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Research Article

The Influence of AI Writing Tools on the Content and Organization of Students' Writing: A Focus on EFL Instructors' Perceptions

Yapay Zekâ Yazma Araçlarının Öğrenci Yazılarının İçeriği ve Organizasyonu Üzerindeki Etkisi: Yabancı Dil Olarak İngilizce Eğitmenlerinin Algılarına Odaklanması

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Abstract

The integration of artificial intelligence (AI) technology has received significant attention in English as a Foreign Language (EFL) education, and the current study investigates the influence of AI writing tools on the content and organization of students' writing from the perspective of English as a Foreign Language (EFL) instructors. A qualitative approach was utilized, involving 12 EFL instructors from a state university. Data were collected through interviews and analysed thematically. The findings reveal that instructors employed various AI writing tools, such as Quillbot, Jenni, ChatGPT, WordTune, Copy.ai, Paperpal, Perplexity, DeepL, Elicit, and Essay Writer to enhance students' writing skills. AI tools positively impacted content writing by offering valuable prompts and suggestions for idea generation and expression. However, concerns about over-reliance on AI tools potentially hindering critical thinking and personal creativity were raised. Regarding writing organization, AI tools significantly supported students in structuring coherent and well-organized writing, improving the logical arrangement of ideas. Yet, the caution against overdependence on these tools was noted. These findings underline the significance of balanced implementation for successful learning outcomes.

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Anahtar sözcükler: Yapay zeka, yazma eğitimi, içerik yazma, yazma organizasyonu, eğitmenlerin algıları.

Öz

Yapay zeka (YZ) teknolojisinin entegrasyonu, Yabancı Dil Olarak İngilizce (EFL) eğitiminde önemli bir ilgi görmüştür ve bu çalışma, YZ yazma araçlarının öğrencilerin yazılarının içeriği ve organizasyonu üzerindeki etkisini yabancı dil olarak İngilizce eğitmenlerinin bakış açısından araştırmaktadır. Bir devlet üniversitesinden 12 Yabancı Dil Olarak İngilizce eğitmeninin katılımıyla nitel bir yaklaşım kullanılmıştır. Veriler görüşmeler yoluyla toplanmış ve tematik olarak analiz edilmiştir. Bulgular, eğitmenlerin öğrencilerin yazma becerilerini geliştirmek için Quillbot, Jenni, ChatGPT, WordTune, Copy.ai, Paperpal, Perplexity, DeepL, Elicit ve Essay Writer gibi çeşitli YZ yazma araçlarını kullandıklarını ortaya koymaktadır. Yapay zeka araçları, fikir üretimi ve ifade için değerli ipuçları ve öneriler sunarak içerik yazımını olumlu yönde etkilemiştir. Bununla birlikte, YZ araçlarına aşırı güvenmenin eleştirel düşünmeyi ve kişisel yaratıcılığı engelleyebileceğine dair endişeler dile getirilmiştir. Yazma organizasyonu ile ilgili olarak, YZ araçları öğrencileri tutarlı ve iyi organize edilmiş yazıları yapılandırmada önemli ölçüde desteklemiş ve fikirlerin mantıksal düzenlemesini geliştirmiştir. Yine de, bu araçlara aşırı bağımlılığa karşı dikkatli olunması gerektiği belirtilmiştir. Bu bulgular, başarılı öğrenme çıktıları için dengeli uygulamanın öneminin altını çizmektedir.

1. INTRODUCTION

For personal development, career promotion, and promoting global cooperation, learning languages other than one's mother tongue has become essential via various technological gadgets or methods (Babayiğit & Çelik, 2023a; Çelik & Babayğit, 2023b). The integration of artificial intelligence (AI) technology in language classrooms, particularly in writing instruction, has garnered significant attention in the realm of English as a Foreign Language (EFL) education (Sumakul et al, 2022; Zhai & Wibowo, 2023). AI-powered writing tools, encompassing grammar checks, writing assistance, and automated content generation, have been increasingly adopted due to their potential benefits in supporting EFL students' writing development (Chang et al., 2021; Gayed et al., 2022; Zhao, 2022). These tools offer real-time feedback on various aspects of writing, such as grammar, vocabulary, syntax, content, and structure, assisting students in identifying and correcting errors swiftly (Hosseini et al., 2023; Thorp, 2023, Balcı, 2016; Balcı&Aksoy, 2020). As a result, students can gain a better understanding of successful writing principles, facilitating their writing skills improvement.

