
EXPLORING CHALLENGES IN UTILIZING ENGLISH RESOURCES FOR RESEARCH AND ITS REMEDIES

Fauzanala Farhain*, Yani Lubis, Deasy Yunita Siregar

Universitas Islam Negeri Sumatera Utara, Indonesia

(fauzanalafarhain20@gmail.com)

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ABSTRACT

This qualitative study aimed to investigate students' problems in using English resources as research references at Universitas Islam Negeri (UIN) Sumatera Utara. Data were collected through observations, interviews, and focused group discussions (FGD). The instruments complementing the techniques include observation forms, interviews, and FGD question lists. Furthermore, the study used WhatsApp on a smartphone to record, confirm, and ensure the validity of data about the subjects. The findings showed that English department students at UIN Sumatera Utara had difficulties searching for research resources, understanding texts from international journals, and lacking skills in writing scientific papers. Therefore, intensive writing practices would enhance writing skills, perception, and knowledge of when to pursue assistance. It is recommended that the university establish an academic writing center and offer writing consultation. The center may regularly organize writing workshops to guide searching, using references, and structuring the manuscript.

Key Words: academic writing; problems in English understanding; scientific papers; scientific writing; thesis

ABSTRAK

Penelitian ini bertujuan untuk menginvestigasi permasalahan yang dihadapi oleh mahasiswa dalam menggunakan sumber-sumber berbahasa Inggris sebagai rujukan dalam penulisan karya ilmiah di Universitas Islam Negeri (UIN) Sumatera Utara. Penelitian yang menggunakan pendekatan kualitatif ini menggunakan berbagai teknik pengumpulan data diantaranya observasi, wawancara dan Focus Group Discussion (FGD). Adapun instrumen yang digunakan dalam pengumpulan data adalah form observasi, daftar wawancara, dan daftar pertanyaan FGD. Untuk merekam proses wawancara, peneliti menggunakan Smartphone untuk merekam, mengkonfirmasi, dan memastikan validitas data tentang masalah yang diteliti. Hasil penelitian ini menunjukkan bahwa mahasiswa Pendidikan Bahasa Inggris di UIN Sumatera Utara mengalami kesulitan dalam menelusur sumber-sumber penelitian dan dalam memahami teks dari jurnal internasional, serta kurangnya keterampilan dalam menulis karya ilmiah. Oleh karena itu, praktek penulisan karya ilmiah secara intensif perlu dikembangkan untuk meningkatkan keterampilan menulis, persepsi mahasiswa, dan pengetahuan mahasiswa tentang kapan saatnya mereka membutuhkan bantuan penulisan. Universitas seyogyanya membangun sebuah pusat penulisan akademik dan memberikan konsultasi penulisan. Pusat penulisan akademik ini juga dapat menyelenggarakan workshop secara reguler dengan memberikan bimbingan dalam penelusuran dan pemanfaatan sumber-sumber referensi serta bimbingan penyusunan naskah karya tulis ilmiah.

Kata Kunci: penulisan akademik; permasalahan dalam memahami bahasa Inggris; karya ilmiah; skripsi

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* Corresponding author

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INTRODUCTION

Writing scientific papers is a process that involves many aspects, such as critical thinking, composing ideas into words, and searching for resources. Students' writing for final assignments and research encounter obstacles caused by psychological (Anas, 2021), lingual (Tiwari, 2019), and technological factors (Alamri, 2021). Most students have insufficient skills in expressing and constructing ideas into words, finding supporting resources, and using writing tools (Hamzaoui, 2021). Previous studies examined the difficulties students face when writing for academic purposes and suggested some strategies to overcome these challenges. According to Tremblay-Wragg et al. (2021), undergraduate students feel isolated due to a lack of academic writing ability. Murray and Sharpling (2019) examined the traits of students' academic values in academic writing. The study found some traits of poor academic writing ability, including less favored in comparative judgment, poor introductions, and a tendency to be overly formulaic. Other traits are vagueness of language and ideas, an insufficient sense of audience, the given and new information, limited and imprecise vocabulary, lack of relevance, failure to juxtapose ideas, inappropriate register, and weak

conclusions. In line with this, English is a dominant international scientific language that becomes a pitfall for non-Anglo-speaking students. This requires a code-switching strategy to help students to develop scientific writing in English. In line with this, Archila et al. (2021) assessed a methodical and purposeful code-switching pedagogical strategy in writing academic papers.

