

Students' voices on academic writing in higher education: Needs, preferences, and digital integration

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Abstract

Academic writing is a crucial skill for students in higher education; however, it remains a significant challenge, particularly in English as a Foreign Language (EFL) contexts. Limited research has foregrounded students' voices regarding their academic writing needs, learning preferences, and the role of digital tools in supporting their writing development. Addressing this gap, the present study aims to explore students' perceptions of their academic writing needs, investigate their preferred ways of learning academic writing, and examine their perceptions of the role of digital tools in facilitating and supporting their writing processes. This study employed a descriptive qualitative design to investigate students' experiences and perceptions of academic writing. Data were collected through a survey involving 82 university students and in-depth interviews with six selected participants. The collected data were analyzed using thematic analysis. The findings show that students struggle with writing coherent paragraphs and structuring arguments. To overcome these challenges, they prefer a combination of structured scaffolding and digital collaborative learning. Regarding digital tools, research databases and writing platforms were the most commonly used, with Google Scholar used for reference searching and Grammarly for writing support. Moreover, students preferred interactive media, particularly educational videos, digital mind-mapping tools, and interactive quizzes. These findings suggest that integrating structured instruction, collaboration, and interactive digital tools can improve students' engagement and academic writing skills.



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INTRODUCTION

Academic writing is an essential requirement for university students, particularly in Indonesia, where writing and publishing scientific articles have become prerequisites

for obtaining academic degrees. The mandate for academic publication was specified in Circular Letter No. 152/E/T/2012 issued by the Director General of Higher Education, which emphasizes the need for bachelor's, master's, and doctoral students to publish their research as part of graduation requirements. This emphasis on publication is reinforced by policies such as Permenristekdikti No. 20 of 2017, through which the Indonesian government encourages universities to improve both the quantity and quality of scientific publications. These policies aim to strengthen research productivity, contribute to global knowledge, and enhance Indonesia's academic reputation. In addition, academics in Indonesian higher education are required to conduct research and publish their findings in national and international journals, as these outputs are often used to measure institutional quality and academic reputation (Putri et al., 2023; Limbong et al., 2022).

However, although academic writing is important, it remains challenging for many students. Many students encounter practical difficulties when writing research articles, especially in English. Lee and Tajino (2008) stated that students tend to perceive academic writing as difficult. This may be due to cultural differences, different meanings attached to writing activities, and difficulties in achieving the expected level of proficiency within academic discourse communities (Sağlamel & Kayaoğlu, 2015). Moreover, students perceive writing coherent paragraphs, summarizing and paraphrasing, applying appropriate lexical phrases, and using proper academic language and vocabulary as some of the most difficult areas in academic writing (Kotamjani et al., 2018). Bacha (2000) also emphasized that academic writing is challenging because it involves cognitive skill development, various writing tasks, and difficulties related to cohesion and coherence in multilingual contexts. These challenges are often exacerbated by traditional teaching approaches that fail to engage students or adequately support their skill development (Nugrahini & Rakhmawati, 2022). Therefore, innovative teaching approaches are needed not only to engage students but also to support the development of their academic writing skills. This indicates that instructional models commonly used in higher education have not always effectively addressed the challenges students face.

Several studies have explored challenges and pedagogical approaches related to academic writing in Indonesian higher education. Bram and Angelina (2022) investigated the difficulties faced by tertiary education students in academic writing and proposed solutions to overcome them. Their study, which surveyed 26 students from Sanata Dharma University, revealed common setbacks related to parts of speech, tenses, vocabulary, cohesion, and referencing. They suggested that lecturers should be equipped with various writing strategies, while students should strengthen their organizational skills, critical thinking, and referencing abilities. Similarly, Aunurrahman et al. (2016) examined students' perceptions of an academic writing class at a private university in Pontianak, West Kalimantan. Their qualitative study, which involved interviews with six students, found that the genre-based approach, explicit teaching, and group work contributed to students' writing development. However, several

limitations were also identified, and suggestions for improving academic writing classes were provided. Expanding on this issue, Aunurrahman et al. (2017) investigated the academic writing competencies of first-year tertiary EFL students, particularly in relation to critical thinking. Their study analyzed students' argumentative writing using functional grammar based on systemic functional linguistics. The findings revealed that students across different proficiency levels struggled with the schematic structure and linguistic features of academic writing and demonstrated limited critical thinking capacity. The study suggested that explicit teaching and cooperative learning activities should be incorporated to enhance students' academic writing and critical thinking skills.

