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Exploring the Implementation of Artificial Intelligence (AI) Writing Tools in Teaching and Learning: Faculty and Students' Perspectives in Higher Education

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Model (TAM).

Artificial Intelligence (AI) has emerged as a transformative tool in the field of education, with its potential to revolutionize teaching and learning in higher education institutions. People are exploring ways to connect its power and reform traditional educational practices. This paper explores the implementation of five different AI writing tools in teaching and learning in Higher Education, focusing on the perspectives of faculty and students. By examining their perspectives and identifying the challenges that can be encountered, the study seeks to gain a better understanding of the benefits and limitations of integrating AI writing tools in higher education. There are limited studies that seek to determine the perspectives of faculty and students in higher education regarding AI writing tools. The method used for the study is literature review, particularly hand-searching journal, and books approach. The study's findings have revealed that AI writing tools perform a multitude of functions, yet they also possess certain limitations.

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INTRODUCTION

As the winds of technological innovation sweep across higher education institutions, the exploration of Artificial Intelligence (AI) writing tools in teaching and learning emerges as an attractive journey. AI brings together the diverse perspectives of faculty and students in shaping the future of higher education globally. Various aspects of our lives are transforming, including the way to acquire knowledge and write. The way to learn is changing, as study materials are now easily accessible through the computers or smartphones. The utilization of artificial intelligence (AI) in different sectors of the world is increasing, and according to Biswas (2023), higher education will be significantly impacted by AI in many ways.

There is a concern that with the increased use of AI in education, the role of teachers could potentially become redundant (Karsenti, 2019; Okolo et al., 2023). Also, advocates of the technology argue that AI should be perceived as a tool to assist teachers rather than replace them (Eke et al., 2023). According to Kiemde and Kora (2021), the field of Artificial Intelligence (AI) is experiencing significant growth and success worldwide. However, some countries may face considerable socio-cultural and organizational obstacles that prevent the widespread adoption and implementation of AI (Butcher et al., 2021; Kasneci et al., 2023). These challenges may include a lack of digital infrastructure, insufficient education, inadequate data availability, limited public policies, and inadequate funding (Bimpong, 2023).

According to Butcher et al. (2021), countries that are not included in the top list projected to gain the most from AI and other emerging technologies do not appreciate the value of AI. However, it is important to acknowledge that the progress of AI will affect all nations, regardless of their geographical location. Nevertheless, the impact of

AI in certain countries may be delayed due to the various challenges faced by several regions (Bimpong, 2023). Because there is limited research conducted on different AI writing tools excluding ChatGPT, this paper aims to explore some of the writing tools, including ChatGPT, Tinywow, Jenni.ai, Copy.ai, and Tutor AI.

Despite the growing popularity of these tools, there is a lack of comprehensive research on their potential benefits and drawbacks for faculty and students in higher education. Therefore, this study seeks to address the following questions: What AI writing tools are being utilized by students and faculty in higher education institutions? What are the perceptions and attitudes of faculty members in higher education towards the integration and utilization of AI writing tools in their teaching practices? How do students in these institutions perceive and experience the use of AI writing tools in their academic assignments, and what impacts do these tools have on their writing skills and learning outcomes?

METHOD USED IN THE STUDY

To address the questions at hand, we conducted a systematic review of relevant literature. The sources utilized consisted of peer-reviewed articles and highly regarded journals. To identify publications that specifically addressed the use of AI writing tools in higher education, we followed a method inspired by Webster and Watson's suggestions in 2005. This involved searching for specific keywords in leading journal databases, selecting publications that met certain criteria, and conducting a quick scan of the identified publications by reviewing their titles, abstracts, and full texts to determine their relevance to AI writing tools research. Finally, we engaged in a detailed process of reading, evaluating, analyzing, and synthesizing the full texts of the selected publications. The databases we employed for this purpose were Google Scholar, Doaj, and WorldCat.

What is AI and its Writing Tools?

There is a lack of universally accepted definitions for AI (Parnas, 2017). This is primarily due to the interdisciplinary nature of AI research, making it challenging to form a unified definition. AI has been explored not only by computer science but also by various other fields such as linguistics, philosophy, neuroscience, anthropology, biology, psychology, cognitive science, and statistics (Ma & Siau, 2018; Okolo et al., 2023). The Oxford Online English Dictionary gives the definition that, it is the ability of computers or other machines to demonstrate or simulate intelligent behavior” (Oxford Online Dictionary, n.d.). This concept includes a field of study dedicated to understanding and developing such capabilities. Other dictionaries also define AI as science and its ability to simulate intelligent human behavior.

