Information Literacy Analysis on the Preparation of Students' Final Projects

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Abstract. The research focuses on five aspects of information literacy competencies developed by ACRC. The questionnaire consisted of 16 closed questions with a Likert scale to identify student arguments regarding the application of information literacy competencies. Quantitative research methods were used in this study by utilizing the results of questionnaires distributed to final-year students in the Indonesian Language Education Study Program of Universitas Negeri Medan, Universitas Singaperbangsa Karawang, Universitas Majalengka, Universitas Pasundan, and Universitas Muhammadiyah Sorong. Based on 44 respondents, the following results were obtained: (1) indicator 7 obtained a result of 84%; (2) indicators 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 15, and 16 obtained a range of values of 90% - 99%; (3) Indicators 8 and 15 obtained a result of 100%. Thus, based on these data, the majority of respondents have utilized information literacy competence in compiling a final project.

Keywords: Indonesian Language Education Study Program, Information Literacy, Students' Final Project

1 Introduction

Information literacy helps students analyze information to form thinking patterns and finally conclude a thought or attitude that will impact life readiness in the era of revolution 4.0 [1], [2]. Thus, the importance of information literacy is awakened in the lecture process, ultimately impacting a comprehensive academic atmosphere and producing final papers that reflect the pattern of maturity of thinking and attitude of students.

Information literacy fosters systematic thinking patterns that improve critical thinking skills [3]–[5]. This critical thinking will help students identify information following the topic to be studied and avoid students processing information that cannot be accounted for the truth (hoax). Hoax is news that is uncertain or not a fact or a phenomenon [6]. The high utilization of information in all circles eventually led to the dissemination of information that could not be proven, including those carried out by students. Hoax news is one of the obstacles faced because there is still a lot of hoax news spread [7]. Students, as academics, need to be accustomed to processing information that can be proven true because, currently, students unconsciously believe hoax news and participate in spreading it [8]. Even though students are expected to be motors in facing

the advanced digital world civilization [9], students need to be able to process information obtained from mass media and information milling about through digital media.

Digital literacy emphasizes understanding and application in using digital media communication tools to find, evaluate, use, create information, and utilize technology by avoiding elements of plagiarism both in education and work [10], [11], [12], [13]. Using digital literacy allows everyone to contribute to discussing, sharing information, and designing suitable learning methods [14]. In addition, students need to meet media literacy skills. It is related to accessing, analyzing, evaluating, and producing mass media messages, which are indeed related to information [15].

The student's final project (thesis) is carried out to summarize and apply all educational experiences in solving problems in their fields of expertise systematically, logically, critically, and creatively, based on accurate data/information and supported by appropriate analysis to be able to pour it into the form of writing scientific papers [16]. The thesis finally becomes a comprehensive analysis forum by utilizing various appropriate information. In the process, students need to utilize information literacy so that critical and creative thinking patterns can be depicted.

Thesis preparation is inseparable from various obstacles. Obstacles faced by students include (1) difficulty finding research problems, (2) difficulty in completing other courses or other assignments, (3) needing to be more routinely conducting guidance, and (4) difficulty in interpreting information [17]. Based on some of these obstacles, one of the focuses of difficulty is the difficulty of finding phenomena and interpreting information. Possible problem phenomena will be discovered when students can read various information directly and based on literature studies.

Information literacy is one of the skills that students must have. Information literacy is a competency that will assist a person in (1) determining the limits of necessary information, (2) accessing necessary information effectively and efficiently, (3) critically evaluating information and its sources, (4) integrating a selected amount of information into the basis of one's knowledge; (5) use the information effectively to achieve a particular purpose; (6) understand economic, legal, and social issues related to the ethical and legal use of information [18], [19]. Based on these six aspects, students will ideally be equipped with various abilities, such as critical thinking, creative thinking, and the ability to utilize technology [20].

Student final project as an academic vehicle informing the results of findings and studies following topics and problems in the field. The thesis utilizes methodology and requires comprehensive data analysis and discussion (Setiawan, 2023). The thesis contains five parts, namely: (1) introduction; (2) literature review; (3) research methodology; (4) research results and discussions; (5) Concluding chapter. Based on these five parts, students are asked to be able to develop arguments, express thoughts, and find relevant sources that can support arguments that are per the topic of discussion.

2. Method

The study focuses on obtaining information on the use of information literacy competencies in completing student final projects, especially for students in the Indonesian Language (and Literature) Education Study Program. The research subjects are based

on five universities in Indonesia, namely Universitas Negeri Medan, Universitas Sin-gaperbangsa Karawang, Universitas Majalengka, Universitas Pasundan, and Universi-tas Muhammadiyah Sorong. The data collection technique focuses on questionnaire techniques to collect data by preparing questionnaire sheets consisting of 16 closed questions.