Since writing academic papers is a process that necessitates supporting ideas with evidence, students need the capability to search journal articles for their references. However, many factors influence students' use of journal articles. Craig-Duchesne et al. (2018) found that students' use of journals varies considerably. The influencing factors are students' communication skills, preferences, journal structure, frequency of use, and workload. Furthermore, three other factors are related to the social environment. Personal and contextual factors mainly influence students' use of a journal. Studies showed that a reflective approach is desirable to optimize journal use, where students must evaluate sources of information for references. Additionally, journal articles written by more expert authors have credibility and are more comprehensible than less credible sources (Werner da Rosa & Otero, 2018).

Citing references is another issue in academic writing. According to previous studies, most students lack the idea of writing correct citations of references (Kargbo, 2010). The study further suggested the collaboration between faculty and librarian to provide adequate treatment in coping with citation problems when writing scientific papers.

Mckenna & Kyser (2021) stated that students facing problems writing academic papers must participate in writing workshops more often. The study proposed that intensive writing experiences enhance proficiency, raise positive perceptions of writing, and help gain knowledge and make decisions when assistance is needed. Moreover, workshops would provide insight into students' experiences leading to improved pedagogy.

Previous studies give wider perspectives on students' challenges in writing academic papers. Little is investigated about how students experience the challenge of finding and utilizing resources while writing academic papers. This research aimed to fill in the gap in the research that specifically focused on the challenges of finding and using resources when writing academic papers. Therefore, this study aimed to explore the following: (1) What are the problems

students face in using English resources when writing scientific papers at the Department of English Education of Tarbiyah Faculty, Universitas Islam Negeri Sumatera Utara, Indonesia?; (2) How do students solve the problems of using English resources when writing scientific papers at the Department of English Education of Tarbiyah Faculty, Universitas Islam Negeri Sumatera Utara, Indonesia?

Writing is the process of expressing ideas, feelings, and experiences in written form, which requires appropriate knowledge and skills developed through practice. The main reasons for writing are to disseminate information to the public and record the knowledge for a longer period for future studies. A psychological condition, critical thinking, and background knowledge influence writing ability. It is an ideal development activity that begins by researching, observing, and reading the phenomena (Potter, 2006). In higher education, the purposes of students' writing include assessment, learning, and entering particular disciplinary communities (Rabl, 2019, p. 2).

Writing scientific papers requires critical thinking skills, where writers must consider the topic, especially when writing a research paper. A written work must be accountable, and

writers must be responsible for their writing work which requires adopting rules and ethics. One needs honesty, respect for other researchers, and trust in their scientific writing since it must be accountable. Authors are responsible for creating an accurate and genuine publication of the study results. It is also necessary to provide a substantial contribution for readers to assess the publication's credit and responsibility (Stocks, Simcoe, Toroser, & DeTora, 2018).

Scientific writing varies from class essays, school laboratory and research reports, scholarly books, book chapters, peer-reviewed journal articles, and a thesis (Collins & Cook, 2017). A thesis is a compulsory final assignment for finishing higher education studies. This writing is known by many terms, including final assignment, report, scientific papers, thesis, and dissertation, though it is a research report (Jubilee Enterprise, 2020).

The tone in scientific writing is generally formal, objective, and informative (Crosby, DiClemente, & Salazar, 2015). It requires a firm English sentence construction, usage, and punctuation foundation. Writing involves one or multiple cycles, including (1) planning, which encompasses locating and reading source materials, (2) writing a rough

draft; and (3) editing and proofreading. Writers also aim for continuity and a logical flow of ideas supported by evidence, with appropriate source citations (Rashid, 2018). However, difficulties are experienced when using English to communicate scientific findings.