However, the existing body of research has predominantly focused on the enhancement of grammar and syntax through AI writing tools, while insufficient attention has been given to their influence on content and organization in student writing. Content and organization are equally significant components that profoundly impact reader comprehension and engagement in academic writing (Lee & Yuan, 2021; Ningrum, 2013). Content represents the substance of writing, conveying ideas, thoughts, and messages to the audience in a relevant, informative, and meaningful manner. On the other hand, organization pertains to how the content is structured and connected, guiding readers through the piece in a logical and coherent manner (Molina et al., 2021; Ningrum, 2013). Hence, it is crucial to investigate their impact on these crucial aspects of writing to gain a comprehensive understanding of the practical utility of AI writing tools in EFL classrooms.

To address this research gap and provide a holistic examination of the utility of AI writing tools in EFL classrooms; this study aims to explore the tyeps and purpose of use of AI writing tools utilized by EFL instructors in their writing instruction. In addition, the study intends to determine instructors' perceptions of the impact of these AI writing tools on student writing quality, with a specific focus on content and organization. This research seeks valuable insights into the integration of AI writing tools in EFL classrooms, considering EFL instructors' perspectives. Understanding how AI writing tools influence content and organization can enhance writing instruction and EFL education overall. In light of the above, this research poses the following crucial research questions:

(1) Which AI writing tools do EFL instructors employ to improve the quality of students' writing, especially in terms of content and organization?

(2) What are the views of EFL instructors regarding the influence of AI writing tools on students' writing in terms of content and organization?

2. LITERATURE REVIEW

The evolution of writing instruction in the era of technological advancement involves the integration of digital tools to create more dynamic and creative pedagogical experiences. Virtual classrooms, online workshops, and cloud-based writing tools revolutionize writing instruction, offering real-time feedback, collaborative editing, and plagiarism checks, enhancing students' writing acumen and promoting critical thinking. AI-driven platforms offer personalized learning opportunities by identifying students' strengths and weaknesses, enabling tailored teaching strategies for more effective outcomes. Mobile technology in writing instruction empowers students to publish their work, fostering confidence and collaborative learning. However, challenges related to digital equity, privacy, and potential distractions must be addressed in crafting pedagogical strategies for the AI era. Extensive research on AI writing tools indicates their potential to improve students' writing skills, offering real-time suggestions for grammar, punctuation, and style enhancement. Paraphrasing tools aid in avoiding plagiarism, while AI models generate coherent sentences, stimulating creative and critical thinking (Burkhard, 2022; Marzuki et al., 2023; Nazari et al., 2021). However, educators must be mindful of potential drawbacks, such as over-reliance on AI and its limitations in addressing

higher-order writing elements and understanding context. Ensuring equitable access to AI tools is also crucial for equitable learning outcomes.

2.1. Teaching Writing in the Age of Artificial Intelligence

The evolution of writing instruction in the current era of technological advancement is intimately connected to the rapid progress of digital tools. Haleem et al. (2022) emphasize that this transformation is driven by the increasing integration of digital utilities within the educational landscape, resulting in a shift from traditional pen-and-paper methodologies to more creative and dynamic pedagogical experiences. Garlinska et al. (2023) further discuss the revolutionary impact of virtual classrooms, online workshops, and cloud-based writing tools on the domain of writing instruction. These platforms provide features like instant feedback, collaborative editing capabilities, and plagiarism detection, enhancing students' writing acumen and promoting critical thinking and independent reasoning (Burkhard, 2022; Nazari et al., 2021).

Moreover, Bhutoria's study (2022) demonstrates how AI-powered platforms and applications offer personalized learning opportunities through the identification of students' writing strengths and weaknesses. This allows educators to customize their teaching approaches according to individual needs and preferences, leading to enhanced learning outcomes (Dogan et al., 2023). Additionally, in their study, Cahyono et al. (2023) investigate the role of mobile technology as an intermediary in writing instruction, enabling students to share their work in public forums, which, in turn, boosts their confidence and writing skills. Additionally, these platforms facilitate peer review and feedback processes, fostering a sense of community and promoting a collaborative learning environment (Umamah & Cahyono, 2022). Nevertheless, the integration of writing instruction into the digital realm comes with its share of obstacles, as acknowledged in existing literature. Concerns about digital equity, privacy, and potential distractions necessitate continuous discussions and proactive efforts to develop pedagogical policies and strategies suitable for the era of artificial intelligence (Duncan & Joyner, 2022).