The indicators in the questionnaire sheet are based on five literacy competencies in the form of information literacy: (1) knowing relevant keywords; (2) developing these keywords into search engines; (3) utilizing information from search engines by distin-guishing it into primary and secondary sources; (4) utilize various sources of infor-mation, such as journal articles, books, as well as utilize interviews, questionnaires, and social media in seeking information and obtaining information from experts; (5) avoid plagiarism activities by obtaining valid data and quoting based on academic writing rules.

3. Findings and Discussion

Data results based on the utilization of information literacy in writing student final as-signments (thesis) in the Indonesian Language (and Literature) Education Study Pro-gram in this study were obtained from 44 respondents from several universities in In-donesia, namely Universitas Negeri Medan, Universitas Singaperbangsa Karawang Universitas Pasundan, Universitas Majalengka, and Universitas Muhammadiyah So-rong. The initial information regarding the use of information literacy is presented in the 16 questions presented in Table 1.

Table 1. Identification of Questionnaire Results based on Information Literacy As-pects in Student Final Project Writing

Number	Indicators	Never	Infrequently	Sometimes	Often	Always
1	I develop argumen-tation statements and formulate questions based on information needs	7%	5%	11%	57%	20%
2	I dig into common sources of infor-mation to increase familiarity with the topic	5%	2%	2%	48%	43%
3	I identify the value and change of po-tential resources in various formats (multimedia, data-bases, websites, data sets, au-dio/visual, books)	2%	0%	11%	55%	32%

Number	Indicators	Never	Infrequently	Sometimes	Often	Always
4	I distinguish between primary, secondary, and tertiary sources, further understanding how the use and variation of interests differ in disciplines	2%	2%	14%	52%	30%
5	I identify keywords, synonyms and related terms of needed information	4%	0%	16%	48%	32%
6	I implement search strategies across multiple information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters	2%	2%	16%	41%	39%
7	I use various search systems to search for information in various formats (books, journals, audio, video, graphics, images, etc.)	16%	2%	14%	18%	50%
8	I created a system for managing information (naming files, creating groups of folders (timeline / subject)	0%	4%	16%	41%	39%
9	I am familiar with using one of the reference/citation management applications (Mendeley, Zotero, EndNote Basic - Docear, etc.)	2%	9%	32%	32%	25%
10	I analyze information to understand the topic and	5%	0%	7%	45%	43%

Number	Indicators	Never	Infrequently	Sometimes	Often	Always
	come up with the main idea or ideas					
11	I restated the textual concept in my own words and chose accurate data	2%	7%	11%	48%	32%
12	I identify the material verbatim then can appropriately be cited	4%	2%	7%	55%	32%
13	I seek expert opinion through various mechanisms (e.g. interviews, emails, mailinglists)	5%	2%	36%	43%	14%
14	I store all activities / *history* in the process of searching for information including tracking strategies	2%	4%	14%	50%	30%
15	I legally acquire, store, and distribute text, data, images, or sound	0%	4%	14%	50%	32%
16	I avoid infringing actions and indications of plagiarism	9%	0%	14%	34%	43%

Furthermore, Table 2 shows the identification of data regarding the application of information literacy in preparing student final projects (thesis).

Table 2. Comparative Identification of Information Literacy Use by Students

Number	Indicator	Not Applying	Apply
1	I develop argumentation statements and formulate questions based on information needs	7%	93%
2	I dig into common sources of information to increase familiarity with the topic	5%	95%
3	I identify the value and change of potential resources in various formats (multimedia, databases, websites, data sets, audio/visual, books)	2%	98%
4	I distinguish between primary, secondary, and tertiary sources, further understanding how the use and variation of interests differ in disciplines	2%	98%
5	I identify keywords, synonyms and related terms of needed information	4%	96%
6	I implement search strategies across multiple information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters	2%	98%

Num-ber	Indicator	Not Applying	Apply
7	I use various search systems to search for information in various formats (books, journals, audio, video, graphics, images, etc.)	16%	84%
8	I created a system for managing information (naming files, creating groups of folders (timeline / subject)	0%	100%
9	I am familiar with using one of the reference/citation management applications (Mendeley, Zotero, EndNote Basic - Docear, etc.)	2%	98%
10	I analyze information to understand the topic and come up with the main idea or ideas	5%	95%
11	I restated the textual concept in my own words and chose accurate data	2%	98%
12	I identify the material verbatim then can appropriately be cited	4%	96%
13	I seek expert opinion through various mechanisms (e.g. interviews, emails, mailinglists)	5%	95%
14	I store all activities / *history* in the process of searching for information including tracking strategies	2%	98%
15	I legally acquire, store, and distribute text, data, images, or sound	0%	100%
16	I avoid infringing actions and indications of plagiarism	9%	91%

The student has developed the arguments needed in writing the final project (thesis) and formulated several questions to help identify information needs according to the topics required. At the same time, the student explored general information that is relevant to the topic of their final assignment (thesis). It was determined that students utilized a range of pertinent sources during their final assignment and were shown the ability to discern different sources based on their perceived value and influence.