Scientific writing in higher education is an area that should be an integral part of learning. However, the curriculum often ignores academic writing skills, leaving students with minimum knowledge and practice. The rules involved are also less taught to students explicitly, including ethics (Rabl, 2019, p. 3). This condition leads to violating ethics, such as plagiarism by students in their academic writings. However, lecturers always assume that students already have knowledge and skills in academic writing.

Scientific writing requires an understanding of the writing process and the systematic method. It is formal and highly organized, necessitating formulating an argument, writing critically, providing supporting evidence, and developing new ideas (Tian & Low, 2012). Additionally, developing strong writing abilities in the scientific domain not only involves comprehending the writing process and its systematic approach but also entails honing the skill to communicate and

engage readers with intriguing and memorable discoveries effectively, enabling them to convey their findings effectively, engage readers, and foster a deeper understanding and appreciation of their work (Zach, 2022).

Also, scientific writing mainly aims to disseminate new knowledge (Suwarno, 2022) in journals, books, seminars, conferences, discussion forums, and mass media. According to Sayekti (2021), the values in the wide publication of scientific papers include rationality, intelligence, the balance between heart and intellectual insights, and work or technical ability.

Skills are needed to find resources for reference in scientific writing, though they are less taught in classrooms and even universities where students are born with many reports. There is a huge range of help for students as scholars on the Internet, with various manners by which they could be utilized (Bailey, 2003, p. 134). However, the use of information from the Internet necessitates an analysis of the resources. Students need to be critical of the information searched on the Internet. The research combines thinking, searching, reading, evaluating, writing, and revising (Perrin, 2012, p. 1). Critical thinking is the core skill needed in the research process, from determining the subject,

writing the idea, defining the theoretical references, analyzing the data, and drawing conclusions and implications. Therefore, students overcome critical thinking barriers by developing self-leadership skills and improving their electronic learning style (Durnali, 2022).

METHOD

This study employed a qualitative approach and collected data naturally from the participants experiencing problems in writing (Creswell, 2014, p. 185). The author as the key informant in this qualitative study, which collected data from multiple sources that could be used for triangulation to ensure validity. The data included students' experiences, problems in writing a thesis, and coping strategies. This study was conducted inductively from a specific case to a general theory. Findings were then reported descriptively using texts without involving statistical measurements.

Research site and participants

The participants of this study are students enrolled in the English Department, Faculty of Tarbiyah and Teacher Training (FITK), Universitas Islam Negeri Sumatera Utara, Medan. The research participants will primarily consist of students in the final stages of

their academic programs, typically in the process of writing their thesis, at the time of this study. Participants were selected based on their availability and willingness to be involved in the research study, considering factors such as time constraints and other commitments they may have during the thesis writing period. Confidentiality and anonymity will be ensured throughout the research to protect the participants' privacy.

Data collection and analysis

This study was begun through a grand tour of the location to gain perspectives on how students work on their final papers. In this phase, observations were carried out by direct participation in the library and faculty. English students writing a thesis were involved in understanding problems in finding and using references in academic writings.

In order to reach conclusions in qualitative studies, which mainly rely on descriptive data, field notes were recorded during the grand tour. This is due to the fact that a lack of data would lead to erroneous and inaccurate conclusions.

After understanding the nature of students working on a thesis, a formal investigation was conducted using the data collection technique planned

earlier. The data were analyzed before making conclusions and drafting a thesis.

Descriptive data on students' experiences and problems when writing a thesis and the strategy to overcome the difficulties were collected using four techniques, as follows. 1) Participatory observation was conducted by interacting with the participants to obtain rich and accurate data regarding experiences and problems in writing a thesis. 2) Focused group discussion (FGD) was used to collect the data collectively by involving participants in real discussions about their experiences and problems in writing a thesis. This technique was adopted to collect richer data through sharing amongst the participants. 3) The study carried out in-depth interviews with selected participants to understand personal experiences writing a thesis. This technique was employed to obtain the participants' personal feelings while working on their final assignments. Furthermore, in-depth interviews help obtain psychological issues that might not be shared during the FGD. 4) Documentation involved voice or video recording of data collection activities.