2.2. The Influence of AI Writing Tools on the Quality of Students' Writing

Extensive research has been conducted on the influence of AI writing tools on students' writing ability, revealing both positive and negative implications. On the positive side, AI writing tools such as Grammarly, ChatGPT, QuillBot, Wordtune, and Jenni have demonstrated significant potential in improving students' writing skills. These tools utilize sophisticated algorithms to detect and rectify typical grammar, punctuation, and syntax errors, thus improving clarity and style. Moreover, they provide distinctive features like paraphrasing and sentence refinement, which further enhance the effectiveness of writing (Burkhard, 2022; Marzuki et al., 2023; Nazari et al., 2021).

In their research, Tambunan et al. (2022) discovered that the use of Grammarly led to noticeable improvements in students' grammar and punctuation skills. Grammarly's AI system offers real-time suggestions for enhancing different writing elements, effectively transforming the writing process into a valuable learning experience. QuillBot, another AI tool, specializes in paraphrasing, assisting students in avoiding plagiarism while maintaining the original essence of their content (Kurniati & Fithriani, 2022). Additionally, WordTune focuses on refining the tone and style of the text, enabling students to identify and address their writing weaknesses, thereby fostering self-assessment and facilitating the learning process (Zhao, 2022). Jenni, an AI-based writing assistant, offers predictive text suggestions, contributing to increased writing productivity and creativity (user feedback) (Yeo, 2023).

The development of GPT-3 by OpenAI represents a significant advancement in language model technology, enabling it to proficiently produce coherent and contextually relevant sentences. This remarkable capability has been shown to stimulate students' creative and critical thinking, as evidenced by the research conducted by Colney (2023), Koraishi (2023), and Lam & Moorhouse (2022). These studies highlight the potential of AI tools, like GPT-3 and similar technologies, in enhancing students' writing skills and overall abilities. Educators can leverage these AI-driven tools to create enriching learning environments and introduce innovative approaches to improve students' writing competence and expression.

Furthermore, AI models like GPT-3 and its successor GPT-4 have proven effective in suggesting the next word or paragraph in a text, supporting authors in crafting human-like compositions. These AI tools rely on machine learning algorithms that predict text sequences based on extensive training data, as demonstrated in the research by Gimpel et al. (2023) and Marzuki et al. (2023). Ongoing studies explore the impact of AI tools on various aspects of writing, including their potential to reduce cognitive barriers for English as a Foreign Language (EFL) learners by providing real-time translation and grammar suggestions, as investigated by Gayed et al. (2022). Additionally, AI accelerates the literature review process, proving particularly beneficial in fields with large volumes of partially structured data, as outlined by Wagner et al. (2022). These findings illustrate the wide-ranging applications and benefits of AI in the realm of writing and research.

Notwithstanding the advantages, educators must be mindful of potential drawbacks associated with AI writing tools. Over-reliance on these tools may hinder students' natural learning process and self-editing skills, leading to diminished critical thinking abilities (Iskender, 2023). The use of AI for idea generation might also impact students' creativity and originality (Johinke et al., 2023). Moreover, AI tools may not effectively address higher-order writing elements, such as argument structure and coherence, which demand human reasoning and understanding (Farrokhnia et al., 2023).

Additionally, it's important to recognize that AI tools may face challenges in fully comprehending the subtleties and nuances of human language and emotions, which could result in contextually inappropriate suggestions, as pointed out by Haleem et al. (2022). While AI has made significant strides in language processing, it may still struggle to accurately interpret certain complex linguistic contexts and emotional expressions. Furthermore, the issue of digital equity has emerged as a concern in the context of AI technologies in education. Not all students have equal access to AI tools and related resources, leading to potential disparities in learning outcomes. As highlighted by Mozumder et al. (2023), students from underprivileged backgrounds may face barriers in accessing and utilizing AI-driven educational tools, which could further widen the educational divide.