According to the data presented in Table 1 for Indicator 4, the responses of the students were as follows: one student indicated a response of "never," one student indicated a response of "rarely," six students indicated a response of "sometimes," twenty-three students indicated a response of "often," and thirteen students indicated a response of "always." The students have successfully incorporated diverse materials acquired to investigate certain subjects into both the primary and secondary sources during the composition of their final project [18], [20].

Based on the data presented in Table 1 for Indicator 5, the responses of the students were as follows: two students selected the response option "never," no students selected the response option "rarely," seven students selected the response option "sometimes," twenty-one students selected the response option "often," and fourteen students selected the response option "always." According to the data presented in Table 2 for Indicator 5, the percentage of students who submit applications is 96%. The students can recognize relevant keywords, locate synonymous terms, and associate terms pertaining to information that aligns with the topic throughout the composition of their final project.

According to the data presented in Table 1 for Indicator 6, the responses of the students were as follows: one student indicated "never," one student indicated "rarely," seven students indicated "sometimes," eighteen students indicated "often," and seventeen students indicated "always." According to the data presented in Table 2 for Indicator 6, the proportion of students who submit applications is 98%. The students have employed a diverse range of data sources for their research and have effectively aligned

keywords with their information requirements throughout the composition of their final assignment, commonly known as a thesis [2], [4].

Table 1 for Indicator 7 shows the responses of the students as follows: two students selected "never," one student selected "rarely," seven students selected "sometimes," nine students selected "often," and twenty-five students selected "always." According to the data shown in Table 2 for Indicator 7, it can be observed that the proportion of students who submit applications amounts to 84%. The students have utilized diverse resources, including journal articles, books, and videos, during the course of composing their final assignment.

According to the data shown in Table 1 for Indicator 8, it was observed that none of the students responded with "never," two students responded with "rarely," seven students responded with "sometimes," eighteen students responded with "often," and seventeen students responded with "always." According to Table 2, Indicator 8, the entirety of the student population, or 100%, is represented by the number of students who submit their applications. The students have organized their files into different folders to enhance their search process's efficiency. Following the data presented in Table 1 for Indicator 9, the responses of the students were distributed as follows: one student responded with "never," four students responded with "rarely," fourteen students responded with "sometimes," fourteen students responded with "often," and eleven students responded with "always." According to the data presented in Table 2 for Indicator 9, the proportion of students who submit applications is 98%. Around 50% of the students possess proficiency in utilizing citation management tools such as Mendeley or Zotero, while the remaining 50% rely on manual citation and reference writing when composing their final assignments, such as theses. It confirms that the students reach library media to facilitate their final assignment [18].

The data presented in Table 1 for Indicator 10 shows the responses of the students as follows: two students indicated "never," no students indicated "rarely," three students indicated "sometimes," twenty students indicated "often," and nineteen students indicated "always." According to the data presented in Table 2 for Indicator 6, the proportion of students who submit applications is 95%. The students have conducted an analysis of information that has been customized to suit their requirements, aiming to incorporate the central concept or idea into the composition of their final project, commonly known as a thesis.

According to the data presented in Table 1 for Indicator 11, the responses of the students were as follows: one student responded with "never," three students responded with "rarely," five students responded with "sometimes," twenty-one students responded with "often," and fourteen students responded with "always." According to the data presented in Table 2 for Indicator 11, the proportion of students who submit applications is 98%. The students possess the ability to articulate acquired information using their own language, as per the requirements of the final project composition (thesis) [16], [17].

The data presented in Table 1 for Indicator 12 tells the responses of the students were as follows: two students selected the response option "never," one student selected "rarely," three students selected "sometimes," twenty-four students selected "often," and fourteen students selected "always." According to the data presented in Table 2 for Indicator 12, the proportion of students who submit applications is recorded as 96%. The students engage in the analysis of acquired information in order to determine

suitable vocabulary for use in the composition of their final project, commonly referred to as a thesis. According to the data presented in Table 1 for Indicator 13, the responses of the students were as follows: two students indicated "never," one student indicated "rarely," sixteen students indicated "sometimes," nineteen students indicated "often," and five students indicated "always." According to the data presented in Table 2 for Indicator 13, the proportion of students that submit applications is 95%. It is evident that a significant proportion of the respondents have refrained from utilizing alternative methods, such as media-based interviews, to acquire expert opinions [11], [15].