Merriam-Webster dictionary (n.d.) defines AI as a branch of computer science dealing with the simulation of intelligent behavior in computers, or the capability of a machine to imitate intelligent human behavior. The Britannica Online Dictionary (n.d.) also supports the definition that AI is a machine that has the ability of a computer, or a robot controlled to do tasks that are usually done by humans because they require human intelligence and discernment. However, other groups of definitions view AI in a much broader context, considering it a science.

For the purpose of this study, AI will be defined as a computer system that performs cognitive tasks by generating ideas, rectifying writing errors, and imitating the intelligence of humans but adds no emotional input to what it produces. Additionally, AI writing tools will be defined as tools that enable AI to generate content, enhance writing quality, and translate languages for users. This definition aligns with existing literature, highlighting the ability of AI to possess skills similar to the human mind.

AI Writing Tools

According to MacGregor (2022), there are currently over 85,000 higher education institutions worldwide. The influence of

technology on higher education has been significant and continues to evolve. One particular area where technology, specifically artificial intelligence (AI), has made a significant impact is in the field of writing (Nguyen, 2023). As higher education institutions gradually undergo digital transformations and internet accessibility increases, the door has opened for the adoption of AI-powered tools, particularly those related to writing and content creation.

Research conducted by Okolo et al. (2023) reveals that the utilization and acceptance of AI writing tools have experienced a significant increase in certain countries. Furthermore, they note that businesses are increasingly turning to these tools to enhance their products and services. Some countries also have a rich diversity of languages, and artificial intelligence (AI) writing tools play an important role in breaking down language barriers. These tools offer a range of services, including translation, content generation in multiple languages, and even spell-check and grammar correction for less commonly spoken languages (Butcher et al., 2021).

This is particularly valuable for students and educators in higher education, as these tools assist in proofreading, suggesting improvements for essays and reports, and even providing explanations for grammar and writing conventions. Among the various AI writing tools available, ChatGPT stands out as a widely utilized tool across institutions (Okolo et al., 2023). Its usefulness and effectiveness have made it the preferred choice for students and faculty looking to enhance their writing skills and overcome language obstacles. In the following section, the paper will briefly discuss some of these AI writing tools in more detail and engage in a conversation with them.

Conversational Hierarchy-Aware Transformer-based Generative Pre-training Transformer (CHATGPT)

ChatGPT, developed by OpenAI, is an advanced conversational AI model. It is a language model that has undergone extensive training on a vast corpus of internet text, enabling it to comprehend

and generate text that closely resembles human language (Nguyen, 2023; Rao et al., 2023; Rudolph et al., 2023). ChatGPT is suitable for a wide range of natural language processing tasks. One of the key functions of ChatGPT is tutoring and assistance. It can provide guidance and support to students, helping them understand complex concepts and improve their learning outcomes.

Additionally, ChatGPT can offer research assistance, aiding students in their quest for relevant information and resources. It can also assist in essay and paper reviewing, proofreading, and editing, ensuring that students' written work is polished and error-free. Furthermore, ChatGPT can provide valuable feedback on grammar, sentence structure, and content, helping students enhance the quality of their writing.

Tinywow

Tinywow performs over 200 tasks across five major areas: file tools, PDF tools, image tools, video tools, and writing tools. In the file tools section, there are 15 functions available, while the PDF tools section provides over 45 functions. The image tools section includes 30 functions, the video tools section offers 60 functions, and the writing tools section provides over 52 functions. Tinywow offers a wide range of features that make each task easily accessible. It can write essays, generate paragraphs, complete sentences, rewrite sentences, generate social media content, create articles, and translate sentences in English, Spanish, French, and Portuguese. One standout feature of Tinywow is its ability to split, merge, unlock, compress, and e-sign PDF files. This useful website also allows users to convert videos into GIF files, compress images, and convert them into different file formats.