Some instruments were developed to facilitate the data collection process.

1) Observation guide was applied to

collect data through the observation technique. The instrument contained questions regarding the study setting, 'students' activities when writing a thesis, behaviors in seeking and using references in their academic writings, and actions in coping with the problems. 2) The study used a digital recorder during the FGD and in-depth interview sessions to anticipate data loss due to a lack of personal memory and disregard. 3) Interview guide was used to collect data on personal experience. The instrument contained a list of questions detailing the problems of this study. 4) Videos and photographs were recorded and taken using a smartphone for documentation purposes. The process of Focused Group Discussion and in-depth interview was conducted using Indonesian (bahasa Indonesia).

Data Analysis

This study further employed Miles & Huberman's (1994) technique in analyzing the data using reduction, display, and conclusion drawing. Figure 1 presents the process of data analysis in brief.

The data acquired and documented during the observation, Focused Group Discussion (FGD), and in-depth interview sessions were transcribed for further analysis and interpretation. The process of data reduction involving

coding using nodes, categorizing, eliminating irrelevant data, and ordering was done utilizing Nvivo 12, as presented in Figure 2.

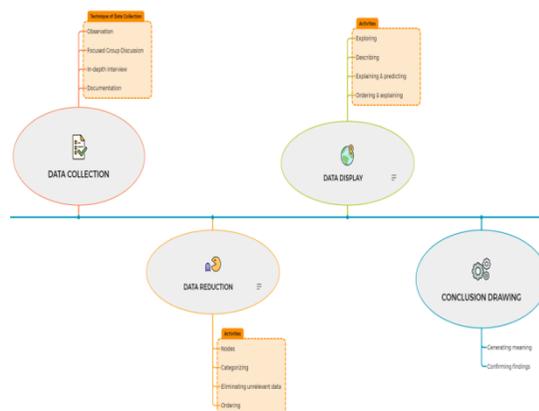


Figure 1. Process of Data Analysis

Name	Files	Referen	Created On	Created	Modified	Modified
Causes	2	6	03/09/2022	RS	03/09/2022	RS
Gender	0	0	20/09/2022	RS	20/09/2022	RS
Learning new tools	2	5	01/09/2022	RS	03/09/2022	RS
Mistakes	1	2	02/09/2022	RS	03/09/2022	RS
Obstacles	2	17	01/09/2022	RS	03/09/2022	RS
Costs	1	3	03/09/2022	RS	03/09/2022	RS
Facilities	1	1	03/09/2022	RS	03/09/2022	RS
Language	2	4	03/09/2022	RS	03/09/2022	RS
Psychology	2	3	03/09/2022	RS	03/09/2022	RS
Skills	1	1	03/09/2022	RS	03/09/2022	RS
Finding reference	1	1	03/09/2022	RS	03/09/2022	RS
Using technology	1	1	03/09/2022	RS	03/09/2022	RS
Writing	1	2	03/09/2022	RS	03/09/2022	RS
Time	2	2	03/09/2022	RS	03/09/2022	RS
Problems in conducting R	1	1	01/09/2022	RS	01/09/2022	RS
Problems in publishing R	1	1	01/09/2022	RS	01/09/2022	RS
Research Methods	1	1	03/09/2022	RS	03/09/2022	RS
Searching strategy	2	5	01/09/2022	RS	03/09/2022	RS
Solution	2	8	01/09/2022	RS	03/09/2022	RS

Figure 2. Process of coding and managing data

FINDINGS AND DISCUSSION

Findings

Challenges encountered by students in the utilization of English resources for writing scientific papers

The study objective was to explore the problems students face in using English resources in writing works and the strategies used to solve the challenges. This section discusses the results based on data obtained from document analysis, observation, FGDs, and interviews.

This study was conducted at the Department of English Education, the Faculty of Tarbiyah and Teacher Training, Universitas Islam Negeri Sumatera Utara, Indonesia. Data were collected from the active students that wrote their thesis as their final education requirement. Seven students, four males and three females, were interviewed collectively in the FGD session, followed by personal in-depth interviews to confirm the findings.