Based on the data presented in Table 1 for Indicator 14, the responses of the students were distributed as follows: one student responded with "never," two students responded with "rarely," seven students responded with "sometimes," twenty-five students responded with "often," and fifteen students responded with "always." According to Table 2, Indicator 14, the proportion of students who submit applications is 98% of the total number of responders. The students have utilized search storage methods to facilitate the retrieval of necessary information during the final project (thesis) writing process.

According to the data presented in Table 1 for Indicator 15, it was observed that none of the students responded with "never," two students responded with "rarely," six students responded with "sometimes," twenty-two students responded with "often," and fourteen students responded with "always." According to the data presented in Table 2 for Indicator 15, the percentage of students that submit applications is 100%. The students made a conscious effort to utilize lawfully obtained data and adequately cite or reference sources to prevent plagiarism throughout the composition of their final work, commonly referred to as a thesis.

The data presented in Table 1 for Indicator 16 performs the responses of the students were as follows: 4 students selected the option "never," no students selected "rarely," 6 students selected "sometimes," 15 students selected "often," and 19 students selected "always." According to Table 2, Indicator 16, the percentage of students who submit applications is 91%. The students made efforts to prevent instances of plagiarism [13], [17].

The findings indicate that 84% of students have successfully utilized the tracking system, encompassing a range of resources, including journal articles, books, and videos, during the final project (thesis) composition process. To access scholarly articles, one can utilize search strategies such as Google Scholar or library repositories. Books continue to be the predominant choice for students when seeking reference materials or primary data. Furthermore, students utilize films on the YouTube platform to access reference materials or secondary data. A minority of students, comprising 16% of the total, exclusively rely on a single search method, emphasizing books as their primary sources.

In addition, a 90% - 99% value range is obtained for indicators 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 15, and 16. This finding demonstrates that most students have utilized information literacy skills to construct arguments, investigate broad subjects, differentiate between primary and secondary sources, identify relevant keywords, articulate comprehension using their own language, and refrain from engaging in actions that contravene academic integrity.

The results for indicators 8 and 15 demonstrate a 100% achievement rate. Therefore, according to the provided data, it can be observed that all participants effectively

organized their material by categorizing it into distinct folders. Additionally, they recognized the importance of sourcing information from reputable legal sources when disseminating written content. Furthermore, they acknowledged the necessity of adhering to established writing guidelines to prevent plagiarism.

4. Conclusion

The study revealed that students have utilized information literacy in completing their final assignment (thesis). The aspects related to the use of information literacy are: (1) knowing relevant keywords; (2) developing these keywords into search engines; (3) taking advantage of information from search engines by differentiating it into primary and secondary sources and providing clear naming, making it easier to retrieve the information on the search page; (4) utilizing various sources of information, such as journal articles, books, etc., as well as utilizing interviews, questionnaires and social media in seeking information and obtaining information from experts; (5) avoiding plagiarism by obtaining valid data and quoting based on academic writing conventions. The following recommendation can be made to add to the student's results related to the utilization of information literacy so that the data obtained can be mutually reinforced.

References

1.   L. Seifi, M. Habibi, and M. Ayati, "The effect of information literacy instruction on lifelong learning readiness," *IFLA J.*, Vol. 46, No. 3, pp. 259–270, 2020, doi: 10.1177/0340035220931879.
2.   H. Hasnadi, "Building Information Literacy Culture in Higher Education," in *Proceedings of SEMDI-UNAYA (UNAYA Multi-disciplinary National Seminar)*, 2019, vol. 3, no. 1, pp. 610–620.
3.   F. Purwaningtyas, "Information Literacy and Media Literacy," *Iqra' J. Perpust. dan Inf.*, vol. 12, no. 2, pp. 1–9, 2018.
4.   S. Melani, "Information literacy in social practice," *IQRA J. Perpust. dan Inf.*, vol. 10, no. 02, pp. 67–82, 2016.
5.   J. E. Bryan, "Critical thinking, information literacy and quality enhancement plans," *Ref. Serv. Rev.*, vol. 42, no. 3, pp. 388–402, 2014, doi: 10.1108/RSR-01-2014-0001.
6.   H. Pratama and W. Amalia, "Building Hoax Resistant Generation at Higher Education Institution," in *Proceedings of the International Joint Conference on Arts and Humanities (IJCAH 2020)*, 2020, pp. 927–933, doi: 10.2991/assehr.k.201201.156.
7.   N. P. S. Meinarni, N. K. N. N. Pande, A. G. Willdahlia, and K. R. Winatha, "Legal Knowledge Development Plan in Responding Student's Understanding on IT Law: 'Pawongan' Approach," *Proc. 3rd Int. Conf. Learn. Innovative. Qual. Educ. (ICLIQE 2019)*, 2020, doi: 10.2991/assehr.k.200129.152.
8.   F. T. Samosir and P. E. Tjahjono, "ANALYSIS OF THE SPREAD OF HOAX INFORMATION ON SOCIAL MEDIA AMONG STUDENTS (Student Study

