

Digital Literacy in EFL Academic Writing: Students' Perceptions and Practices

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Abstract

Digital literacy has become an essential competence for English as a Foreign Language (EFL) students, particularly in academic writing activities that increasingly rely on digital tools and online resources. This study aims to explore English Department students' perceptions of digital literacy in academic writing at Universitas Qomaruddin. A mixed-methods approach with an explanatory sequential design was employed. Quantitative data were collected through a questionnaire consisting of 42 items distributed across seven digital literacy indicators. Semi-structured interviews were conducted to support and deepen the questionnaire findings as qualitative data. The participants were 47 English Language Education students aged between 19 and 25 years, drawn from three academic intakes (2022, 2023, and 2024). They were selected using purposive sampling, as they had either completed or were currently enrolled in the Academic Writing course. The results indicate that students generally perceive digital literacy as beneficial for supporting academic writing, particularly in idea development, information evaluation, collaboration, and communication with peers and instructors. Although students demonstrated awareness of ethical writing practices, limited practical use of plagiarism-detection tools, and uneven confidence in advanced digital tools were evident.

Keywords: EFL Students; Academic Writing; Students' Perceptions; Digital Literacy; Digital Skills

INTRODUCTION

Writing is a fundamental language skill that plays a crucial role in academic contexts, alongside listening, speaking, and reading (Sari et al., 2024). It is a creative and productive process that involves expressing ideas through written language to achieve various purposes (Dalman, 2022; Khalik, 2021). Through writing, students are expected to organize ideas logically, apply appropriate linguistic features, and communicate meaning effectively, which in turn supports the development of other language skills (Khofifa et al., 2024). However, many EFL students continue to face challenges in academic writing. The challenges often occur in grammatical inaccuracies, limited vocabulary, and difficulties in organizing ideas coherently (Islami & Shofi, 2025). Moreover, traditional instructional approaches that emphasize memorization often fail in developing students' writing competence (Wardani et al., 2025).

In today's digital era, academic writing practices have undergone a significant transformation with the integration of technology. Writing is no longer confined to print-based formats but is increasingly embedded in digital environments that involve multimodal texts, online sources, and interactive platforms (Nabhan, 2021). Consequently, digital literacy has become an essential competence for EFL students, encompassing the ability to access, evaluate, manage, and communicate information ethically and critically through digital technologies (Vuorikari et al., 2022). In higher education, digital literacy has a significant impact on students' academic engagement and knowledge production, particularly in writing-related tasks such as researching, drafting, revising, and publishing academic texts (Aulia et al., 2024; Nabhan &

Habók, 2025). Digital literacy also supports cognitive and ethical competence that underpins effective academic writing for students, including the English Department Students of Universitas Qomaruddin, Gresik.

Therefore, this study is particularly concerned with exploring students' perceptions of digital literacy in academic writing. Perception refers to individuals' viewpoints, beliefs, and attitudes toward a particular phenomenon (Hatisaru et al., 2023; Wardani et al., 2024). In this study, understanding students' perceptions is essential to capture how they interpret, value, and respond to the use of digital literacy in academic writing. Students' beliefs and attitudes toward digital tools may influence their level of engagement, critical awareness, and ethical considerations when producing academic texts.

Some studies highlighted the significant role of digital literacy in enhancing students' academic performance and learning outcomes. Chen (2025) found that digital literacy significantly predicted college students' academic achievement through learning adaptation and online self-regulated learning. Similarly, Yuan et al (2025) reported that digital literacy improved learning outcomes by influencing students' self-efficacy in using digital technologies. In addition, Zakir et al. (2025) emphasized that digital literacy plays a crucial role in shaping educational practices, curriculum design, and learning experiences.

Several previous studies also investigated the relationship between digital literacy and academic writing in EFL contexts. Werdiningsih et al. (2024) found that digital literacy determines how effectively students utilize artificial intelligence tools to improve the quality of their academic writing. Students with higher levels of digital literacy were better able to interpret and apply AI-generated feedback to enhance grammatical accuracy, lexical richness, and coherence. Similarly, Putri et al.(2024) reported that digitally literate students engaged more actively with electronic written feedback and demonstrated greater independence during the revision process. Mukhlis (2024) also revealed that integrating digital literacy into writing instruction contributes to the development of students' critical thinking and organizational skills. Furthermore, Feng and Sumettikoon (2024) emphasized that teachers' digital competence directly influences students' writing development and digital engagement, indicating that digital literacy is a shared responsibility between instructors and learners. Additionally, Hanura et al. ((2025) showed that students' perceptions of AI-powered writing tools are closely related to their digital literacy levels, with more digitally literate students exhibiting greater confidence and autonomy in academic writing.