The study first described the Department of English Education and the curriculum offered to identify why students encounter difficulties using English resources when writing academic papers. The analysis showed several challenges that most students have in using English resources.

Therefore, the major problems of the informants could be divided into several cases as follows.

First, the most challenging problem in writing scientific articles is using English resources as references. According to the informants, the English used in the scientific articles is not easy to comprehend because it has many technical terms that make it difficult to understand the content. The informants use the Google Translate application to help understand English articles. However, the result of the translation into the Indonesian language from the English version is inadequate and is different in meaning. The structure of the Indonesian sentences is also grammatically incorrect, making the understanding more complicated. During the Focused Group Discussion session, one of the participants, HAD, stated that:

"The inadequate and improper use of the Indonesian language is one of the factors that hinder the writing of academic papers in English."

He believes that the difficulty in understanding English is due to a bad use of the mother tongue or Indonesian (L1). A student with good skills in using Indonesian is good at translating and understanding English, and vice versa.

This difficulty is also increased by 'students' inability to paraphrase a text to avoid similarity when citing articles. The informants were not taught how to paraphrase an article during their study. Although paraphrasing is essential in writing scientific papers, English department students have not received a special course or training in practising this skill. This indicates that paraphrasing is a barrier in converting the idea from the source to their thesis papers. Students are forced to use the copy-and-paste method to hasten the writing process. Consequently, the similarity of their writing with the source of reference shows a high percentage when checked using the Turnitin application. However, paraphrasing text from the source could be aided by the Quillbot application, which they learned to use from YouTube.

The second barrier to writing scientific papers is a lack of skills, including searching for references and using technology. SH stated that the inability to find scientific articles and books is due to the minimal use of those academic information sources. During the interview session, SH acknowledged that he rarely practices writing scientific papers during his studies.

"I encountered two challenges in writing my academic work. The first challenge is my limited understanding of scientific writings in English that serve as references in my writing. The second challenge is my lack of proficiency in paraphrasing English sentences. In my opinion, the root cause of the first challenge is my infrequent exposure to reading scientific writings in English, including journal articles and books. The cause of the second challenge is my limited experience in writing academic papers."

Therefore, the participant and some other students have no idea where to find scientific articles and what sources are available, especially on the Internet. In this regard, Google has been their primary source of information searching by typing in the keywords of topics. Some students follow their 'lecturer's recommendation to use electronic journals and e-books available on the Internet. Lecturers also encourage the use of Mendeley, Google Scholar, ResearchGate, and Z-Library, as well as YouTube, Instagram, and TikTok. The lack of academic writing skills begins with the inability to find ideas or topics. Not many students easily find a topic to write, especially a thesis. TP stated that defining the topic

is the most difficult part of writing a scientific work.

Furthermore, FH stated that informants make many mistakes in writing a bibliography, a problem caused by ignorance of writing style standards. Although writing a bibliography may forget to mention the source of information leads to ethical breaching in research, FH ignores the rules due to the lack of knowledge. It is maintained that FH has not been taught the rule of thumb for writing references as he stated:

"One common mistake I often make is how I quote other people's opinions, which can come across as plagiarism. I have never been taught how to properly cite and reference sources according to the correct writing standards."

The problem of writing is not merely emphasized in structuring words into sentences and paragraphs but also technical barriers to using Word Processing software. Although students are familiar with Microsoft Word, they still encounter technical problems in maximizing the functions when writing formal reports. HAD and FH acknowledged this fact and FH acknowledged this fact that they must learn from YouTube to utilize the functions.

The third challenge is that students have psychological pressure. HAS and RK stated that students lack self-confidence in finishing the thesis. Time constraint to complete the thesis has created stress because students always keep thinking of the thesis. This situation increased the inability to use appropriate tools when finding references and skills in scientific writing. Students know that a lack of references would make writing a good scientific thesis difficult, which must be based on other articles to be scientific. Furthermore, students face the obligation to follow standards in writing. Other factors adding to the burden are the lack of writing skills, unfamiliarity with using references and avoiding unethical conduct.

