CHAPTER I
INTRODUCTION

The present study explores the digital literacy level of English as Foreign Language (EFL) students, the digital platform used while writing scientific articles, and the technology-related problems EFL students face in writing scientific articles. As an introduction, this chapter presents several sections: Background of the Study, Problem Formulation, Research Objective, Significance of the Study, Limitation of the Study, Previous Study, and Novelty of the present Research.

A. Background of the Study

Nowadays, it is globally known that digital literacy is necessary to help people in many aspects of life, such as education, economics, society, and others. Digital literacy is interacting, associating, comprehending, and connecting with digital media[1]. The use of digital media cannot be separated from the digital literacy skill. Therefore, digital literacy is a crucial skill in this modern era that can ease human life.

[1] Rodney H. Jones and Christoph A. Hafner, "Understanding Digital Literacies: A Practical Introduction," *Understanding Digital Literacies: A Practical Introduction*, (March 2012): 2, https://doi.org/10.4324/9780203095317.

The growing use of digital technologies and tools has significantly influenced how EFL students perform writing[2]. While digital tools provide various benefits, such as enhanced access to material and collaborative writing opportunities, they also provide students with hurdles, such as technology-related issues that can impair their ability to write effectively[3].

Today's academic trend shows that writing a scientific article is a prerequisite for graduation in undergraduate, master, and doctoral degrees. Many universities in Indonesia require EFL students to conduct research and present it in article or thesis form using English in the final year to complete a bachelor's or master's degree. This regulation applies to some foreign universities such as Nepal, Kazakhstan, Tanzania, and other countries[45]. It can be concluded that EFL university students cannot avoid writing scientific articles.

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[2] Setiawan and Sari, "Developing Students' Writing and Digital Literacy Using Weblog at Tridinanti University of Palembang," *Global Expert: Jurnal Bahasa Dan Sastra* 7, no. 2 (December 2019): 719, http://ejournal.uigm.ac.id/index.php/GE/article/view/750.

[3] Adnan Omar, Muhammed Miah, and Rachid Belmasrour, "Effects of Technology on Writing," *International Journal of Science and Applied Information Technology*, no. 2 (March 2021):59, http://warse.org/pdfs/2014/ijsait06322014.pdf.

[4] Anas Hajar, Ali Ait, and Si Mhamed, "Exploring Postgraduate Students ' Challenges and Strategy Use While Writing a Master ' s Thesis in an English ‐ Medium University in Kazakhstan," Tertiary Education and Management, no. 1 (June 2021): 1-3, https://doi.org/10.1007/s11233-021-09072-6.

[5] Sotco Claudius Komba, "Challenges of Writing Theses and Dissertations among Postgraduate Students in Tanzanian Higher Learning Institutions," *International Journal of Research Studies in Education* 5, no. 3 (July 2015): 71, https://doi.org/10.5861/ijrse.2015.1280.71

Regarding scientific article writing, students can utilize technology to help them complete their writing in today's era. An investigation found in 2021 revealed that the use of technology in New Orleans, USA, had an unfavorable effect on students' writing. The total result showed that 57% of students revealed the technological effect on writing negatively. However, the result also showed that the unfavorable effect on writing skills is due to the technology user rather than the technology itself.[6] In addition, Strobl et al. conducted a research study investigating the utilization of digital media in academic research. According to their findings, the study suggests that various technological tools are crucial for enhancing academic writing. These tools include formatting devices, spelling and grammar checkers, pagination features, thesauri, synonym finders, outline tools, and index generators[7]. Meanwhile, although the evidence proved that technology negatively affects writing, another case indicates that technology benefits students in research and writing.

Students must have a good digital literacy level in utilizing digital media to support writing scientific articles. To identify students' digital

[6] Omar, Miah, and Belmasrour, "Effects of Technology on Writing," 59.

[7] Carola Strobl, Emilie Ailhaud, Kaliopi Benetos, Ann Devitt, Otto Kruse, Antje Proske, "Digital Support for Academic Writing: A Review of Technologies and Pedagogies," *Computers & Education* 131 (April 2019): 33–48, https://doi.org/10.1016/j.compedu.2018.12.005.

literacy level, they must be tested by Digital Literacy Scale (DLS)[8]. There are some models of DLS which can be applied to identify the level of digital literacy. However, in this study, the researcher uses DLS formulated by Ng[9]. Furthermore, through the DLS test, the level of students' digital literacy will be identified.

Beside identifying EFL students' digital literacy level, the technology-related problems are faced by students. Some problems are inadequacy of the essential technologies and problems adapting to a new learning method[10]. In other words, EFL students also must identify some technology-related problems in writing scientific articles.

B. Problem Identification

Writing scientific articles necessitates a high level of subject matter understanding and the ability to employ various digital tools and technology appropriately. Students lacking digital literacy or technology-related issues may struggle to finish their writing assignments properly and produce lower-quality work. In addition, using digital media to

[8] Banu Inan Karagul, Meral Seker, and Cansu Aykut, "Investigating Students' Digital Literacy Levels during Online Education Due to Covid-19 Pandemic," *Sustainability (Switzerland)* 13, no. 21 (October 2021): 1, https://doi.org/10.3390/su132111878.