Addressing these challenges requires ongoing research, development, and implementation of AI technologies with a keen awareness of potential biases and limitations. It also necessitates efforts to bridge the digital divide and ensure that all students have equitable access to AI-powered educational resources. By doing so, educators and researchers can work towards harnessing the full potential of AI while mitigating its limitations and promoting inclusive and effective learning experiences.

3. METHODOLOGY

3.1 Research Design

To address the research questions, a qualitative approach was implemented. Qualitative research is a systematic empirical inquiry into meaning, focusing on the analysis of non-numerical data such as text, video, or audio. It aims to gain profound insights into concepts, opinions, or experiences (Merriam, 1988). Among the various qualitative methodologies, the case study approach was employed, which typically involves conducting interviews and/or observations. The case study is an extensive examination of a particular subject, encompassing individuals, groups, locations, events, organizations, or phenomena. It entails in-depth exploration of the subject within its real-world setting, facilitating the acquisition of a comprehensive comprehension. This approach provided the researcher with the opportunity to investigate unrestricted processes and reveal significant elements associated with the subject under scrutiny (Merriam, 1988; Priya, 2021).

3.2 Participants

A total of 12 instructors (4 female and 8 male) working at the School of Foreign Languages in a state university participated in the study. The selection of study participants involved a careful assessment of certain criteria, which included their experience with AI writing tools in educational settings, accessibility, eagerness to take part in the study, and proficiency in instructing advanced courses like essay writing. The selected instructors all had at least five years of experience in teaching English as a Foreign Language (EFL) and a minimum of one year's experience in utilizing AI writing tools in their instructional settings. This deliberate selection ensured that the instructors' involvement went beyond theoretical knowledge, encompassing actual hands-on experience with AI tools in real-life teaching situations. Their diverse backgrounds and substantial experience make their insights and

contributions valuable for understanding the practical applications of AI tools in the educational context.

To uphold confidentiality, the participants were assigned identifiers, such as P1, P2, P3, and so forth. The recruitment process commenced by initiating communication with participants through email, where they were informed about the study's purpose, their roles, data collection methods, and their rights, including the voluntary nature of participation and the freedom to withdraw from the study without facing any adverse consequences. This approach aimed to adhere to ethical research principles. Additionally, the participants were provided with an informed consent form, which they were required to read, understand, and sign if they willingly consented to take part in the study. By employing this meticulous recruitment process, the study ensured the highest ethical standards were maintained while incorporating pertinent experiences and viewpoints.

3.3 Instruments

For data collection, interviews were employed as the research instrument. This approach facilitated the collection of rich and qualitative information regarding EFL instructors' utilization of AI writing tools and their perceptions of the tools' impact on students' writing quality, particularly in terms of content and organization. To formulate relevant interview questions, an extensive literature search was conducted, drawing from studies by Dale and Viethen (2021), Marzuki et al. (2023), Lee et al. (2022), Nazari et al. (2021), and Zhao (2022) as valuable references. These sources were thoroughly examined to identify topics and themes aligning with the research objectives. The resulting interview protocol included specific questions such as: "Which AI writing tools do you implement in your classroom?", "What do you usually use these AI writing tools for?" and "How have these tools influenced your students' writing, specifically in terms of content and organization?". Through this interview guide, the study explored both the practical applications and theoretical implications of AI writing tools in the context of EFL teaching.

3.4 Data Analysis

The researchers adopted a thematic case study approach to analyse the qualitative data. Thematic analysis, as a qualitative method, involves identifying, analysing, and interpreting patterns of meaning or "themes" within the data. The primary goal of this analysis is to move beyond surface-level interpretations and uncover significant themes that contribute to a deeper understanding of the research question (Braun & Clarke, 2012; Castleberry & Nolen, 2018). The data analysis process comprised five distinct steps. Firstly, the interview transcripts were thoroughly familiarized through multiple readings by the researchers. Secondly, preliminary codes were generated to organize related words and phrases according to the research criteria. Subsequently, these codes were carefully examined and categorized, while any emerging relationships or patterns were identified. Finally, a set of categories was established based on these grouped codes. This rigorous thematic analysis enabled a comprehensive exploration and interpretation of the qualitative data.