Jenni.ai

Jenni.ai is specifically designed to cater to the needs of students, serving as both a writing and library assistant. With its advanced capabilities, Jenni.ai can generate original and unique content based on previous input. Moreover, it has a library function that securely stores uploaded academic

papers, utilizing a combination of custom AI and GPT-4 to produce very good content. Additionally, Jenni.ai features a built-in plagiarism checker, ensuring the authenticity of your work, and provides in-text citations and references for quoted sources. Jenni's advanced AI technology can help non-native speakers improve their grammar, sentence structure and vocabulary, allowing them to express themselves more effectively in English.

Copy.ai

Copy AI is an innovative writing tool that uses the power of machine learning to generate a wide range of content, such as blog headlines, engaging emails, compelling social media posts, and web copy. Its primary objective is to assist users in the copywriting process by offering different tools and writing frameworks to start their creative journey. With support for over 25 languages, Copy AI serves as an excellent introductory tool for individuals looking to acquaint themselves with generative AI. Marketers, freelancers, students, and business owners can all benefit greatly from Copy AI. By utilizing this tool, content creators can enjoy several key advantages in their quest to produce exceptional content. Copy AI significantly reduces the time required to craft essays or other forms of content, allowing for a more efficient workflow. Additionally, Copy AI has a user-friendly interface, making it accessible to individuals of all skill levels. What sets Copy AI apart from other AI writing tools is its unique ability to incorporate additional details to better understand user preferences.

Tutor AI.

Another writing tool is Tutor AI. This innovative feature offers users guidance and suggestions to further refine their writing skills. By utilizing Tutor AI, users can enhance their writing abilities, learn new techniques, and ultimately elevate the quality of their content. With its extensive language support, user-friendly interface, and customizable features, Tutor AI proves to be a vital asset for both students and faculty. This tool is particularly beneficial for students who require

assistance with research, proofreading, and essay reviewing. It does not only aid in content creation but also helps improve grammar.

With Tutor AI, students can ask questions related to their course content and engage in real-time chats to receive guidance and arrive at the correct answers. The personalized assistance offered by Tutor AI allows students to learn at their own pace while still receiving interactive guidance. Moreover, Tutor AI provides comprehensive answers to any question and engages in conversations with both students and faculty. It offers hints, motivation, and guidance, making it feel like students are having a dynamic conversation with a virtual tutor, similar to interacting with a human instructor.

A Conversation with AI Writing Tools

In addition to the study, we decided to be creative and engage in a conversation with these writing tools, inquiring about their unique qualities that set them apart from others. Below are the responses we received from each AI writing tool. We asked them what makes them different from other writing tools.

ChatGPT – 3.5

I am based on OpenAI's GPT-3.5 architecture, which is one of the most advanced and powerful language models developed to date. Here are some key features that distinguish me from other chatbots: Scale and Training: GPT-3.5 is one of the largest language models, trained on a diverse range of internet text up until September 2021. This extensive training allows me to understand and generate human-like text across a wide variety of topics. Contextual Understanding: I can maintain context over a more extended conversation, understanding and responding to input based on the preceding conversation. This enables more coherent and contextually relevant interactions. Versatility: I'm designed to be versatile and handle a wide array of tasks, from answering questions and providing information to creative writing and problem-solving. Human-like Text

Generation: My responses aim to be contextually relevant and coherent, often resembling human-generated text. This is a result of the training data and architecture, allowing me to generate text that is contextually appropriate and contextually consistent. Knowledge Base: While I don't have real-time access to the internet, I have been trained on a diverse range of internet text up until my last update in September 2021. This allows me to provide information and answer questions based on the knowledge available up to that point. (OpenAI, personal communication, October 19, 2023).

Tinywow: Only the “Explain it” Function

I am different from other chatbots because I have been trained on a lot of information and conversations. This means I can understand and answer a wide range of questions. I can talk to you about different topics like animals, math, or even tell you a story. Other chatbots might know about different things or have different ways of talking. So, just like you and your friend have different toys, different chatbots have different knowledge and abilities.” (Tinywow, personal communication, October 19, 2023).