The fourth challenge of 'today's academic requirement is the obligation to publish articles in academic journals from the thesis. Despite the cost factor, students do not know the best way to write articles for publication. Furthermore, they have not been exposed to the technical publishing procedure in electronic journals. This challenge was raised by FH and TP, who feel nervous and stressed with current university regulations. According to the two informants, publishing articles in accredited journals is expensive, and fear burdening their parents.

The fifth challenge in conducting research and using English resources is inadequate facilities provided by the university. TP stated that many obstacles were faced when writing thesis, including limited Internet spots on campus. Any Internet identification has a limited or low connection and cannot support downloading articles from the Internet. Therefore, TP expects the university provides a strong and speedy Internet connection.

Problem-solving approaches employed by students in utilizing English resources for scientific paper writing

Students of the Department of English Education of the Faculty of Tarbiyah and Teacher Training still face barriers in using English resources to write scientific papers. This section explains the strategies and tools utilized in helping students write scientific papers.

Students face barriers in searching for English resources to support their ideas from several media. In this case, SH and HUS stated that YouTube, Instagram, and TikTok are the most often used media to learn. SA uses YouTube more often than any other media to learn the best way to search for information online and seek help from more experienced colleagues.

The interview showed that students use some tools to help understand the English resources on the Internet. RK uses several tools, and Google Translate to help write a thesis and translate articles for better content understanding. Quillbot is then used to paraphrase the texts before writing on paper.

After learning from the media about searching for scientific information, students use electronic tools to conduct an actual search, understand, manage, and use the sources in their writings. The digital utilities employed during writing include Google Scholar, ResearchGate, Google translate, Quillbot, and Mendeley. Students use Google scholar and ResearchGate to search for articles published on the Internet. Google Translate is adopted to translate English into Indonesian to understand the information. Furthermore, Quillbot paraphrases the text for a citation using Mendeley, a reference manager tool.

Discussion

The key findings of this research indicate that students face challenges in utilizing English resources as references, lacking skills in searching for references and using technology, experiencing psychological pressure, and fulfilling the obligation to publish

articles in academic journals. An important contributing factor to these challenges is the dominance of the English language in scientific articles, which poses a significant obstacle for non-English speakers. Given the difficulty in comprehending scientific texts written in English, there is an apparent necessity for students to engage in reading and comprehension practices. Although the university curriculum already includes relevant courses such as Intensive Reading, Critical Reading, and Extensive Reading, which provide students with six credits, there are still persistent barriers in understanding scientific English texts. Consequently, this highlights the need to revisit and modify the curriculum of these reading courses, incorporating scientific content into the teaching process.

Integrating science into language learning familiarizes students with English resources and eventually eliminates problems in understanding texts in scientific articles. Lee and Buxton (2013) offered instructional strategies to integrate science and English proficiency in five areas. These include literacy, language support, discourse, home language support, and home culture connection strategies. Furthermore, language barriers must be overcome to maximize access to English resources in writing. Studies show that

language barriers could hinder knowledge processing and impair the sensemaking of scientific content (Tenzer, Pudelko, & Zellmer-Bruhn, 2021). This means that translating and paraphrasing tools such as Google Translate and Quillbot may become solutions but are not always adequate. Therefore, machine translation enters numerable learning and multilanguage communication, empowering academia to extend knowledge (Kelly & Hou, 2021). However, there would always be a gap between the translated and original texts (Flowerdew & Li, 2009). Google Translate is popular tool, but it does not always adequately meet the ethic and emic of the translated (Musk, 2022). Students most often reject the result due to its incorrect translation. Therefore, training is necessary for university students to improve self-confidence and self-efficacy in understanding scientific articles written in English.