4. FINDINGS

4.1 AI Writing Tools Utilized by EFL Instructors

Data from the interviews revealed that all the participants utilized a range of AI writing tools based on their distinctive features and alignment with teaching objectives. To offer a comprehensive yet concise summary of these AI writing tools, the data has been systematically arranged into a clear and informative structure. Table 1 functions as a comprehensive catalog, encompassing the diverse range of AI writing tools utilised by EFL instructors.

Table 1. Types and Usage Purposes of AI Writing Tools Utilized by EFL Instructors

AI Writing Tool	Participants		Purpose of Use
	Codes	User Count	
ChatGPT	P1, P2, P3, P4, P5, P6, P7, P8, P9, P10,	100% (12/12)	Enhance conversational writing skills, Generate sample texts and provide suggestions,

	P11, P12		Rewrite or paraphrase passages, Facilitate brainstorming and organizing thoughts.
Copy.ai	P2, P4, P6, P7, P8, P10, P11	58% (7/12)	Generate content for blogs, articles, and other written content, Offer an overview of key points and research on the topic.
DeepL	P1, P3, P5, P7, P9, 911	50% (6/12)	Translate academic texts, Rephrase sentences in a more natural style, Improve writing quality.
Elicit	P2, P5, P8, P11	33% (4/12)	Expand the pool of accessible research material, Summarize and paraphrase research sources.
Essay Writer	P1, P2, P3, P4, P6, P8, P9, P11	67% (8/12)	Generate essay outlines and full essays for learning purposes, Offer an overview of key points on the subject.
Jenni AI	P1, P2, P3, P4, P5, P6, P7, P8	67% (8/12)	Generate ideas, Provide feedback on writing.
Paperpal	P1, P2, P3, P4, P7, P8, P9, P11, P12	75% (9/12)	Provide grammar and style suggestions to improve writing.
Perplexity	P1, P4, P6, P7, P10, P12	50% (6/12)	Expand the pool of accessible research material, Summarize and paraphrase research sources.
Quillbot	P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12	100% (12/12)	Rewrite sentences and paragraphs, Improve writing style and vocabulary, Avoidance of plagiarism.
Wordtune	P1, P3, P5, P7, P8, P9, P12	58% (7/12)	Teach paraphrasing skills and improve sentence flow, Correct grammar, spelling, and punctuation errors.

As it can be understood from the Table 1, various AI writing tools were used by the participants for diverse purposes, ranging from enhancing writing skills and generating content to supporting paraphrasing and research material expansion. The data revealed that ChatGPT and Quillbot were the most commonly employed tools, with all 12 participants using them. These tools served diverse purposes, such as enhancing conversational writing skills, generating sample texts, providing suggestions, and facilitating the rewriting or paraphrasing of passages. Moreover, Quillbot was utilized to rewrite sentences and paragraphs, improve writing style and vocabulary, and avoid plagiarism. The least utilized AI writing tool was Elicit, with 4 out of 12 participants using it, representing 33% of the total. Elicit was mainly employed to expand the pool of accessible research material and support summarizing and paraphrasing research sources.

4.2 The Influence of AI Writing Tools on the Quality of Students' Writing

The findings from our qualitative research, encompassing interviews and thematic analysis, are presented in this section to explore instructors' perceptions on the impact of AI writing tools on students' writing quality, with a specific focus on content and organization aspects. Through thematic analysis, recurrent themes and patterns emerged from the narratives of participating instructors, offering valuable insights into the implications of integrating AI writing tools within educational settings.

4.2.1 Influence on Content Writing

The study explored instructors' perspectives on content writing, revealing two major sub-themes: "idea generation and language use." Participants had diverse views on the role of AI tools in stimulating creativity and overcoming writer's block. For instance, P1 highlighted how AI tools assist students in overcoming creative hurdles: "AI writing tools have played a crucial role in enhancing students' creativity by offering suggestions and expanding on their initial ideas. These tools can serve as a source of inspiration, helping students explore new perspectives and possibilities, thereby fostering a more imaginative and innovative approach to their writing". Conversely, P12 acknowledged the usefulness of AI writing tools in idea generation but expressed concerns about potential generic ideas lacking a personal touch: "AI writing tools have shown mixed effects on

students' ability to generate ideas. While they can be a helpful starting point, the ideas generated may lack a personal touch. For more authentic and meaningful expression, students need to infuse their unique perspectives, experiences, and creativity into their writing while using AI assistance."