Copy.ai

As an AI language model-based chatbot, there are a few aspects that make me different from other writing tools: Unlike traditional writing tools, I am designed to engage in conversations and provide information in a conversational manner. This allows users to ask questions, seek clarification, and get interactive responses beyond just grammar and style suggestions. I can provide assistance and information on a wide range of topics, not just writing-related ones. Whether it's general knowledge, specific industry expertise, or creative ideas, I aim to provide comprehensive support beyond the scope of writing tools. With the help of artificial intelligence, I can analyze and understand the context of a conversation, which enables me

to provide more relevant and accurate responses. This contextual understanding contributes to a more personalized user experience. I continuously learn from user interactions, evolving and improving over time. This adaptive learning enables me to provide more accurate and up-to-date information and adapt to different writing styles or preferences. While I primarily function as a text-based chatbot, I can also understand and generate responses in other modalities such as audio or images, depending on the platform or interface used. (Copy.ai, personal communication, October 19, 2023).

Jenni.ai

While other AI writing tools are built upon similar language model foundations, Jenni.ai distinguishes itself through a deep understanding of user intent, allowing for more precise and contextually aligned outputs (Sun et al., 2021). Additionally, Jenni.ai offers a wide range of functions that set it apart from other AI writing tools. For instance, it comprises a robust authoring assistant that can be fine-tuned on a dataset heuristically labeled by specific user intentions, thus allowing it to generate text suitable for subsequent user edits and customization. Moreover, Jenni.ai incorporates the concept of a specialized neural network that interfaces with the pretrained language model to modify its hidden activations without altering the original weights, permitting more flexibility and adaptability in generating desired text output. Sun, S., Zhao, W., Manjunatha, V., Jain, R., Morariu, V I., Dernoncourt, F., Srinivasan, B V., & Iyyer, M. (2021, April 14). IGA: An Intent-Guided Authoring Assistant. <http://arxiv.org/abs/2104.07000>. (Jenni.ai, personal communication, October 19, 2023).

Tutor AI

Tutor AI is different from other AI systems because it is specifically designed to assist and support students in their learning

process. Tutor AI uses algorithms and machine learning to provide personalized and adaptive tutoring experiences, tailoring the content and feedback to meet each student's individual needs and learning style. Tutor AI can analyze students' performance, identify areas of weakness or misunderstanding, and provide targeted interventions and explanations to help them improve. It can also track progress over time and adjust its approach accordingly. Unlike other AI systems that may focus on tasks like voice recognition or data analysis, Tutor AI is dedicated to enhancing education and helping students succeed. (Tutor AI, personal communication, October 19, 2023).

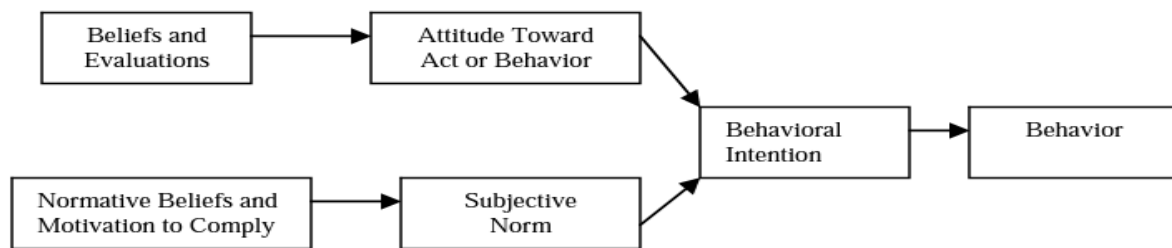
Overall, it was interesting to observe the various ways in which these writing tools try to set themselves apart. The paper utilized only the "explain it" feature of Tinywow, and it is important to note that Tinywow performs over 200 functions. Each of these writing tools serves a unique purpose, though with some overlapping functionalities. For instance, Jenni.ai attempts to offer references and in-text citations to support its generated content which makes it unique, however these references may be inaccurate and should be checked before using them. Also, these writing tools collectively improve grammar, assist in content creation, maintain contextual relevance, and answer a diverse range of inquiries.

THEORETICAL FRAMEWORK: TECHNOLOGY ACCEPTANCE MODEL

This study utilizes the Technology Acceptance Model (TAM), which provides insights into the process of technology adoption and utilization by users. TAM was originally developed by Davis (1989), building upon the theory of reasoned action (TRA) proposed by Fishbein and Ajzen in 1975 during their psychological research. TRA suggests that individual behavior is influenced by behavioral intention, which is shaped by an individual's attitude towards the behavior and the subjective norms associated with its performance. In simpler terms, behavior is influenced by both

attitudes and beliefs. The diagram below illustrates the TRA concept.