Furthermore, Lesmana and Ariffin (2020) examined the difficulties faced by Indonesian EFL postgraduate students in writing scholarly articles in English. The study highlighted the requirement issued by the Indonesian Directorate General of Institutional Science, Technology, and Higher Education for university graduates to publish at least one scholarly article in English before graduation. The research identified various challenges, including cognitive, linguistic, psychological, and external factors affecting students' writing processes. In addition, the findings emphasized the need for institutional, pedagogical, and social support to assist students in producing high-quality academic writing. Similarly, Kusmanto et al. (2024) analyzed academic writing courses in higher education institutions in Surakarta, Central Java. Using a qualitative descriptive method, they examined teaching materials, semester learning plans, and assessment tools. Their findings underscored the diversity of learning and assessment methods, including project-based learning and portfolio assessment. They proposed integrating indigenous wisdom into academic writing instruction to promote character development among students.

Students' difficulties in writing, particularly in academic contexts, have led researchers to explore alternative approaches that support L2 writing development. Faridah et al. (2018) explored the academic writing needs of Indonesian EFL undergraduate students. Through questionnaires and focus group interviews, they found that 61% of students faced difficulties in general writing skills and language-related problems. The study suggested that academic writing courses should include structured guidance on writing research articles and provide access to e-database resources for academic references. Similarly, Mukminin et al. (2015) investigated the experiences of Indonesian student teachers in academic writing socialization within a teacher-training program at a public university in Jambi. Using a qualitative approach and the theoretical framework of cultural capital, they identified five key challenges: lack of writing cultural background, the need for prolonged exposure and internalization, insufficient academic writing socialization, inadequate institutional support, and limited lecturer assistance due to hierarchical power distance. These studies underscore the need for stronger academic writing support to address students' challenges effectively.

To respond to these difficulties, researchers have explored innovative approaches to improve L2 writing instruction. One such approach is Digital Multimodal Composing (DMC), which integrates multiple modes of communication, including text, images, audio, and video, to enhance writing instruction. Since the beginning of the 21st century, digital multimodal writing has gained increasing attention, and its potential for developing L2 writing skills has been identified (Bloch, 2007; Kern & Schultz, 2005; Warschauer, 2009). DMC projects may include various forms of composition, such as web pages, blogs, wikis, podcasts, videos, video games, infographics, posters, and brochures. Several examples from second language writing contexts can be found in studies by Castañeda (2012), Cimasko and Shin (2017), Hafner and Miller (2011, 2019), Shin and Cimasko (2008), and Yang (2012). These studies provide empirical evidence that DMC fosters creativity and enhances learners' engagement in writing.

Research has consistently highlighted the high level of learner engagement during multimodal writing activities, attributing this motivation to factors such as digital platforms (Warschauer, 1996), learner autonomy, the authenticity of writing tasks, and the personal significance of texts (Jiang & Luk, 2016). Kim et al. (2023) showed that DMC tasks led to longer texts and greater writing improvement than traditional writing tasks. Their study highlighted the benefits of integrating DMC into L2 writing instruction to enhance students' performance. Similarly, Xu (2021) investigated the impact of DMC on Chinese EFL learners' writing performance through a quasi-experimental study. In a university EFL course, 66 students in the experimental group completed three multimodal projects, while 30 students in the control group completed traditional writing tasks. Pre-test and post-test results indicated that the experimental group showed significant improvements in text length, mean length per T-unit, task fulfillment, content, and comprehensibility. The study emphasized the effectiveness of DMC in enhancing L2 writing skills. These findings highlight the potential of multimodal composition in fostering L2 writing skills across different contexts and emphasize the importance of using multiple measures and tasks to evaluate writing development. Moreover, the authentic communicative contexts created by DMC can enhance students' motivation and autonomy in learning (Hafner, 2014; Hafner & Miller, 2011; Jiang & Luk, 2016). Given its potential, DMC is considered to play an important role in L2 writing instruction (Early et al., 2015; Hafner, 2013).

While these studies provide valuable insights into students' challenges, teaching methods, and innovative pedagogical approaches in academic writing, limited research has specifically examined students' voices regarding their difficulties, their need for guidance, their learning preferences, and the role of digital tools in supporting their writing development. Addressing this gap, the present study explores students' perceptions of their academic writing needs, investigates their preferred ways of learning academic writing, and examines their perceptions of the role of digital tools in supporting their academic writing processes.