Although previous studies have provided valuable insights into digital literacy and academic writing, most of them focus on the effectiveness of digital tools, instructional strategies, or teachers' digital competence. Limited attention has been given to exploring students' perceptions of digital literacy within the context of academic writing in Indonesian higher education settings. This study addresses this gap by investigating students' perceptions of digital literacy as both a cognitive and ethical component of EFL academic writing. The novelty of this research lies in its contextualized exploration of students' perceptions that can inform the development of more effective and digitally responsive academic writing instruction. Therefore, this study aims to investigate the perceptions of English Department students at Universitas Qomaruddin toward digital literacy, focusing on how students understand, experience, and utilize digital literacy in their academic writing practices.

METHOD

This study employed a mixed-methods approach with an explanatory sequential design. In this design, quantitative data were collected and analyzed first, followed by qualitative data to explain and deepen the quantitative findings (Creswell & Creswell, 2018). The participants in this study were 47 students from the English Department at Universitas Qomaruddin, selected using purposive sampling, as they had either completed or were currently enrolled in the Academic Writing course. The sample consisted of 6 male and 41 female students, aged between 19 and 25 years, drawn from three different intakes (2022, 2023, and 2024).

The instruments employed in this study were a questionnaire and a semi-structured interview. The questionnaire consisted of 42 items adapted from Nabhan (2021) was organized into seven criteria, as shown in the table below.

Table 1. The Distribution of Questionnaire Items

No	Criteria	Item number
1	Digital literacy to support critical thinking	1 – 5
2	Online safety skills	6 – 10
3	Digital culture	11 – 15
4	Collaboration and creativity	16 – 19
5	Information searching skills	20 – 23
6	Communication skills	24 – 32
7	Functional digital skills	33 – 42

Meanwhile, to support and elaborate on the questionnaire results, semi-structured interviews were conducted to explore students' experiences in using digital tools for academic writing, their perceptions, and the challenges. Combining qualitative and quantitative data enables researchers to improve the validity of educational research (Dörnyei, 2021).

RESULTS AND DISCUSSION

Results

This section presents the study's results, based on data collected from the questionnaire and semi-structured interviews. The questionnaire was administered from November 24 to 26, 2025. Meanwhile, the interview sessions were conducted from December 1 to 3, 2025.

Digital Literacy in Supporting Critical Thinking

This subsection presents the results related to students' digital literacy in supporting critical thinking in EFL academic writing. The results are presented quantitatively through questionnaire data and are supported by qualitative findings from interviews.

Table 2. Students' Perceptions on Digital Literacy in Supporting Critical Thinking

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree
I use credible and trustworthy sources for my academic writing.	61,7%	38,3%	-	-
I can identify which internet sources can serve as references for my writing.	40,4%	55,3%	2,1%	2,1%

I critically examine and assess online information or data to support my academic writing.	27,7%	72,3%	-	-
I can identify and elaborate on ideas related to a specific topic.	14,9%	78,7%	6,4%	-
I can connect materials from various online sources.	23,4%	74,5%	2,1%	-

Overall, the results indicate a highly positive perception among the participants across all statements. Regarding the use of credible sources, 61.7% of the students strongly agreed they use trustworthy sources for their academic writing. Similarly, most students demonstrated confidence in identifying usable information from the internet. In terms of analyzing and evaluating online information, 27.7% strongly agreed, and 72.3% agreed that they analyze and evaluate online data when writing academically. The majority of students also reported positive perceptions regarding their ability to find and develop ideas related to specific topics. Furthermore, 23.4% of students strongly agreed, and 74.5% agreed that they could connect materials from various digital sources.

The interview data further support the questionnaire findings. Students emphasized the importance of selecting credible online sources when developing ideas for academic writing.