Figure 1: Theory of Reasoned Action



Note: The model was produced by Fishbein and Ajzen in 1975. “The TRA posits that individual behavior is driven by behavioral intention where behavioral intention is a function of an individual’s attitude toward the behavior and subjective norms surrounding the performance” (Masrom, 2007, p.3).

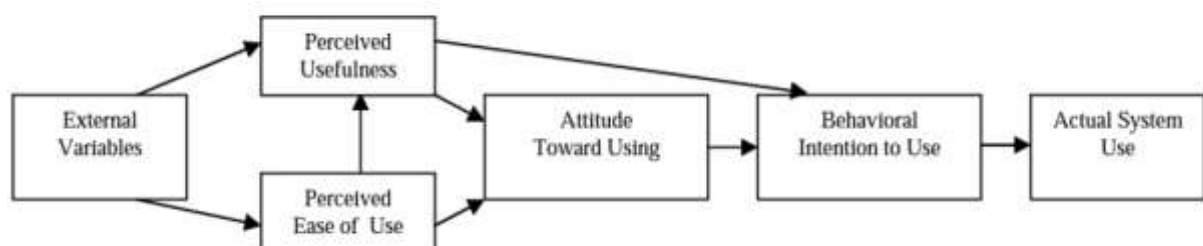
The Technology Acceptance Model (TAM) has been widely utilized in various studies to assess user acceptance of information technology. Examples of technologies that have been tested using TAM include spreadsheet applications, email, web browsers, websites, and BlackBoard (Davis et al., 1989; Landry et al., 2006; Marangunić & Granić, 2015). TAM has evolved over the years and has undergone several extensions, reaching the recent TAM 2 model (Marangunić & Granić, 2015; Venkatesh & Davis, 2000).

According to TAM, when users are introduced to a new technology, their decision on whether and

how to use it is influenced by various factors. Two key factors identified by TAM are perceived usefulness (PU) and perceived ease-of-use (PEOU). Perceived usefulness refers to the extent to which users believe that utilizing the technology will enhance their work performance (Marangunić & Granić, 2015; Masrom, 2007). On the other hand, perceived ease-of-use pertains to the ease with which users perceive they can operate the technology (Davis et al., 1989; Venkatesh & Davis, 2000; Marangunić & Granić, 2015).

If a technology is perceived as easy to use, users are more likely to develop a positive attitude towards it. Conversely, if a technology is perceived as difficult to use, users are less likely to adopt a positive attitude. Additionally, other factors such as the number of users, gender, age, and cost can also influence technology adoption. The diagram below illustrates the original TAM.

Figure 2: Original Technology Acceptance Model



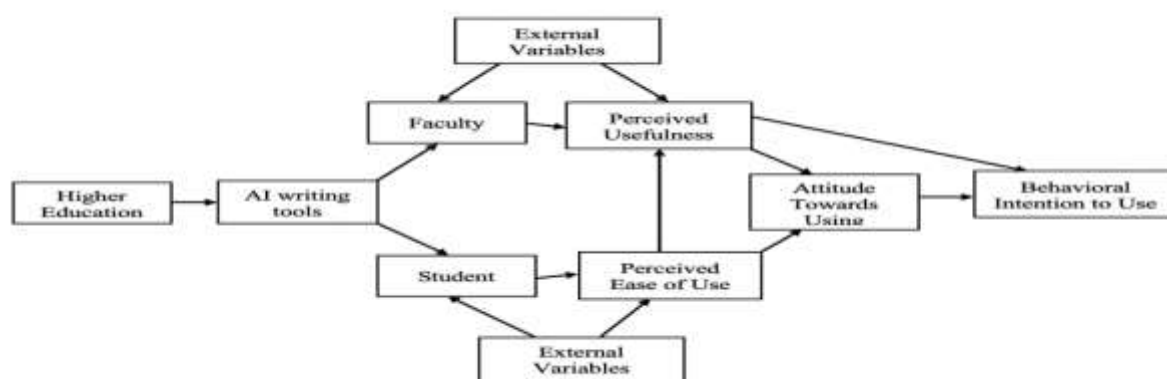
Note: This diagram illustrates the original technology acceptance model

These writing tools are user-friendly, with an easy-to-use interface, and are available at no cost. The study explains how faculty and students in higher education perceive the usefulness of AI

writing tools in the context of teaching and learning, making the model ideal for the study. It aims to determine whether these tools are truly efficient and beneficial for both students and faculty. Additionally, the study investigates the ease with which faculty and students believe they

can integrate and utilize AI writing tools in their existing workflows. Figure three illustrates the model employed in this study, although it does not include actual system use. It is important to note that this study is based on a review of existing literature.