P3 presented a contrasting perspective, suggesting that AI writing tools might hinder students' ability to generate original ideas by fostering overreliance: "Based on my observations, AI writing tools can occasionally hinder students' capacity to come up with original ideas. In certain situations, it may be more advantageous for students to face challenges in idea generation and problem-solving, as these are valuable skills that can be honed through practice." On the other hand, P11 emphasized the positive impact of AI writing tools, especially in academic writing, by offering phrases or sentences that enhance initial ideas with evidence or arguments: "AI writing tools have shown a positive impact on students' ability to elaborate on their thoughts."

Regarding vocabulary and language use, instructors recognized both advantages and potential downsides of AI writing tools. P2 praised AI tools for enhancing students' vocabulary and expression: "In my observations, AI writing tools have had a notable and positive influence on students' vocabulary usage. These tools frequently offer suggestions for synonyms or more sophisticated words that students might not have considered using independently." However, P6 cautioned against overcomplicated language, stressing the importance of clarity and precision: “After incorporating AI writing tools, there is a noticeable enhancement in the way students use transition words and phrases. However, it is important to be cautious, as some students might become overly reliant on these tools, potentially stifling their personal creativity and unique writing styles.”

P10 highlighted the usefulness of AI writing tools as a learning resource for enhancing vocabulary but expressed concerns about over-reliance: "AI writing tools can serve as valuable learning resources for students to acquire and apply new vocabulary. Nevertheless, there exists a potential risk of students becoming excessively dependent on these tools, leading them to neglect the effort required to memorize and independently use the newly encountered words." Additionally, P5 emphasized the role of AI tools in reducing repetition in students' writing by suggesting varied vocabulary: “When a student tends to use a specific word or phrase excessively, these tools can offer alternative suggestions to diversify the language used.”

In conclusion, the instructors' insights provided a comprehensive understanding of the impact of AI writing tools on students' vocabulary use. They acknowledged the benefits of these tools in facilitating vocabulary expansion. However, the instructos also raised concerns about the potential risk of overreliance, emphasizing the importance of maintaining clarity and precision in writing while incorporating new vocabulary.

4.2.2 Impact on Writing Organization

The integration of AI writing tools had a positive impact on writing organization, according to the participating instructors. One significant sub-theme that emerged was "Coherence and Logical Flow." AI tools played a crucial role in facilitating a clear and logical flow of thoughts in students' writing. The AI tools offered valuable guidance to students by suggesting improved phrasing, eliminating redundancies, and enhancing coherence (P9). This support boosted students' confidence and encouraged more effective expression of their ideas. As P9 mentions: “AI writing tools are beneficial in promoting a clear and logical flow of thoughts by providing suggestions for improved phrasing, eliminating redundancies, and enhancing coherence. With the assistance of these tools, students tend to write more confidently, knowing that they have guidance and support available to them”

While acknowledging the benefits, some instructors also raised concerns about potential overreliance on these tools. One participant (P7) recognized the tools' assistance in organizing thoughts and structuring arguments but emphasized the importance of students maintaining critical thinking and problem-solving skills independently by saying “These tools are highly beneficial in assisting students with organizing their thoughts, structuring their arguments, and identifying gaps in their logic (T2). However, students may become excessively dependent on these tools, potentially neglecting the development of critical thinking and problem-solving skills crucial for effective writing”.

T3 further expanded on these findings by emphasizing the instant feedback aspect of AI writing tools. According to T3, these tools played a vital role in assisting students in structuring arguments, identifying logical inconsistencies, and promoting clear communication. The ability to receive real-time feedback and learn from mistakes significantly reinforced students' grasp of effective writing practices and contributed significantly to their improvement in writing skills over time. The corresponding paraphrase of the given response is as follows: “The real-time feedback provided by these tools enables students to correct their mistakes on the spot, thereby strengthening their understanding of effective writing practices. This immediate learning opportunity significantly contributes to the enhancement of their writing skills over time”.

Moving to the second sub-theme, "Use of Transition Words and Phrases," instructors unanimously agreed on the positive impact of AI writing tools in enhancing sentence flow and cohesion. For example, one instructor (P1) stated a substantial improvement in students' use of transition words and phrases after incorporating AI writing tools by saying “The integration of AI writing tools into our program has resulted in a remarkable enhancement in students' use of transition words and phrases. These tools has helped them grasp the application of these transitional elements in their writing, consequently improving the flow and organization of their written works. It feels as if they have an ongoing interactive tutorial, guiding them in developing better writing techniques”.