“I look for information from truly reliable sources. I do not randomly select references because I want accurate information to help me develop my ideas and determine the next steps in my writing process” (Student 1).

“I obtain references from trusted journals, and I usually use AI to find synonyms when paraphrasing my writing” (Student 2).

Similarly, another student reported relying on trustworthy websites while also using artificial intelligence tools to support idea development.

“The ideas usually come from myself, but I ask AI to help me develop them and find supporting references from trustworthy websites” (Student 3).

Online Safety Skills

The results of the second criterion illustrate how students understand and apply safe, responsible, and ethical practices when using digital platforms and online resources.

Table 3. Students’ Perceptions on Online Safety Skills

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree
I am aware of copyright and ownership of online material.	42,6%	55,3%	2,1%	-
I understand privacy and security when in cyberspace.	29,8%	66%	4,3%	-
I understand what plagiarism is.	38,3%	59,6%	2,1%	-
I cite (author's name) when quoting online references	55,3%	42,6%	2,1%	-
I utilize online plagiarism checkers for my articles before submission or publication	17%	76,6%	6,4%	-

In terms of copyright awareness, almost all students agreed that they showed an understanding of copyright regulations and digital content ownership. Similarly, more than half of the students demonstrated a high level of awareness regarding plagiarism. The majority of students also reported citing authors when using online academic references. Regarding privacy and security in cyberspace, 29.8% strongly agreed, and 66.0% agreed that they understood issues related to online privacy and security. Moreover, the use of online plagiarism-checking tools was reported by most students, with 17.0% strongly agreeing and 76.6% agreeing that they checked their academic writing using plagiarism detection tools before submission or publication. The interview findings further support the results. Students emphasized responsible academic practices, particularly in avoiding plagiarism and ensuring proper use of digital references.

“To avoid plagiarism, I always include the reference sources in my writing”
(Student 4).

“I try to be cautious when using references by paraphrasing so that it does not become a problem for me later” (Student 5).

In addition, a student reported frequent use of plagiarism detection tools.

“I am very familiar with digital tools for checking plagiarism because I always use them when completing academic assignments to avoid problems in the future”
(Student 6).

Digital Culture Awareness

The results of the next criteria describe students’ engagement with digital learning communities, academic social networking platforms, and online academic activities that support their writing development.

Table 4. Students’ Perceptions on Digital Culture Awareness

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
I participate in online learning communities on social media platforms, such as Facebook or Instagram, that focus on academic writing.	5,4%	66%	27,7%	-
I join instant messaging services from learning forums or communities, such as WhatsApp or Telegram groups.	4,3%	61,7%	31,9%	2,1%
I subscribe to YouTube channels that contain academic video content.	6,4%	53,2%	40,4%	-
I have academic or professional social networking accounts, such as ResearchGate or AcademiaEdu, to share knowledge.	8,5%	53,2%	35,2%	2,1%
I follow digital webinars that discuss academic writing topics.	10,6%	68,1%	19,1%	2,1%

Table 4 presents students’ perceptions of digital culture awareness. Regarding engagement with online learning forums or academic communities on social media platforms such as Facebook or Instagram, 71.4% of respondents agreed. Similarly, participation in instant messaging groups related to academic learning was reported by 66.0% of students. In terms of academic digital content consumption, 59.6% of students reported subscribing to academic YouTube channels.

Ownership of academic or professional social networking accounts, such as ResearchGate or AcademiaEdu reported by 61.7% of respondents. Participation in digital academic webinars showed comparatively higher engagement, with 78.7% of students indicating agreement. The interview findings further illustrate students’ digital culture awareness. Several students reported that social media served as a source of ideas for academic writing.

“I often get ideas for writing from social media. When we read a lot of information there, many ideas naturally come to mind” (Student 7).

Other participants reported limited engagement with academic communities, despite having access to the academic platforms, due to a lack of confidence in their academic writing.

“I have logged into ResearchGate to look for journal references, but I have not joined any community because I do not feel qualified yet” (Student 8).

“I want to join so that I can develop my ideas and improve my academic writing, but at the moment I do not think my writing is good enough” (Student 9).