Figure 3: AI writing tool model



Note: The AI writing tool model is the actual model for this study

In higher education, the TAM concerning AI writing tools can be significantly influenced by various external factors. The usage of a particular writing tool and its ease of manipulation are key determinants that can enhance the adoption of these tools among faculty and students (Venkatesh & Davis, 2000; Marangunić & Granić, 2015). Additionally, factors such as durability and affordability may play a vital role in the widespread utilization of such technology. An example of this is the widespread use of ChatGPT, a well-known and widely used AI writing tool that is not only free but also highly favored by numerous students and faculty members who frequently discuss its merits.

Furthermore, external variables like social influence can also shape the willingness of faculty and students to embrace and incorporate AI writing tools into their educational activities. The attitude towards using these writing tools can also significantly impact the behavioral intention to utilize them. However, it is important to recognize that perceptions may vary depending on factors such as age and gender, as individuals possess unique preferences and perspectives.

Faculty's Perspective on the Integration of AI Writing Tools in Teaching and Learning

According to Haristiani (2020), AI writing tools have significant potential for usage as teaching tools. The perspective of faculty on AI writing tools may differ, however some believe that this may make students lazy (Okolo et al., 2023) while others also believe that it can provide them with opportunities for regular language practices (Fitria, 2021). Kiptonui et al. (2018), performed a study that showed instructors favorable opinions towards adding writing tools into their courses. The majority of instructors thought that these writing tools improve students learning outcomes by delivering a fun learning experience and boosting understanding.

Also, instructors reported an interest in using writing tools in their classrooms, seeing them as user-friendly technology that made themes more fascinating (Kiptonui, et al., 2018). A study conducted by Kim in 2019 also stated that some instructors have a strong desire and agree to the use of AI writing tools. According to Dwivedi (2023), writing tools in the field of education serve a dual purpose, enhancing students' communication skills and providing automation support to teaching faculty.

While ChatGPT is widely recognized as the leading AI writing tool in developed countries, its popularity in certain countries is limited due to technological and network constraints faced by higher education faculty (Bimpong, 2023; Okolo et al., 2023). Despite their numerous benefits, some educators are concerned that these tools may foster student laziness (Dwivedi, 2023). In a study conducted by Yang and Chen (2023), it was found that certain faculty members expressed a lack of interest in AI writing tools due to their unfamiliarity with the technology.

We believe that providing faculty with adequate training on effectively integrating writing tools into teaching, particularly in writing classes, can help mitigate the negative implications of AI misuse. By equipping faculty with a deeper understanding of how students may utilize AI in unfavorable ways, we can foster a more responsible use of these tools. Moreover, AI writing tools have the potential to significantly enhance academic achievement for all students. However, it is important to acknowledge that faculty will continue to play a vital role in the development of writing skills, with these tools serving as aids in the process.

Undoubtedly, faculty members may also express concerns regarding the potential misuse of AI tools, such as plagiarism or excessive reliance on automated writing assistance. These concerns may lead to students encountering difficulties in developing their skills. Nevertheless, it is essential to view AI writing tools as supplementary aids to traditional learning methods, rather than replacements. Faculty members can actively encourage their use as tools for enhancing writing skills, while simultaneously emphasizing the importance of teaching students the fundamental principles of writing. By doing so, students can benefit from the advantages of automated tools while still improving their abilities.

Some countries are known for their linguistic diversity (Güldemann, 2018), which raises questions about the effectiveness of AI tools across all languages spoken in these countries. Faculty members may consider the applicability

and effectiveness of these tools in specific linguistic contexts. Additionally, the availability of technology and resources in certain countries may lead to concerns about unequal access to AI tools. Given that technology can be a challenge in some countries, faculty members may have varying levels of comfort and experience with the use of AI. While some may readily embrace AI tools, others may prefer more traditional teaching methods.