The obstacles in searching for English resources mean a lack of information literacy strategy. According to Ekman & Quandt (1999, p. 177), students need five strategies to develop the skills needed to search for resources. First, students could search from the library catalogue. Second, students could explore journal articles as communication media among scientists. Third, students could use

indexes and specialty publications. Fourth, students could go to the library in person and browse the shelves for available sources. Fifth, students may seek advice from colleagues or advisors.

University students are expected to conduct research as part of their learning process, which requires maintaining integrity, trust, fairness, respect, responsibility, and determination (Regulation of the Ministry of Education, Culture, Research and Technology Republic of Indonesia Number 39 Year 2021 about Academic Integrity in Scholarly Communication, 2021). These ethics must be maintained to ensure the acceptable practice of academic research, and breaching may risk the annulment of diplomas for students. Therefore, students must have information literacy skills searching for information from many sources and using it to support the research. Information literacy skills imply the ability to ethically gather, use, manage, synthesize, and create information and data (Bent & Stubbings, 2011).

These skills are necessary because of the massive information growth that might confuse people and complicate retrieval (Septiyantono, 2016, p. 1.17). Therefore, there is a need to teach information literacy skills to university

students (Wegener, 2018). Information literacy skills must be integrated into the curriculum (Hammons, 2020). According to studies, developing information literacy skills in the curriculum is effective for life-long learning (Wallace, Shorten, & Crookes, 2000). The faculty could collaborate with library professionals to team-teach the skills. This is because engaging librarians in teaching information literacy improves research skills (Elmborg, 2006; Lange, Canuel, & Fitzgibbons, 2011). However, critical thinking is the most important information literacy skill (Elmborg, 2006; Goodsett, 2020) because research involves rigorous thinking, including searching for references. Students could use a simple and advanced approach in searching for digital information on an electronic platform (Ulum & Suwondo, 2022). The simple search is conducted when students type keywords in the available box, though it gives general results. Meanwhile, the advanced search option is a more complicated strategy of applying some words using Boolean operators of AND, OR, and NOT. However, most students use the simple search strategy because they lack knowledge about the advanced option.

Using technology tools to overcome difficulties in the writing process indicates that students have

digital literacy skills. As part of the Z generation community, students are exposed to digital devices daily and rapidly learn new software or applications. Their efforts to learn independently from YouTube and other media about tools used in writing scientific papers denote creativity and innovativeness. However, having digital literacy skills does not necessarily mean that students are literate in accessing and using information. Digital literacy entails using skills to navigate networked technologies and interpret the meaning of digital messages (Ala-Mutka, 2011). It also denotes raising awareness of digital technology as an efficient communication tool.

In contrast, information literacy involves searching and critically analyzing content from the Web and using media materials for a specific purpose (Coonan et al., 2018). Furthermore, information literacy entails proficiency in the following seven key areas: identification of relevant information, determination of the scope of inquiry, strategic planning of information search, the effective gathering of pertinent data, critical evaluation of information quality, efficient management of acquired knowledge, and proficient presentation of findings. (Bent & Stubbings, 2011).

Moreover, proficiency in these seven key areas of information literacy is closely linked to students' challenges when writing scientific papers. By developing skills in identifying relevant information, students can overcome the challenge of finding appropriate resources for their research. Defining the scope helps students focus their writing and avoid unnecessary digressions. Planning information search strategies assists students in efficiently locating and accessing the necessary sources for their papers. Information effectively enables students to gather comprehensive and reliable data to support their arguments. Evaluating information allows students to assess the credibility and relevance of sources, ensuring the reliability of their research. Managing information efficiently helps students organize and synthesize the acquired knowledge, facilitating the coherent presentation of their ideas. Finally, presenting information enables students to communicate their findings and arguments to their intended audience effectively. By developing competence in these information literacy pillars, students can address the challenges they face in writing scientific papers and enhance the quality of their research and academic writing.

Previous research shows a need to include information literacy skills in the

curriculum because they support research activities of higher education students. Many universities have integrated Information Literacy into the curriculum, including in the United States, Canada, Scandinavia, Australia, New Zealand, and the Netherlands (Hepworth, 2009, p. 26). However, information literacy in Indonesia remains the domain of the librarian's expertise.