In addition, one participant reported limited prior awareness of academic digital communities on social media but expressed positive perceptions toward joining such communities for networking and knowledge development.

“I just found out that there are academic communities like that on social media. I think it is important for us to join such communities because they can help expand our networking and increase our knowledge.”(Student 10).

Collaboration and Creativity Skills

This criteria explore students’ use of digital tools for collaborative writing, peer feedback, and creative digital production to support academic tasks.

Table 5. Students’ Perceptions on Collaboration and Creativity Skills

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
I work collaboratively with peers on writing tasks through online platforms such as WhatsApp groups, Google Docs, and similar tools.	27,7%	72,3%	-	-
I exchange academic references and offer feedback to peers on particular topics.	14,9%	83%	2,1%	-
I can create works ranging from word processing to digital images for academic purposes.	14,9%	74,5%	10,6%	-
I can operate video editors and create digital videos related to my writing assignments.	21,3%	66%	12,8%	-

The results presented in Table 5 indicate positive perceptions of students’ ability to collaborate and create academic content using digital platforms. Regarding online collaboration, a total of 27.7% of students strongly agreed, and 72.3% agreed that they collaborate with peers on writing assignments through Google Docs, WhatsApp group, or other digital platforms. Similarly, 14.9% of students strongly agreed and 83% agreed that they share references and give feedback to peers on specific topics. In terms of creative digital production, the majority of students demonstrated confidence in producing various types of academic content. Furthermore, students’ ability to operate video-editing tools and produce digital videos related to writing assignments was also positively perceived, with 21.3% strongly agreeing and 66% agreeing.

The interview findings further illustrate how students apply digital tools for collaboration and creative idea development in academic writing. Students reported actively exchanging references and providing peer feedback through collaborative platforms.

“We usually exchange references and discuss our peers’ writing by providing feedback through Google Docs” (Student 11).

“We usually read each other’s writing and ask for feedback from friends through WhatsApp” (Student 12).

In terms of creativity, students also reported using artificial intelligence tools to support idea exploration and development.

“I use AI to explore ideas. I ask AI to help me generate an outline to inspire my writing” (Student 13).

These responses indicate that digital tools not only facilitate collaboration but also support students’ creative processes in developing academic writing.

Information Searching Skills

This criterion presents students’ perceptions, examining their abilities to locate, access, and utilize relevant digital information sources, including search engines, online dictionaries, electronic books, and open-access academic journals.

Table 6. Students’ Perceptions on Information Searching Skills

Statement	Strongly agree	Agree	Disagree	Strongly disagree
I can use Google with appropriate keywords to find the references I need.	17%	78.7%	4,3%	-
I use online dictionaries to check vocabulary in my academic work.	27,7%	68,1%	4,3%	-
I know several websites or links to free e-books, such as pdfdrive.com.	17%	68,1%	14,8%	-
I am capable of locating credible open-access journals through online sources.	12,8%	74,5%	12,8%	-

Table 6 displays students’ perceptions of their information searching skills. Regarding the use of search engines, a substantial majority of students (95.7%) reported that they can utilize appropriate keywords in Google to discover the references they need. In terms of vocabulary support, 27.7% of students strongly agreed, and 68.1% agreed that they utilize online dictionaries in their academic writing. Moreover, 85.1% of students expressed agreement that they know websites providing free e-books. Similarly, most students (87.3%) perceived themselves as being capable in exploring online open-access journals.

The questionnaire findings are supported by qualitative data from the interviews, which provide further insight into how students search for academic information. Several students emphasized the importance of extensive reading from reliable sources when developing their writing.

“I need to read a lot of information related to my writing topic from journals and websites.” (Student 14).

“I search for articles whose titles are related to my own research topic from reliable sources such as Google Scholar” (Student 15).

These responses indicate that students are aware of the importance of source relevance and credibility when searching for academic information in digital environments.

Digital Communication Skills

This criteria presents students' perceptions of digital literacy in relation to digital communication skills that support EFL academic writing.