Student's Perspective on the Integration of AI Writing Tools in Teaching and Learning

Before the emergence of some of these writing tools, a study conducted by Sengupta and Chakraborty (2020) delved into the utilization of chatbots within higher education. Their findings revealed that chatbots can serve as a valuable tool for enhancing student engagement and satisfaction. However, AI writing tools are not widely used by higher education students in certain underdeveloped countries compared to students in most developed countries (Unterhalter et al., 2018; Okolo et al., 2023). Also, ChatGPT stands out as the most well-known and utilized among these tools.

Rudolph et al. (2023) argued that ChatGPT is the world's most advanced AI writing tool to date. Unlike other writing tools, it can create impressive prose within seconds, generating significant excitement for its potential in assessing students in higher education and various other topics (Rudolph et al., 2023). Shin et al. (2021) state that AI writing tools can enhance grammar lessons and create a conducive learning environment that significantly improves students' grammatical knowledge. This study is further supported by Dewi et al. (2021) and Park (2019), who identified the benefits of AI in enhancing students' language skills. According to them, AI writing tools give quick replies to student's inquiries.

In Shawar's study conducted in 2017, it was found that the utilization of AI writing tools in language learning has the potential to reduce language anxiety and offer ample opportunities for practice, incorporating different elements. Similarly,

Bimpong (2023) highlighted the prevalence of anxiety among international students in the United States, specifically pertaining to their language proficiency. By employing these writing tools, student engagement can be enhanced, and students can access relevant learning opportunities (Shin et al., 2021).

In the context of non-English speaking countries, AI writing tools may play an important role in enhancing the writing skills and productivity of higher education students. These tools provide good suggestions for grammar, style, and structure, thereby facilitating improvement in their written work. Particularly for students who require additional support in language proficiency, these tools prove to be very beneficial. For instance, Tinywow offers assistance in languages such as Spanish, French, and Portuguese. By offering prompt suggestions and corrections, these tools can effectively save students' time, enabling them to focus on content creation rather than dedicating excessive time to proofreading.

Concerns shown on the use of AI Writing Tools in Higher Education

AI writing tools have become an integral part of our lives, proving their effectiveness in rectifying grammar errors and enhancing content quality. However, students may have valid concerns about over-reliance on these tools, as improper usage can lead to unintentional plagiarism. On the other hand, these tools have demonstrated their ability to decrease language anxiety, which can greatly benefit students whose first language is not English but studying in English-speaking countries.

Nevertheless, it is also important to acknowledge that embracing AI writing tools in higher education may also introduce certain challenges that need to be carefully addressed by both students and faculty. There may also be concerns among faculty regarding students becoming overly dependent on AI writing tools for their writing tasks, potentially neglecting the development of essential writing skills.

Additionally, these tools may not always fully understand or incorporate the cultural and linguistic nuances specific to African languages and contexts (Okolo et al., 2023).

Additionally, students and faculty from underprivileged backgrounds may show concerns regarding fair access to technology and AI tools. This concern becomes obvious if there exist differences in terms of device availability and internet accessibility. Regrettably, both students and faculty from most underdeveloped countries fall within these underprivileged backgrounds (Güldemann, 2018; Shi et al., 2021). Moreover, students and faculty from these backgrounds may be interested in AI tools that not only acknowledge but also support diverse cultural expressions, specifically those that can be rooted in their context.

While some faculty and students readily embrace AI tools, others may prefer more traditional approaches to writing and editing (Nguyen, 2023). Some instructors may also encounter difficulties when it comes to integrating AI writing tools into their teaching methods (Dincer, 2018). However, it is possible to train instructors on how to effectively incorporate these tools into their teaching practices (Lidén & Nilros, 2020). This training can include guidance on using the tools ethically, monitoring student engagement and success, and integrating them into lesson plans (Lidén & Nilros, 2020).

In some countries, faculty members may face challenges in fully embracing these writing tools due to the financial implications associated with AI usage. However, it is worth noting that utilizing writing tools alone may not be as costly as adopting generative AI for teaching and learning purposes. Faculty members need to recognize that these writing tools are here to stay and are constantly being updated. Therefore, they should strive to find innovative ways to incorporate them into their teaching and learning practices.

Ethical use of AI Writing Tools in Higher Education

Utilizing AI writing tools in teaching and learning raises a lot of ethical concerns. With so many updates becoming available with the use of AI, faculty and students should learn to use AI responsibly, avoiding copyright infringement, discriminatory language, or inappropriate content. According to (Lund & Wang, 2023), users of AI writing tools should take care and utilize them appropriately to minimize the possible danger of data breaches. Students and faculty should consider the privacy implications of using AI writing tools.