[9] Wan Ng, "Can We Teach Digital Natives Digital Literacy?," *Computers and Education* 59, no. 3 (April 2012): 1065, https://doi.org/10.1016/j.compedu.2012.04.016. 1067.

[10] Inan Karagul, Seker, and Aykut, "Investigating Students' Digital Literacy Levels during Online Education Due to Covid-19 Pandemic," 2.

conduct and write research articles is beneficial for students. Students can find references, review the literature, manage the references, and so on[11].

Furthermore, digital literacy is becoming increasingly important for academic and professional success in today's digital world. Addressing this issue is therefore crucial not only for students' immediate academic performance but also for their long-term professional prospects.

Overall, the stated concern is the need to investigate the impact of students' digital literacy levels and technology-related issues on their capacity to produce scientific articles and approaches to solve these challenges to improve their academic and professional performance.

C. Problem Formulation

Considering the relevance and feasibility of this study, the researcher investigates the EFL students' digital literacy levels and technology-related problems faced while writing scientific articles. Thus, this study will attempt to answer the research questions:

1. What are the digital literacy levels of EFL students in the 8th semester at UIN Sultan Maulana Hasanuddin Banten?
2. What are the technology-related problems faced by EFL students in writing research articles?

[11] Yustinus Kalvin Gai Mali, *Simple Technology to Support Research*, ed. Mega Wulandari (Yogyakarta: Sanata Dharma University Press, 2022), 11.

3. What digital platforms are EFL students using to support writing scientific articles?

The research questions help the researcher to get deeper information about the EFL students' digital literacy levels, technology-related problems faced, and digital media used to support writing scientific articles.

D. Research Objective

In parallel with the research questions, this study gives a reach description of the digital literacy levels of EFL students, technology-related problems faced by EFL students, and what they use digital platforms to support writing scientific articles. Therefore, the researcher aims in:

1. Identifying the digital literacy levels of EFL students in the 8th semester in UIN Sultan Maulana Hasanuddin Banten
2. Identifying the technology-related problems faced by EFL students in writing scientific articles
3. Identifying the digital platform EFL students use to support writing scientific articles.

The study's findings will encourage the readers to understand better the digital literacy levels of EFL students, technology-related problems faced by EFL students, and what digital platforms they use to

support writing scientific articles.

E. Problem Limitation

Based on the problem identification, there are many areas in which digital literacy and technology-related problems can be explored in the English Language Teaching (ELT) context. The research then focuses on EFL students' digital literacy and technology-related issues when producing scientific articles. As a result, the problem may not apply to other writing styles or academic subjects. Moreover, the study may have a limited sample size or may not contain a diverse range of students from different backgrounds, which may limit the generalizability of the findings.

F. Significance of the Study

The research on exploring EFL students' digital literacy level and technology-related problems in writing scientific articles can have various potential benefits, including:

1. Enhancing student academic performance: The study can aid in identifying the precise digital literacy abilities required for writing scientific articles and highlight the most common technology-related issues that students confront. This data can be used to create tailored interventions to help students improve their digital literacy abilities

and solve the problems they confront, potentially leading to better academic achievement.

2. More employment opportunities: As previously said, digital literacy skills are increasingly important for workplace success. By addressing the digital literacy skills and technology-related issues that students experience when writing scientific publications, the study may help students develop abilities that will be useful in their future careers.
3. Improving teaching techniques: The research can provide insights into effective teaching practices for assisting students in developing digital literacy abilities and overcoming technology-related challenges when producing scientific publications. These findings can help to shape the development of pedagogical strategies and instructional tools for teaching scientific writing.
4. Advancing research in digital literacy scope: The study can advance research in digital literacy, particularly as it applies to scientific writing. The study's findings can help guide future research in this area, potentially leading to new insights and techniques for dealing with digital literacy issues in scientific writing.

The study can benefit students, educators, and researchers in the academic and workplace contexts.

G. Definition of the Key Terms

There are several key terms involved in this study that need clarification to ensure a consistent understanding among both the researchers and readers. They are:

1. EFL Students: This term refers to English as a Foreign Language (EFL) students, individuals who are non-native English speakers and are learning English as a second language in an environment where English is not the dominant language.
2. Digital Literacy Level: Digital literacy level denotes the competence and proficiency of individuals in using digital technologies, tools, and resources effectively for communication, information retrieval, problem-solving, and overall digital participation in various contexts.
3. Technology-Related Problems: This refers to challenges, obstacles, or difficulties that EFL students encounter when utilizing digital tools, software, or technologies while engaging in the process of writing scientific articles.
4. Writing Scientific Articles: This term encompasses the formal and structured composition of research-based articles in the domain of science, adhering to specific conventions and guidelines, with the purpose of communicating research findings, methodologies, and insights to the academic and scientific community.