Accordingly, this study addresses the following research questions:

1. What are students' perceptions of their academic writing needs?

2. What learning preferences do students report in learning academic writing?
3. How do students perceive the role of digital tools in facilitating their academic writing processes?

METHOD

This study employed a descriptive qualitative design to explore students' voices regarding their academic writing difficulties, learning preferences, and the role of digital tools in supporting their writing development. A qualitative method was chosen to capture students' perspectives and experiences in academic writing instruction within an authentic higher education context (Creswell & Poth, 2018). This approach allowed for an in-depth examination of the challenges students encountered, their preferred learning methods, and how digital tools facilitated their writing processes.

The study was conducted at a private university in West Java, Indonesia, involving 82 seventh-semester students enrolled in academic writing courses. These students were selected to provide insights into their difficulties in academic writing, including selecting research topics, conducting literature reviews, and structuring arguments, particularly in relation to methodology and data collection stages.

To address the research objectives, two research instruments were employed to capture students' perspectives on academic writing needs, learning preferences, and the role of digital tools in supporting their writing development. The first instrument was a questionnaire designed to explore students' perceptions of their academic writing needs, learning preferences, and the role of digital tools in supporting their writing processes. The questionnaire enabled the researcher to capture a broad overview of students' voices and identify dominant patterns across a larger group of participants (Dörnyei & Taguchi, 2010).

The second instrument was a semi-structured interview guide developed to further investigate and elaborate on the findings obtained from the questionnaire. The interviews focused on gaining deeper insights into students' academic writing challenges, their preferences for instructional approaches and learning activities, and their experiences in using digital tools during the writing process. By allowing participants to explain their experiences in detail, the semi-structured interviews supported the study's objective of foregrounding students' voices and provided richer qualitative data to complement the survey results (Creswell & Poth, 2018).

Data collection was conducted in two stages. First, the questionnaire was administered to university students to gather data on their academic writing challenges, learning preferences, and use of digital tools. Following the questionnaire phase, semi-structured interviews were conducted to obtain qualitative insights that complemented and elaborated on the survey findings. Six students voluntarily participated in the interview phase. To ensure anonymity and maintain ethical research practices, pseudonyms were used for all interview participants, namely Rizal, Fauzi, Zidan, Madhu, Putri, and Setya. The interviews enabled the researcher to gain deeper insights into

students' personal experiences and perspectives related to academic writing and digital learning practices.

RESULT AND DISCUSSION

Result

The findings of this study provide valuable insights into students' perspectives on their academic writing needs, learning preferences, and the role of digital tools in supporting their writing development. Understanding these aspects is crucial for designing instructional approaches that align with students' expectations and enhance their writing proficiency. The data collected from students' voices reveal diverse experiences, particularly the challenges they encounter, their preferred ways of learning, and the ways digital tools facilitate their writing processes. The following sections elaborate on these key aspects, beginning with students' perceptions of their academic writing needs, followed by their learning preferences, and concluding with the role of digital tools in academic writing.

1. Students' Perceptions of Academic Writing Needs

1.1 Students' Need for Guidance in Academic Writing

Support and guidance play a crucial role in helping students navigate the challenges of academic writing. Access to feedback, instructional resources, and mentoring can significantly influence their confidence and writing development. However, students may have different perceptions of whether the support they receive is sufficient. Understanding their views can help educators identify areas for improvement in academic writing instruction. Table 1 presents data on students' perspectives regarding the adequacy of support and guidance in writing academic papers.

Table 1. Students' Perceptions of Support and Guidance in Academic Writing

Do you feel that you have enough support and guidance in writing academic papers?	Percentage
Yes	74.4
No	25.6

The data revealed that, among 82 respondents, 74.1% believed that they received sufficient guidance, while 28.4% felt that they lacked adequate support in writing academic papers. This finding indicates that although most students perceived the guidance they received as sufficient, a considerable proportion of students still experienced difficulties in academic writing. In addition, the data revealed several areas in which students encountered difficulties. Table 2 presents the aspects of academic writing in which students felt they needed more guidance.

