarding Reference Tools Applications for academic writing. Most students know Mendeley, Footnote, Ms. Office Reference, and Zotero.

CONCLUSION

The information literacy skills of new students at the UIN Jakarta Graduate School are acknowledged as good (qualified) to complete academic tasks in the future. It can be predicted that they will be able to carry out independent learning. Task definition, synthesis, and evaluation skills are advantages students possess while seeking strategies, and location-and-access and access and use of information are the focus of future improvement. This situation highlights the pivotal role of information literacy skills in empowering students for academic success and future endeavors, particularly graduate students who deal with various research assignments and independent learning processes. Students with skilled traits thrive in an information-rich environment and can perform better academically in undergoing interdisciplinary and multidisciplinary

research. There may be a notable correlation between students' self-perceptions of information literacy skills and academic achievement. Greater confidence and proficiency in utilizing information sources can improve educational outcomes. In the following information literacy activities, the material is directed at developing graduate students' skills in developing information search strategies such as Boolean Logic techniques, Google Syntax, and Synonyms, introducing the availability of academic databases and how to access them, understanding the counseling styles, and improving students' academic writing in Writing Scientific Papers. Librarians, academic staff, and the university community can collaborate to develop a literacy curriculum that is relevant to students' needs in completing the types of academic tasks and specified curriculum achievements. The following research should conduct an explanatory study to identify differences between students who engaged with information literacy self-efficacy and those who do not, as well as their relationship to academic success.

REFERENCES

Aharony, N., & Gazit, T. (2020). Students' information literacy self-efficacy: An exploratory study. *Journal of Librarianship and Information Science*, *52*(1), 224–236. https://doi.org/10.1177/0961000618790312

Al-Qallaf, C. L. (2020). Information literacy skills of graduate students: A case of the Master's of Information Studies Program in Kuwait. *Journal of Information & Knowledge Management*, *19*(02), 2050011. https://doi.org/10.1142/S0219649220500112

Allari, R. S., Hamdan, K., Albqoor, M. A., & Shaheen, A. (2022). Information literacy: Assessment of undergraduate and graduate nursing students. *Reference Services Review*, *50*(2), 211–221. https://doi.org/10.1108/RSR-09-2021-0052

American Library Association. (2019). *Characteristics of programs of information literacy that illustrate best practices: A guideline*. https://www.ala.org/acrl/standards/characteristics

Anders, K. C. (2021). Information literacy and instruction: Building a multi-format graduate student information literacy program. *Reference & User Services Quarterly*, *59*(3/4), 156–160. https://doi.org/10.5860/rusq.59.3/4.7712

Anunobi, C., & Udem, O. K. (2015). Information literacy competencies of library and information science postgraduate students in South East Nigeria universities: A focus on the knowledge and skill level. *Information and Knowledge Management*, *5*(2), 20–30. https://www.iiste.org/Journals/index.php/IKM/article/view/19880

Azami, M., & Delkhosh, Y. (2018). The effect of information literacy training on self-efficacy of nursing graduate students of Kerman University of Medical Sciences. *Journal Of Biochemical Technology*, *9*(2), 185–193. https://jbiochemtech.com/article/the-effect-of-information-literacy-training-on-self-efficacy-of-nursing-graduate-students-of-kerman-university-of-medical-sciences

Castañeda-Peña, H., Barbosa-Chacón, J.

W., Marciales, G., & Barreto, I. (2015). Perfiles de la competencia informacional en estudiantes universitarios: Huellas desde un estudio longitudinal. *Universitas Psychologica*, *14*(2), 445–458. https://doi.org/10.11144/Javeriana.upsy14-2.pilh

Clark, M. (2017). Imposed-inquiry information-seeking self-efficacy and performance of college students: A review of the literature. *The Journal of Academic Librarianship*, *43*(5), 417–422. https://doi.org/10.1016/j.acalib.2017.05.001

Clarke, K. (2022). International graduate students' mental health diagnoses, challenges, and support: A descriptive comparison to their non-international graduate student peers. *Journal of International Students*, *13*(3), 280–304. https://doi.org/10.32674/jis.v13i3.3148

Dolničar, D., & Boh Podgornik, B. (2023). Factors influencing information literacy of university students. In L. Waller & S. Kay Waller (Eds.), *Higher Education - Reflections From the Field* (Vol. 4). IntechOpen. https://doi.org/10.5772/intechopen.112126

Dorvlo, S. S. (2016). Information literacy among post graduate students of the University of Ghana. *Library Philosophy and Practice (e-Journal)*, 1392. https://digitalcommons.unl.edu/libphilprac/1392/

El Hassani, A. (2015). The role of information literacy in higher education: An initiative at Al Akhawayn University in Morocco. *Nordic Journal of Information Literacy in Higher Education*, *7*(1), 32–37. https://doi.org/10.15845/noril.v7i1.229

Fauzy, A. (2019). *Metode sampling*. Universitas Terbuka.