Another instructor (P2) appreciated the benefits while cautioning against overdependence on these tools by saying “Certainly, there is an evident improvement in the manner students employ transition words and phrases upon integrating AI writing tools. Their sentences exhibit better flow, with clearer connections between ideas, indicating an improved understanding of cohesion in writing. However, it is essential to acknowledge that, on the other hand, some students might become excessively reliant on these tools, potentially hindering their personal creativity and unique writing styles. As with any technology, achieving a balanced use and providing ongoing guidance are key factors to consider”. P3 highlighted the immediate impact of AI writing tools on student writing, helping them incorporate transitional elements while their ideas were fresh. Similarly, P4 provided a before-and-after comparison, revealing significant improvement in students' writing with the guidance of AI tools by saying “I have observed a notable enhancement in students' writing when utilizing AI tools, evident in a before-and-after analysis. The tools' assistance in understanding the significance of transition words and phrases resulted in writing that is more cohesive and well-structured. The progress of the students highlights the positive influence of integrating AI technology into my teaching approach”.

The findings for each sub-problem determined in line with the aim of this study are presented under the relevant sub-heading in this section. In this context, the findings obtained for each sub-problem and the comments related to these findings are presented.

5. CONCLUSION AND DISCUSSION

The objective of this study was to explore the influence of various AI writing tools on the quality of student writing, focusing on content and organization, from the perspective of EFL (English as a Foreign Language) instructors. The initial findings revealed a diverse array of AI writing tools employed by the participating instructors, including Quillbot, Jenni, ChatGPT, WordTune, Copy.ai, Paperpal, Perplexity, DeepL, Elicit, and Essay Writer. These tools were utilized with the common goal of enhancing students' writing skills, reflecting the growing trend of integrating technology into education. These findings align with the work of Liu et al. (2021) and Ouyang et al. (2022), who emphasized the use of multiple AI tools to create a comprehensive learning environment and improve students' academic performance, including their writing abilities.

Regarding the impact of AI writing tools on content writing, which encompasses the generation of ideas and their articulation, the study revealed promising potential. Wong and Mak (2019) have noted that the content of second-language writing is often influenced by students' linguistic abilities and cultural backgrounds. AI writing tools, as highlighted by Alharbi (2023), can provide valuable prompts and suggestions, supporting students in expressing their thoughts effectively and enriching the depth of their content. Additionally, the studies by Gayed et al. (2022) and Marzuki et al. (2023) support our findings, indicating that AI writing tools can aid idea development and assist students in overcoming creative blocks. However, it is essential to acknowledge the concerns raised by

Huang and Tan (2023) regarding the potential risk of over-reliance on these tools, which may hinder critical thinking and personal creativity.

AI writing tools offer valuable support in terms of writing organization, encompassing the logical arrangement and coherence of ideas. Bowen and Thomas (2020) and Chang et al. (2021) have emphasized that organizing ideas is a critical aspect of second-language writing, and students frequently encounter challenges when trying to establish coherence in their writing. However, AI writing tools have proven to be valuable in providing instantaneous feedback and offering suggestions for reorganizing sentences and paragraphs. This benefit has been recognized by all the participating instructors, resulting in significant improvements in the overall structure of students' writing, as noted in the research conducted by Marzuki et al. (2023). However, the caution provided by P2 is noteworthy, appreciating both the benefits and potential drawbacks of AI tools. This concern is consistent with the findings of Cardon et al. (2023), suggesting that overdependence on AI tools may hinder critical thinking among students.

This study provides valuable insights into the utilization and impact of AI writing tools on EFL student writing quality. The findings indicate the potential of these tools in enhancing content, organization, and vocabulary use in students' writing. The study acknowledges certain limitations, such as the small sample size of EFL instructors from a specific university, which may limit the generalizability of the findings. To address this limitation, future research should include a higher number of instructors working in different regions. Besides, collecting data from educators who have used AI writing tools but decided not to continue using them may provide a more balanced perspective. Additionally, exploring students' perspectives and measuring their actual improvements in writing skills due to AI tool integration would contribute to a more comprehensive understanding.

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