Table 2. Students' Need for Guidance in Different Aspects of Academic Writing

Which areas of academic writing do you feel you need more guidance on?	Percentage
Research question development	18.5 %
Structuring the paper	37.9 %
Writing coherent paragraphs	48.1 %
Citation and referencing	25.5 %

Further analysis of specific areas where students require more assistance shows that the most challenging aspect is writing coherent paragraphs (48.1%), followed by structuring the paper (37.9%). This suggests that many students struggle with organizing their ideas logically and maintaining coherence in their writing. As stated by Kotamjani et., al., (2018) that students perceived greater difficulty in writing coherent paragraph, summarizing and paraphrasing, applying appropriate lexical phrases, utilizing proper academic language and vocabulary respectively as the most difficult areas in writing. These findings are further supported by interview data, which highlight students' experiences in academic writing. One of the students said:

"I usually struggle with having my ideas flow logically in a paragraph. At times, I feel as if my sentences are not closely linked, and I'm not sure how to fix it."

(Fauzi- Interview)

The other student identified difficulties in arranging their paper:

"The hardest part for me is writing the introduction. Though I understand the broad format, I'm not sure how to connect these paragraphs to the major body of my paper effectively."

(Madhu- Interview)

Additionally, citation and referencing (25.5%) remain areas where students need guidance, indicating difficulties in adhering to academic citation standards.

These problems are supported by evidence from interviews. One interviewee complained about the citation requirement:

"I find it difficult to differentiate between paraphrasing and quoting. Sometimes, I am unsure if I need to cite a source or if I have changed the wording enough to make it my own."

(Putri- Interview)

Another student noted challenges with citation tools:

"I have tried using Mendeley, but I still struggle with formatting my references correctly, especially when switching between citation styles like APA and MLA."

(Setya- Interview)

Based on the finding above, it can be inferred that incorporating training on citation managers such as Zotero and Mendeley could help students manage references more effectively and reduce citation errors. Interestingly, research question development is the least challenging area, with only 18.5% of students needing guidance, suggesting that students have a relatively stronger grasp of formulating research questions but still face difficulties in later writing stages. These findings highlight the need for academic writing programs to focus on developing students' skills in structuring their papers, ensuring paragraph coherence, and mastering proper citation techniques.

2. Students' Distinctive Preferences in Learning Academic Writing

2.1 Students' Preferences for Instructional Approaches in Academic Writing

Effective academic writing instruction can be delivered through various approaches, each catering to different learning preferences and needs. Some students benefit from collaborative learning, where peer discussions and group work help them refine their ideas, while others prefer structured, lecture-based instruction with direct guidance from instructors. Additionally, independent study and online learning provide flexible alternatives for self-paced learning. Understanding students' preferences for instructional approaches can help educators design more effective academic writing programs. The table below presents data on students preferred instructional methods for academic writing.

Table 3. Students' preferences for instructional approaches

What types of instructional approach do you prefer for academic writing?	Percentage
Lecture based (teacher centered)	38.8 %
Collaborative learning (group work)	62.2 %

The data presents students' preferences for instructional approaches in academic writing. Collaborative learning (group work) is the most favored approach, chosen by 62.2% of students, compared to lecture-based (teacher-centered) instruction, which is preferred by 38.8%. This preference suggests that many students value peer interaction, discussion, and collective problem-solving in the writing process.

Interview responses also highlight the reasons students enjoy collaborative learning. One of them said:

"When I do group work, I feel more confident since we can share ideas and proofread each other's work. My classmates sometimes point out mistakes that I had not seen."
(Zidan- Interview)

One student noted the benefit of peer feedback:

"Discussing about my writing with my classmates allow me to see alternative points of view and organize my ideas before I turn it in." (Rizal- Interview)

However, some students still prefer lecture-based instruction, particularly for complex topics. As one student noted:

"I like working in groups, but I often need brief explanations from the lecturer beforehand so that I know where to begin writing. Otherwise, I get stuck."
(Putri- Interview)

2.2 Students' Perceptions of Effective Teaching Methods in Academic Writing

Effective academic writing instruction involves a variety of teaching methods, each catering to different learning preferences. Some students benefit from structured, step-by-step guidance, while others find collaborative or problem-based learning approaches more engaging. Understanding students' perceptions of the most effective teaching

methods can help educators design more impactful academic writing courses. The table below presents data on students' preferred teaching methods for academic writing.