Grigg, K. S., & Dale, J. (2017). Assessing and meeting the information literacy needs of incoming transfer students: Implementing ACRL's assessment in action program. *Reference Services Review*, *45*(3), 527–539. https://doi.org/10.1108/RSR-10-2016-0076

Kamba, M. A., & Buba, A. A. (2022). Application of the Big6 Skills Model and information literacy skills of undergraduate students on the use of electronic resources in Nigerian Universities. *Library Philosophy and Practice (e-Journal)*. https://digitalcommons.unl.edu/libphilprac/7274/

Kline, E. (2022). Graduate student intellectual journeys: A functional method to identify library service gaps. *Reference Services Review*, *50*(2), 249–266. https://doi.org/10.1108/RSR-09-2021-0053

Koler-Povh, T., & Turk, Ž. (2020). Information literacy of doctoral students in engineering and the librarian's role. *Journal of Librarianship and Information Science*, *52*(1), 27–39. https://doi.org/10.1177/0961000618767726

Magliaro, J., & Munro, S. (2018). A study of the information literacy needs of social work graduate students at a mid-sized Canadian University. *International Journal of Librarianship*, *3*(2), 3–35. https://doi.org/10.23974/ijol.2018.v

ol3.2.79

Marlini, & Rahmah, E. (2020). Information literacy level of students of Universitas Negeri Padang using the Big 6 Model. *Proceedings of the 1st Progress in Social Science, Humanities and Education Research Symposium (PSSHERS 2019)*. https://doi.org/10.2991/assehr.k.200824.035

Mendoza, J. R. P., Pamatmat, F. V., Daran, A. M., & Pamin, C. D. (2020). Employing Big6 process for the development of information literacy among college students. *International Journal of Scientific & Technology Research*, *9*(3), 901–905. https://www.ijstr.org/final-print/mar2020/Employing-Big6-Process-For-The-Development-Of-Information-Literacy-Among-College-Students.pdf

Motawah, W. Al, Sen, B., & Willett, P. (2020). Information use, information needs, and information behavior of graduate students at Kuwait University. *MELA Notes*, *93*, 51–87. https://www.jstor.org/stable/27028296

Mudawamah, N. S., Winata, A. P., & Sandra, F. (2023). Student information-seeking behavior in meeting Islamic information needs. *Jurnal Kajian Informasi & Perpustakaan*, *11*(1), 13–28. https://doi.org/10.24198/jkip.v11i1.36809

Naveed, M. A., Iqbal, J., Asghar, M. Z., Shaukat, R., & Kishwer, R. (2023). How information literacy influences creative skills among medical students? The mediating role of lifelong learning. *Medical Education Online*, *28*(1). https://doi.org/10.1080/10872981.2023.2176734

Oni, O. A., Ajagu, I. U., Tagwai, A., Madu, B. I., & Iwundu, N. E. (2023). Information literacy skills among postgraduate students of University of Nigeria, Nsukka. *Journal of Applied Information Science and Technology*, *16*(1), 87–100. https://jaistonline.org/16vol1/9.pdf

Parramore, S. (2019). Online active-learning: Information literacy instruction for graduate students. *Reference Services Review*, *47*(4), 476–486. https://doi.org/10.1108/RSR-03-2019-0022

Rahmah, E., & Desriyeni. (2018). The development of information literacy in increasing the quality of higher education learning. *Proceedings of the Sixth International Conference on Languages and Arts (ICLA 2017)*. https://doi.org/10.2991/icla-17.2018.58

Reyes, B. M., Hicks, A., & Maxson, B. K. (2018). Information literacy practices of Spanish-speaking graduate students at the University of Kansas. *Portal: Libraries and the Academy*, *18*(3), 595–615. https://doi.org/10.1353/pla.2018.0035

Sekolah Pascasarjana UIN Syarif Hidayatullah Jakarta. (2021). *Pedoman akademik 2021 – 2024 magister dan doktor edisi revisi*. https://graduate.uinjkt.ac.id/en

Swapna, G., & Biradar, B. S. (2017). Assessment of information literacy skills among science-post graduate students in Universities of Karnataka state: A study. *Library Herald*, *55*(4), 581–604. https://doi.org/10.5958/0976-

2469.2017.00044.6

Verhoef, M. J., & Casebeer, A. L. (1997). Broadening horizons: Integrating quantitative and qualitative research. *Canadian Journal of Infectious Diseases*, *8*(2), 65–66. https://doi.org/10.1155/1997/349145

Wati, M., Safii, M., & Martutik. (2023). Information behavior of cum laude graduates at Universitas Riau in 2020. *Jurnal Kajian Informasi & Perpustakaan*, *11*(1), 93–108. https://doi.org/10.24198/jkip.v11i1.35250

Wema, E. F. (2021). Developing information literacy courses for students through virtual learning environments in Tanzania: Prospects and challenges. *IFLA Journal*, *47*(4), 559–569. https://doi.org/10.1177/0340035221018231

Zeeshan, M., Siddique, N., & Idrees, H. (2020). Measuring information literacy skills of graduate students of Lahore University of Management Sciences (LUMS). *Library Philosophy and Practice (e-Journal)*. https://digitalcommons.unl.edu/libphilprac/4082/

Zhao, S. (2019). *A study of graduate students' information literacy needs in the electronic resource environment* [University of Windsor]. https://scholar.uwindsor.ca/etd/7747/