Ensuring that data and work are handled with care and comply with privacy regulations. Kasneci et al. (2023), suggested that increasing awareness among educators and students, and installing modern technology to prevent unauthorized access, may help reduce the likelihood of data breaches. Another concern revolves around academic integrity. The International Centre for Academic Integrity (2021) identifies six fundamental values that form the bedrock of integrity: responsibility, trust, courage, honesty, fairness, and respect. When a student breaches any of these values, it undermines academic integrity.

Also, a study conducted by Sullivan et al. (2023) on ChatGPT identified two key areas of concern: academic integrity and the potential for enhanced learning in higher education. Through a comprehensive analysis of 100 news articles, they discovered a range of responses, with a particular focus on academic integrity and innovative assessment design. Consequently, it becomes evident that students can use writing tools for cheating purposes. Therefore, it is imperative for faculty members to provide clear guidelines to students regarding the use of AI writing tools in their teaching practices (Cassidy, 2023).

Students should be aware that these writing tools are available for improvement purposes only and should not be used to generate complete papers for faculty. Relying too heavily on these tools can make students lazy and hinder their writing skills.

Additionally, both students and faculty need to understand that not all answers provided by AI writing tools are correct and appropriate. These tools are designed to perform in a specific manner, which means they can be biased in their feedback. As Lund and Wang (2023) suggest, faculty should also familiarize themselves with other technologies that can help detect AI-generated content submitted by students. This will ensure the proper and effective use of AI by students.

CONCLUSION

In conclusion, the study has yielded some good findings, but it also has some drawbacks. One major limitation is that the study relied solely on existing literature, without conducting an empirical investigation. This lack of empirical research is a significant drawback. Additionally, the study focused fully on the use of writing tools in higher education, neglecting the potential benefits in other sectors such as high school, healthcare, and social media.

To obtain a more comprehensive understanding, it would have been beneficial to conduct an empirical study using either qualitative, quantitative, or mixed methods. Nevertheless, the study effectively utilized the most up-to-date literature on AI writing tools to draw conclusions. It provided insights into why both faculty and students can benefit from incorporating AI writing tools into teaching and learning practices in different higher education institutions.

The literature for the study revealed that AI writing tools can be of great value to other stakeholders involved in education. By understanding the advantages and disadvantages of utilizing AI writing tools in teaching and learning, these stakeholders can make informed decisions and maximize the benefits of these tools. The literature also reveals that the majority of students and faculty hold positive attitudes toward the integration of AI writing tools in teaching and learning.

From the literature, it cannot be denied that AI has become an integral part of life, and its presence is here to stay. Higher education institutions must

embrace these advancements. It is vital to note that these tools cannot replace the role of faculty; instead, they make their work more efficient and easier. Just as Grammarly, Mendeley, Zotero, and other weak AI tools have been widely approved and used, higher education institutions should provide clear instructions on the utilization of these new tools like the ChatGPT, Tinywow, Copy.ai, Jenni.ai, and Tutor ai. If these writing tools cannot be incorporated into teaching and learning, then there is no need to teach how to develop them.

Suggestions

Higher education students and faculty should receive training on the utilization of various AI writing tools. It is important, however, to provide clear instructions that not only enhance students' confidence but also ensure their comprehension of how to effectively leverage AI for writing improvement. Additionally, ethical considerations surrounding the use of AI writing tools should be thoroughly discussed, emphasizing the significance of originality, proper attribution, and the avoidance of plagiarism. By doing so, students will cultivate a sense of responsibility in their academic papers.

It is important to view AI writing tools as supplementary resources rather than replacements for traditional learning methods. Faculty members should encourage students to utilize these tools in conjunction with other writing resources and strategies. These writing tools can aid students in developing a deeper understanding of various writing principles and techniques. By providing training, clear instructions, conducting more research, and engaging in more ethical discussions, higher education institutions can equip students and faculty with the necessary skills to effectively utilize AI writing tools.

Before utilizing AI generative tools, students should critically analyze the suggestions they provide, as some may contain errors or be plagiarized. It is necessary for students to approach these writing tools thoughtfully. While they can be valuable for checking grammar,

improving content, and generating suggestions to enhance clarity, they should not be relied upon to generate the entire idea for a paper or assignment.

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