Table 4. Students' Perceptions of Effective Teaching Methods

Which teaching method do you find most effective for learning academic writing?	Percentage
Step by step guidance and examples	39.4 %
Problem based learning	24.4%
Collaborative project and group work	26.6%

Based on responses from 82 participants, step-by-step guidance and examples emerged as the most preferred teaching method for academic writing, selected by 32 respondents (39.4%). This preference indicates that students benefit from explicit instruction that breaks down the writing process into manageable stages.

This finding is supported by the data from interview. One student explained:

"When I'm taught writing step-by-step with good examples, I can do it a lot better since I understand how it is done. If not provided with examples, I would not know whether I'm doing it correctly."
(Zidan- Interview)

In addition, collaborative projects and group work also received significant preference, with 22 respondents (26.6%) selecting this method. This finding is supported by the interview data, as stated by one of the students.

"When I write alone, sometimes I am stuck and don't know what to write. But when I work in a group, I can discuss my ideas, and my classmates help me see other aspects."
(Rizal- Interview)

Another participant noted the value of working together as follows:

"Team work motivates me more since it allows space for dividing tasks and allow me to learn from each other's strong points. I gain innovative ideas for my own essay through observing other students' organizational plans in their essays."
(Setya- Interview)

Meanwhile, problem-based learning was chosen by 20 respondents (24.4%), indicating that some students prefer tackling real-world writing problems as a means to improve their skills. One student said:

"I like problem-solving activities where we are given a writing problem to solve. It leads me to think critically about structure, coherence, and grammar instead of writing blindly without self-analysis."
(Zidan- Interview)

Similarly, another student emphasized the role of technology in enhancing their learning experience:

"Using digital tools in problem-based learning helps me brainstorm and organize my ideas better. When working on writing challenges, I use AI-powered grammar checkers and online collaborative platforms to refine my drafts. It makes the process more engaging and efficient."

(Putri – Interview)

2.3 Students' Preferences for Learning Activities in Academic Writing

Academic writing involves various learning activities that can enhance students' understanding and skills. Some students benefit from traditional methods like lectures and note-taking, while others prefer interactive approaches such as digital tools, group discussions, or peer feedback. The effectiveness of these activities often depends on individual learning styles and the level of support provided during the writing process. Understanding students' preferences can help educators design more engaging and effective academic writing instruction. The table below presents data on students' preferred learning activities in academic writing.

Tabel 5. Students' Preferences for Learning Activities

What type of learning activities do you find most helpful?	Percentage
Group discussions and peer feedback	34.6%
Individual writing exercises	22.2%
Interactive digital tools	43.2%

The data reveals students' preferences regarding the most helpful learning activities for academic writing. The majority of students favor Interactive digital tools (43.2%). Interview responses also reveal why students enjoy interactive digital tools. One student stated:

"Utilizing apps and AI-based feedback software makes me aware of my mistakes instantly. It is much more helpful than feedback from teachers."

(Putri- Interview)

Another student pointed out the motivational factor associated with technology tools:

"I learn more if I can interact with interactive spaces that have videos and images instead of reading lots of texts. It is more enjoyable to study academic writing."

(Fauzi- Interview)

Additionally, group discussions and peer feedback (34.6%) indicate that students appreciate collaborative learning experiences. Meanwhile, individual writing exercises (22.2%) are the least preferred, suggesting that students may find greater benefits in interactive or guided activities rather than working independently. These findings highlight the importance of digital tools and collaborative learning in academic writing courses, as they facilitate peer interaction, provide real-time feedback, and enhance engagement through interactive learning experiences.

2.4 Students' Preferred Resources for Academic Writing Support

Students use a variety of resources to enhance their academic writing skills, ranging from digital tools to scholarly materials and direct consultations. While online writing tools and academic journals provide essential support in improving accuracy and credibility, interactions with lecturers and peers offer valuable feedback. Understanding which resources students rely on the most can help educators refine

instructional strategies and recommend the most effective writing aids. The table below presents data on the resources students use for academic writing support.

Table 6. Resources Used for Academic Writing Support

What resources do you use to help with academic writing?	Percentage
Textbooks	34.1%
Online writing tools (Grammarly, etc)	73.2 %
Academic journals and articles	69.5 %
Consultation with lecturer or peers	42.7 %

The data illustrates the various resources students utilize to support their academic writing, with a strong preference for digital and research-driven tools. The most frequently used resource is online writing tools (e.g., Grammarly), favored by 73.2% of students. This underscores the growing role of digital tools in enhancing writing accuracy and coherence.