at the Faculty of FISIP, University of Bengkulu)," *BIBLIOTICS J. Kaji. Perpust. and Inf.*, vol. 4, no. 2, pp. 259–267, 2020.

9.   C. S. D. Kusuma, R. I. Muslikhah, and Suhartanto, "Strengthening of Digital Literacy to Support Student Community Service to Prevent Hoax and Cybercrime," in *Proceedings of the 9th International Conference on Education Research, and Innovation (ICERI 2021)*, 2022, pp. 477–487, doi: 10.2991/978-2-494069-67-1_54.

10. S. Li, S. Zhang, M. Shi, and M. Wang, "Research on the Improvement of Information Technology Teaching Ability and Cultivation of Digital Literacy of Normal University Students under the Perspective of 'Digital Education,'" in *Proceedings of the 2022 5th International Conference on Humanities Education and Social Sciences (ICHESS 2022)*, 2022, pp. 2481–2488, doi: 10.2991/978-2-494069-89-3_285.

11. D. Sunendar, A. K. Seta, and I. Mayuni, *National Literacy Movement Guide*. Jakarta: Ministry of Education and Culture, 2017.

12. R. R. Prathamie, S. Setiadi, and N. Lustyantie, "Family Literacy Movement in Support of Digital Literacy in the Industrial Revolution Era 4.0 (Field Survey on the Scope of Youth Karang Taruna AKREMA Purworejo, Central Java)," in *Strengthening Indonesian as an International Language through Language, Literature, and Culture Diplomacy*, I., Jakarta: CV. Literasi Nusantara Abadi, 2022, p. 99.

13. Y. Wei, "Digital Literacy in Education: From Local to Global," in *Proceedings of the 2022 8th International Conference on Humanities and Social Science Research (ICHSSR 2022)*, 2022, pp. 2726–2729, doi: 10.2991/assehr.k.220504.495.

14. J. Gu, "Development History and Theoretical Basis of Distance Education," in *Proceedings of the 2022 2nd International Conference on Education, Information Management and Service Science (EIMSS 2022)*, 2022, pp. 1024–1033, doi: 10.2991/978-94-6463-024-4_106.

15. M. Sulthan and S. B. Istiyanto, "Social media literacy model for students," *J. Aspikom*, vol. 3, no. 6, pp. 1076–1092, 2019.

16. Sepuluh November Institute of Technology, "FINAL PROJECT: DEFINITION, AND PURPOSE," in *https://www.its.ac.id/*, 2018, p. 1.

17. I. Siswanto and Y. G. Sampurno, "Inhibiting factors for the final thesis of Automotive Engineering Education students of FT UNY," *J. Vocational Park*, vol. 3, no. 1, 2015.

18. D. N. Triwijaya, "The Purpose and Benefits of Information Literacy by Utilizing Library Media," *J. Pustak literacy.*, vol. 4, no. 2, pp. 97–103, 2019.

19. American Library Association, "Framework for Information Literacy for Higher Education," *ala.org*, 2022. https://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/Framework_Companion_Visual_Literacy.pdf.

20. A. A. Mardliyah, "Literacy culture as an effort to improve critical thinking skills in the industrial era of revolution 4.0," in *Proceedings of SNP2M (National Seminar on Research and Community Service) UNIM*, 2019, no. 1, pp. 171–176.

21.   dwi Setiawan, "Differences in Final Project, Thesis, Thesis, and Journal in

College Graduation Requirements: A Complete Guide for Students,"
https://teknik-komputer-d3.stekom.ac.id/,   2023.   https://teknik-komputer-
d3.stekom.ac.id/informasi/baca/Perbedaan-Tugas-Akhir-Skripsi-Tesis-dan-
Jurnal-dalam-Syarat-Kelulusan-Perkuliahan-Panduan-Lengkap-untuk-
Mahasiswa/3389687d338244ece91f9479f3cd2f9b3453a562.