Table 7. Students' Perceptions on Digital Communication Skills

Statement	Strongly agree	Agree	Disagree	Strongly disagree
I can use social networking sites (Facebook, Instagram, LinkedIn).	27,7%	68,1%	4,3%	-
I can use instant messaging services (WhatsApp, Telegram).	38,3%	61,7%	-	-
I am able to use video or audio conferencing platforms, including Zoom and Google Meet.	40,4%	57,4%	2,1%	-
I am able to utilize video-sharing or live-streaming platforms, such as YouTube.	27,7%	63,8%	8,5%	-
I am able to access and use blogs, vlogs, or personal websites as digital resources.	14,9%	70,2%	14,9%	-
I can effectively utilize email platforms to support academic activities.	23,4%	72,3%	4,3%	-
I am able to design and create online surveys using Google Forms.	19,1%	68,1%	12,8%	-
I am able to design and create online surveys using Google Forms.	23,4%	74,5%	2,1%	-
I understand how to apply polite and appropriate expressions in written communication on online platforms.	31,9%	68,1%	-	-

Table 7 summarizes students' perceptions of their digital communication skills. Regarding social networking sites such as Facebook, Instagram, and LinkedIn, 27.7% of students strongly agreed and 68.1% agreed that they could use these platforms effectively. Students' competence in using instant messaging services was particularly strong, as all participants reported that they could use platforms such as WhatsApp and Telegram. Similarly, most students demonstrated confidence in using video or audio conferencing services, with 40.4% strongly agreeing and 57.4% agreeing that they could use platforms such as Zoom or Google Meet. In terms of content-sharing platforms, 91.5% of students reported positive perceptions of their ability to use video-sharing or live-streaming platforms such as YouTube. The ability to use blogs, vlogs, or personal websites showed comparatively lower levels of agreement, with 14.9% strongly agreeing and 70.2% agreeing. Regarding formal communication tools, the majority of students (95.7%) reported positive perceptions of their ability to use email services such as Gmail or Yahoo. Additionally, most students indicated familiarity with academic digital tools, as 23.4% strongly agreed and 74.5% agreed that they knew how to use Google Scholar. Similarly, 87.2% of students reported being able to create Google Forms for online surveys, although 12.8% expressed disagreement. Finally, all students reported positive perceptions regarding their ability to use polite expressions in written communication on online platforms, with 31.9% strongly agreeing and 68.1% agreeing.

The interview findings further elaborate on how students use digital communication tools in academic writing contexts and reveal variations in their communication preferences.

“I usually communicate my writing with my academic supervisor and ask for feedback through Google Docs.” (Student 16).

However, other students expressed reservations about relying solely on digital communication.

“I prefer to discuss my writing face-to-face with my lecturer because when I communicate digitally, I often do not fully understand the feedback provided” (Student 17)

“I communicate my writing with my academic supervisor both online and offline. However, online communication is less effective because I cannot freely ask for more detailed feedback. Therefore, I still prefer to discuss my writing face-to-face” (Student 18)

These findings suggest that while students are technically capable of using digital communication tools, the effectiveness of digital academic communication may depend on the clarity of feedback and students’ comfort with online interaction, with face-to-face communication still playing an important role in academic writing supervision.

Functional Digital Skills

This criteria presents students’ perceptions of digital literacy in relation to functional digital skills that support EFL academic writing.

Table 8. Students’ Perceptions on Functional Digital Skill

Statement	Strongly agree	Agree	Disagree	Strongly disagree
I can operate Microsoft Word.	42,6%	57,4%	-	-
I can utilize Microsoft Excel.	19,1%	70,2%	10,6%	-
I can utilize Microsoft PowerPoint to create presentation.	34%	61,7%	4,3%	-
I can utilize online learning management system such as Moodle, Padlet, Edmodo. Google Classroom, etc	34%	66%	-	-
I am able to share documents using Google Docs.	27,7%	61,7%	10,6%	-
I can edit and publish my work in digital formats such as PDF or video.	23,4%	63,8%	10,6%	-
I utilize online grammar-checking tools, including both free and paid versions.	21,3%	66%	10,65	2,1%
I use free online platforms to paraphrase and summarize texts.	38,3%	57,4%	4,3%	-
I utilize like Mendeley or Zotero as reference management software	34%	61,7%	4,3%	-