Interview data also confirms this result, with some students indicating that digital tools assist them in enhancing grammatical correctness and coherence in their writing. One of the students stated:

"Grammarly helps me catch grammar mistakes that I would otherwise overlook. It also gives me more suitable word choices, and thus my writing becomes more structured and readable."

(Rizal- Interview)

Another student added:

"Online tools have increased my confidence in writing academically, especially when it comes to checking citations and paraphrasing"

(Madhu- Interview)

These insights emphasize the dual role of digital tools to enhance linguistic accuracy. Additionally, the significant reliance on academic journals and articles (69.5%) reflects students' preference for research-driven learning. Interview results also support this finding, as students expressed that the use of academic journals helps to make the argumentation stronger and enables critical thinking. As one student said:

"I always attempt to utilize journal articles because they present trustworthy theories and data. If not for these, my work would lack credibility."

(Zidan- Interview)

Other students also reported struggle in accessing academic materials. As explained by one of the students:

"Sometimes, I struggle to access free sources of quality journals. I usually use Google Scholar, but not everything is made available without subscription."

(Putri- Interview)

Another student also had similar problem as stated in the following excerpt:

"It takes time to synthesize and analyze from various sources, but I know it is required so that I may defend my arguments better."

(Rizal- Interview)

These findings highlight the critical role played by academic journals in the development of students' analytical and evaluative skills in academic writing. However, while accessibility remains a challenge, students still recognize the importance of high-quality research materials. This suggests a need for improved institutional support to provide greater access to these resources.

Moreover, the notable use of consultations with lecturers or peers (42.7%) further highlights the relevance of collaborative learning. This is supported by interview data, in which students explained that discussing their work with lecturers and peers helps them to clarify ideas and work on writing structure. One student explained:

"Getting feedback from my lecturer allows me to recognize mistakes that I would not otherwise notice. It also gives me a clearer idea of how I can make my arguments more solid."

(Madhu- Interview)

Similarly, another student contributed:

"Peer discussion allows me to compare my writing with others and learn different ways of communicating ideas better."

(Setya- Interview)

Meanwhile, the lower preference for traditional writing guides or textbooks (34.1%) suggests a shift toward more interactive and technology-based learning approaches. This is also supported by findings from interviews. Some of the students explained that they rarely use printed writing guides because they are more accessible and available on the internet. One student stated:

"Using online sources allows me to locate examples and templates in a moment, and that simplifies the writing process."

(Fauzi- Interview)

These findings suggest that students favor structured digital support systems and collaborative, research-driven approaches rather than conventional printed materials. This reinforces the need to integrate DMC-based frameworks into EFL academic writing instruction.

3. The Role of Digital Tools in Academic Writing

3.1. Students' Perceptions of Digital Tools in Academic Writing

Digital tools have become an essential part of academic writing, offering students support in research, organization, and language accuracy. These tools provide accessibility, instant feedback, and structured guidance, making them valuable for improving writing skills. Understanding students' perceptions of the effectiveness of digital tools can help educators integrate technology more effectively into writing instruction. The table below presents data on students' views regarding the role of digital tools in enhancing academic writing.

Table 7. Students' Perceptions of Digital Tools in Academic Writing

Do you think using websites and digital tools can help you improve your academic writing?	Percentage
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Yes	98.8 %
No	1.2 %

The data indicates that an overwhelming majority of students (98.8%) believe that websites and digital tools can help improve their academic writing, while only 1.2% disagree. This result reinforces the growing reliance on technology in academic settings, emphasizing the need to integrate digital resources into academic writing instruction.

3.2. Students' Preferred Digital Tools for Academic Writing

Digital tools play a crucial role in academic writing, providing students with resources to conduct research, organize references, and enhance writing quality. While research databases and writing platforms are widely utilized, other tools such as citation managers and collaborative platforms are used less frequently. Understanding students' preferences for digital tools can help educators recommend and integrate the most effective resources into writing instruction. The table below presents data on students preferred digital tools for academic writing.