Scientific writing involves structuring words into sentences and paragraphs, which requires time, energy, and intellectual. The finding showed that students experience difficulties starting to write, and many are overwhelmed by the complexity of the process (Collins & Cook, 2017). Therefore, students must start with smaller efforts before allocating the time to write scientific papers. Time constraints in writing a research project such as a thesis could frustrate students and cause idea block. This happens when they do not know what or how to write due to distraction from daily routine activities. Therefore, students must spend some time in isolation when writing research papers (Tremblay-Wragg et al., 2021). Tremblay-Wragg (2021) in his research proposed *Thesez-Vous* model. This non-profit organization offers over three days for graduate students working on a thesis to retreat from their daily

routine and focus more on research. In line with this, Boice (1983) suggested that writing is best accomplished on a regular schedule, regardless of mood. Creative inspiration is more likely to follow than precede productivity in writing.

The demand for converting research into an article for publication is growing. Students are encouraged to publish the findings in scientific journals to communicate with the community. The research becomes an extensive and complete piece, resulting in several designs to publish in journals. These include lab experiment reports, interventional studies, literature reviews, and cost-effectiveness papers (Modesitt et al., 2022). However, the demand for publishing articles is not equipped with training. Students struggle to find ways of constructing manuscripts from their thesis, creating confusion, anxiety, and psychological pressure. Furthermore, students experience frustration when writing a thesis to graduate. Izawa, et.al. (2007) measured five dimensions that cause stresses associated with writing a graduation thesis, including Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor, Fatigue, and Confusion. It suggested that a short period before submitting the thesis is the most stressful time for the students. The episodic stress

associated with writing a graduation thesis might affect the post-awakening cortisol secretion (Izawa et al., 2007). Although this condition is common, there are no efforts to help eliminate stress in writing a thesis. Therefore, students strive to overcome psychological pressures to succeed in their studies.

Three principles must be considered regarding students' strategy to use machine translation, such as Google Translate, in writing scientific papers. First, machine translation should be utilized as a legitimate tool for support. It provides a means for scholarly communication and essential survival needs to participate in learning interactions. Second, intermediate and advanced multilingual learners should be empowered to use machine translation. Third, teachers should work with students to co-construct principles for their responsible use in writing (Kelly & Hou, 2021).

Students need in-service professional development through scientific writing and information literacy skills training. This includes searching for resources for reference and using English texts in their writing. Intensive writing practices enhance writing skills, perception of writing, and knowledge of when to pursue assistance (Mckenna & Kyser, 2021).

Therefore, the Department of English Education must remodify its curriculum and the Scientific Writing course syllabi to include skills such as organizing academic writing, the standards involved, styles, and ethics. Information literacy should be integrated into the education curriculum to familiarize students with searching, evaluating, and using information in English before the actual use in writing.

CONCLUSIONS AND SUGGESTION

University students need to be exposed to information literacy skills to improve their ability to write research and understand scholarly works. University faculties could involve librarians as information specialists to teach the skills. This requires developing a collaboration model between faculty and librarians. Research shows that librarians are professionals who play an important role in training technology and research programs in universities (Biddle, 2021). The explosion of information resources on the Internet may not guarantee easy access by students. Finding and using the resources creates confusion. Therefore, professional assistance is compulsory to train students in information literacy skills to support writing research and other scientific

papers. Mastering information literacy skills will lead students to success in learning at university and in their future lives.

This finding implies that universities need to establish an academic writing center that organizes regular workshops, specifically focusing on academic writing skills. These workshops can guide searching and using resources, structuring a manuscript, developing a coherent argument, and improving academic writing proficiency. By equipping students with essential writing strategies and techniques, these workshops can help alleviate confusion, anxiety, and psychological pressure associated with thesis writing (El-Freihat, 2021). The center can also offer Writing Consultations or tutoring services where students can receive personalized feedback and guidance on their thesis writing process. Experienced writing tutors or faculty members can provide support in areas such as organization, clarity, and academic style, helping students enhance the quality of their manuscripts and reduce stress.

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