Table 8 summarizes students’ perceptions of their functional digital skills. All students reported positive perceptions regarding their ability to use word processing applications such as Microsoft Word. Similarly, students showed high levels of confidence in using presentation software, such as Microsoft PowerPoint. Students’ ability to use online learning management systems was also rated positively, with all participants agreeing that they could use platforms such as Google Classroom or Canvas. In terms of collaborative document sharing, 89.4% of students reported their ability to use Google Docs. The results also reveal students’ engagement with more advanced digital writing support tools, such as online grammar checkers, with 21.3% strongly agreeing and 66% agreeing. Similarly, a high percentage of students indicated using

free websites for paraphrasing and summarizing text. Regarding reference management software, the majority of students (95.7%) reported being able to use tools such as Mendeley or Zotero. Moreover, most students (89.3%) reported positive perceptions of their ability to use applications such as Microsoft Excel.

The interview data further illustrate students' varying levels of confidence in using functional digital tools for academic writing.

"I feel very confident using digital tools in the writing process because they help improve the quality of my writing." (Student 19)

"I am not yet very confident in using digital tools to support my academic writing because I do not have much knowledge about these tools. Therefore, I think seminars on the use of AI for academic writing are needed." (Student 20)

These contrasting responses indicate that while many students actively and confidently utilize digital tools, some students still require additional guidance and training to integrate digital technologies into their academic writing practices effectively.

Discussion

This study reveals that English Department students at Universitas Qomaruddin generally hold positive perceptions towards digital literacy in academic writing. These perceptions are shaped by students' educational needs and their frequent engagement with digital tools, as evidenced by both questionnaire and interview findings. The discussion below interprets these findings in relation to relevant theories and previous studies, highlighting how digital literacy supports academic writing while also revealing areas that require further pedagogical attention.

Overall, the results indicate that students demonstrate a strong understanding of the significance of digital literacy in academic writing. The results also show that students perceive digital tools as beneficial for enhancing critical thinking in academic writing. With regard to digital ethics and online safety skills, students demonstrated positive perceptions of copyright awareness, citation practices, and plagiarism avoidance. These findings indicate a basic understanding of ethical academic writing in digital environments. However, interview data suggest that while students are aware of the plagiarism conceptually, not all of them consistently apply digital verification tools such as plagiarism checkers. This gap between ethical awareness and practical implementation is consistent with Collins et al. (2021), who reported that students may understand plagiarism in theory but lack sufficient experience or instruction in using plagiarism-detection tools. Thus, ethical digital literacy among students remains uneven and requires further instructional reinforcement.

Collaboration and creativity emerged as another important dimension of students' digital literacy. These findings support Lee's (2018) concept of collaborative digital literacy, which emphasizes the cognitive and technical benefits of cooperation in digital environments. However, students' engagement with digital culture remains largely informal, as interview data indicate greater participation in general social media content than in formal academic communities or professional networks. This suggests that students may require encouragement and scaffolding to actively participate in scholarly digital spaces.

Finally, students expressed a strong need for structured instruction in digital literacy, particularly in academic writing, plagiarism detection, and responsible AI use. This perception aligns with Cote (2018) assertion that explicit digital literacy instruction integrated into language learning programs significantly enhances students' academic performance. Students' requests for workshops and training sessions highlight the importance of institutional support

in strengthening digital literacy competencies and promoting ethical and effective use of digital tools in academic writing.

CONCLUSION

This study confirms that digital literacy plays a significant role in supporting EFL academic writing among English Department students at Universitas Qomaruddin. The results revealed that students generally possess positive perceptions of their digital literacy skills across multiple dimensions. These results address the research problem by showing that digital literacy is perceived as an essential component of academic writing practices in digital learning environments. The analysis further confirms that students are able to utilize digital tools to evaluate information, develop ideas, collaborate with peers, and communicate in academic contexts. However, the findings also reveal that not all dimensions of digital literacy are equally developed. Limited engagement with formal academic online communities, varying confidence in using advanced digital tools, and inconsistent application of ethical digital practices indicate that students still face challenges in fully integrating digital literacy into their academic writing processes. Addressing these challenges is essential to ensure that digital tools are used not only efficiently but also critically and ethically in academic writing contexts. Therefore, this research contribute to the growing body of research on digital literacy in EFL contexts by highlighting students' perspectives as a key consideration in designing effective academic writing instruction.

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