Table 8. Students' Preferred Digital Tools for Academic Writing

What digital tools do you find most helpful for academic writing?	Percentage
Citation managers (e.g Zotero, mendeley)	28 %
Writing platforms, (Google doc, Grammarly,)	67,1 %
Research data bases (e.g., google scholar)	69.5 %
Collaborative platforms (e.g. padlet)	7.3 %

The data shows that the most helpful digital tools for academic writing, according to respondents, are research databases (69.5%) and writing platforms (67.1%). This indicates that university students increasingly depend on digital academic databases such as Google Scholar and JSTOR to locate credible sources, while also relying on online writing tools like Google Docs and Grammarly to draft, revise, and refine their academic writing.

Additionally, students noted that while they recognize the benefits of digital tools, the lack of institutional support sometimes hinders their ability to fully utilize them. One participant explained:

"Our classrooms have internet access, but not all have the necessary software installed, so we often have to find alternatives on our own."

(Zidan- Interview)

These findings indicate the significance of empowering students with adequate digital means and education to fully utilize multimodal composing in academic writing. In the absence of institutional support, students are unable to integrate digital tools properly into their learning process.

Meanwhile, citation managers (28%) are less commonly used, indicating that although students recognize the importance of proper referencing, they may not fully utilize tools like Zotero and Mendeley. Additionally, collaborative platforms such as Padlet and Trello (7.3%) have the lowest usage, suggesting that academic writing is often viewed as an individual rather than a collaborative process.

This is supported by interview results, as some of students elaborated that they barely employ collaborative writing tools in class. One of them claimed:

"Most of my academic writings are individual work, so I don't feel the need to use platforms such as Trello or Padlet."

(Zidan- Interview)

Another student elaborated further:

"I have heard of Padlet, but I have never used it to write because our lecturers don't ask us to work in groups on assignments."

(Rizal- Interview)

These findings underscore the need to further integrate citation management training into academic writing instruction while also promoting collaborative writing tools to support peer feedback and teamwork. One potential approach is incorporating Digital Multimodal Composing (DMC), which combines text, visuals, and interactive elements to facilitate collaborative discussions and deeper articulation of ideas.

Discussion

The findings of this study confirm that some students experienced difficulties in academic writing. This finding is in line with previous studies (Bram & Angelina, 2022; Aunurrahman et al., 2017; Faridah et al., 2018; Mukminin et al., 2015; Lesmana & Arifin, 2020). Regarding difficulties in structuring academic papers, one effective approach to addressing this challenge is the application of Move Analysis, a genre-based framework pioneered by Swales (1990). Move Analysis has been widely used to examine the rhetorical structures of research articles, helping writers understand how different sections of a paper are organized to achieve communicative purposes. Several studies have applied this approach to analyze various sections of research articles, such as abstracts (Hyland, 2000; Kurniawan, 2023; Kurniawan et al., 2019; Lubis & Kurniawan, 2020), introductions (Nabilla et al., 2021; Swales, 1990, 2004; Yasin & Qamariah, 2014), methods (Cotos et al., 2017; Peacock, 2011), and results, discussion, and conclusion sections (Ruiying & Allison, 2003; Yang & Allison, 2003). By integrating Move Analysis into academic writing instruction, students can develop a clearer understanding of how to structure their papers effectively. In addition, the data also showed that students struggled with integrating sources properly. This finding aligns with previous research by Pecorari (2003) and Mansourizadeh and Ahmad (2011).

Regarding students' learning preferences, the strong preference for collaborative learning aligns with Pham's (2023) findings, which showed that jointly authored papers outperformed individually written papers and that collaborative writing significantly enhanced students' writing quality. Consequently, researchers worldwide have recommended the implementation of collaborative writing in academic writing classrooms (Chelghoum & Grine, 2018). These findings highlight the importance of balancing collaborative learning with teacher guidance to effectively support students' academic writing development.

Furthermore, step-by-step guidance and examples emerged as the most preferred teaching methods for academic writing. This finding aligns with Faridah et al.'s (2018) recommendation that structured guidance should be integrated into academic writing courses to address students' writing challenges. Structured instructional models, such as Inquiry-Based Learning (Marshall, 2013) and Design Thinking (Camacho, 2016), can offer possible solutions because these models emphasize staged processes to support learning. The Stanford Design Thinking process consists of five stages, namely empathize, define, ideate, prototype, and test. Meanwhile, Inquiry-Based Learning incorporates engagement, exploration, explanation, elaboration, assessment, and reflection, providing a framework for guided academic writing instruction. By incorporating structured guidance into academic writing courses, educators can better support students in overcoming writing challenges, particularly in organizing ideas, improving coherence, and integrating references effectively. These findings suggest that structured scaffolding and digital collaborative learning are essential components of academic writing instruction. The emphasis on collaboration in academic writing instruction is also supported by Hatt et al. (2023), who claimed that collaborative learning fosters critical thinking and creativity, both of which are essential components in developing students' academic writing proficiency.