H. Previous Study and Novelty of Present Study

A previous study conducted by Liza and Andriyanti[12] used a mixed-method approach to examine the digital literacy scale of EFL students who were enrolled in an English Education program at a university in Yogyakarta, intending to assess their readiness for the use of digital platforms in a teaching and learning context as pre-service teachers. The findings indicated that the EFL students possessed a high level of digital literacy and were well-prepared for using digital platforms in their teaching and learning practices.

Another mixed-method study[13] aimed to investigate the Turkish students' digital literacy level during online learning in the Covid-19 era and the technological problem faced by students. The digital literacy scale used in this study is Bayrakci and Narmanlioglu's model. [14] The findings showed that the respondents had sufficient levels of digital literacy, and the major technological problems they faced were a lack of the appropriate technologies and difficulties in the new learning approach adaptation.

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[12] Khaira Liza and Erna Andriyanti, "Digital Literacy Scale of English Pre-Service Teachers and Their Perceived Readiness toward the Application of Digital Technologies," *Journal of Education and Learning (EduLearn)* 14, no. 1 (February 2020): 74–79, https://doi.org/10.11591/edulearn.v14i1.13925.

[13] Inan Karagul, Seker, and Aykut, "Investigating Students' Digital Literacy Levels during Online Education Due to Covid-19 Pandemic," 2.

[14] Serkan Bayrakci and Haldun Narmanlioğlu, "Digital Literacy As Whole of Digital Competences: Scale Development Study," *Düşünce ve Toplum Sosyal Bilimler Dergisi*, no. 4 (June 2021): 2, www.dusuncevetoplum.org.

Furthermore, another past exploratory analysis study[15] aimed to adapt the digital literacy scale formulated by Ng into a Turkish setting and explore the digital literacy of pre-service science teachers. The results showed that the adapted digital literacy scale was determined to be valid and reliable.

In addition, Strobl et al. conducted a study of the use of digital media in writing scientific papers[16]. It is argued in their research that formatting devices, pagination, spelling and grammar checks, thesauri and synonym finders, search and replace, tracking and commenting capabilities, outline tools, and index generators are some of the technological tools available to authors. Furthermore, in line with the use of digital platform to support writing, a study by Tarihoran, et al[17] revealed that Most of the participants spend six to ten hours daily on Facebook. They strongly believe that using Facebook effectively aids their writing performance as a support tool. Gender and age of the students are the primary factors contributing to these distinctions.

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[15] Mutlu Tahsin Üstündağ, Erhan Güneş, Eralp Bahçivan, "Turkish Adaptation of Digital Literacy Scale and Investigating Pre-Service Science Teachers' Digital Literacy," Journal of Education and Future, (April 2017): 19–29, https://hdl.handle.net/20.500.12513/1728.

[16] Carola Strobl, Emilie Ailhaud, Kaliopi Benetos, Ann Devitt, Otto Kruse, Antje Proske, "Digital Support for Academic Writing: A Review of Technologies and Pedagogies," 33-48.

[17] Nafan Tarihoran, Alaa Q. Alhourani, Yolvi Ocana-Fernandez, Joel Alanya-Beltran, Ronald M. Hernandez "CALLing the Process of Writing : Facebook as Language Support Learning Tool in Enhancing the EFL Learners ' Online Writing Performance.," *Journal of Language and Linguistic Studies* 18, no. 1 (November 2022): 496, https://www.jlls.org/index.php/jlls/article/view/3831/1023.

Although extensive studies have been carried out on the digital literacy scales, technology-related problems, and use of digital platforms to support writing scientific articles, however, no single study exists with the context of examining EFL students' digital literacy scale and technological problems faced them when conducting scientific articles writing in the Indonesian context.

Therefore, the main purposes of this study are to investigate the EFL students' digital literacy scale and the technological problems they face when writing scientific articles and to explore the digital media platforms they use in writing scientific articles. In addition, this study offers some important insights into technology and academic writing trend in this era.

I. Writing Organization

To enhance the comprehensibility of this research, the writer has structured it into five distinct chapters:

Chapter 1: Introduction

The first chapter serves as an introduction to the research, covering several key points, including the background of the study, problem formulation, research objectives and significance, limitations of the study, definition of key terms, and related studies.

Chapter 2: Theoretical Frameworks

In this chapter, the researcher comprehensively reviews the relevant literature on scientific articles, digital literacy, technology-related problems, and digital platforms to support scientific writing.

Chapter 3: Research Methodology

Chapter 3 elaborates on the research methodology employed in the study. It encompasses the research method utilized, the sources of data, the techniques employed for data collection, and the methods used for data analysis.

Chapter 4: Findings and Discussion

This chapter focuses on presenting the findings obtained from the research. Additionally, it provides a detailed discussion and analysis of these findings, allowing for a comprehensive understanding of the results.

Chapter 5: Conclusion

The final chapter presents the study's overall results, summarizing the key findings and drawing conclusions based on the research outcomes. This section also includes appropriate recommendations for further research.

By organizing the research into these five chapters, the writer aims to facilitate the comprehension of the study by providing a clear and logical structure for readers to navigate through the content.