Moreover, interactive digital tools were perceived by students as among the most helpful learning activities for academic writing. This preference aligns with the principles of Digital Multimodal Composing (DMC), which emphasize the integration of digital resources to enhance engagement, creativity, and comprehension in writing (Ramadhan et al., 2024). DMC has transformed language instruction by incorporating text, images, sound, and motion, thereby reshaping traditional literacy practices in EFL classrooms (Hafner & Ho, 2020; Lim & Unsworth, 2023).

This indicates that, by integrating digital tools, academic writing instruction can become more dynamic and interactive, supporting students' engagement and skill development in a technology-enhanced learning environment. This aligns with Zhang and Yu (2023), who stated that pedagogical frameworks for DMC provide structured methodologies that help educators effectively integrate multimodal composition while fostering students' critical, creative, and technical competencies. Similarly, Ramadhan et al. (2024) emphasized that integrating digital resources can refine both the cognitive and technical aspects of writing. Furthermore, Pham and Li (2023) found that the main perceived advantages of individual DMC tasks include the enhancement of learner autonomy and information literacy skills. Thus, the integration of DMC-based approaches in academic writing classrooms can bridge the gap between traditional writing instruction and modern digital literacy, making the learning process more effective and engaging.

Regarding the role of digital tools in academic writing, previous studies highlight the importance of a well-equipped digital classroom in fostering effective multimodal composing practices, as students need exposure to digital platforms, video-editing tools, and online collaboration features (Liang & Lim, 2020). According to Prensky (2001),

students today are “digital natives” who naturally engage with technology in learning processes, making Digital Multimodal Composing (DMC) an essential approach for enhancing writing skills. These findings align with Alotaibi et al. (2022), who claimed that Google Scholar has become an important search platform for students in higher education.

CONCLUSION

The findings reveal that students primarily struggle with writing coherent paragraphs and structuring arguments in their academic papers. To overcome these challenges, students expressed a preference for collaborative learning and structured guidance, particularly step-by-step instruction and peer discussion. Furthermore, they relied more on research databases and writing platforms than on traditional textbooks, emphasizing the importance of digital tools in academic writing. These results highlight the need to incorporate structured instruction, collaborative learning, and interactive digital tools to enhance students’ writing proficiency. The strong preference for research databases and writing platforms suggests that students recognize the value of credible sources and digital writing aids, although they may still require additional training in citation management. Moreover, students’ preference for multimedia-based instruction, such as educational videos and interactive activities, underscores the potential of integrating digital learning resources to support engagement and skill development. These insights suggest that academic writing instruction should adopt a multimodal approach that aligns with students’ digital literacy and learning preferences. Based on the findings, academic writing instruction in EFL higher education contexts should adopt a more student-centered and technology-enhanced approach. Given students’ difficulties in writing coherent paragraphs and structuring arguments, lecturers are encouraged to provide explicit, step-by-step scaffolding supported by clear models and examples. The strong preference for collaborative learning indicates the importance of integrating peer discussion, group writing tasks, and feedback activities to facilitate idea development and improve writing quality. Furthermore, students’ reliance on research databases and digital writing platforms suggests that academic writing courses should systematically incorporate digital tools, including training in citation management and the use of academic databases. Integrating multimodal and interactive digital resources, such as educational videos and digital mind-mapping tools, can further enhance students’ engagement and align writing instruction with their digital literacy and learning preferences. Despite its contributions, this study has several limitations. The sample was limited to university students within a specific EFL context, which may restrict the generalizability of the findings to other educational settings or learner populations. In addition, although this study identified students’ preferred digital tools for academic writing, it did not examine the effectiveness of these tools in improving actual writing performance. Future studies are recommended to involve more diverse learner populations across different educational contexts to enhance the generalizability of the findings. Further research could also examine the effectiveness of

specific digital tools in improving students' academic writing performance and explore the role of interactive and multimedia-based instruction in fostering long-term academic writing development.

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