THE USE OF ARTIFICIAL INTELLIGENCE AS THE POTENTIAL SUPPORTING LEARNING TOOLS FOR DOING LEARNING PROJECTS

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Abstract

Artificial Intelligence (AI) is at present getting popularly used as the supporting tools of learning. The EFL students use various types of application to support their learning and doing the school assignment and projects. This study is thus aimed at portraying how AI is used as their supporting learning tools. This narrative inquiry is carried out by asking five selected students of English Department of a state university in Tulungagung who used AI to help them completing their final project of writing thesis proposal. The data were collected through interviewing them and reading their notes in July 2023. They were then qualitatively analysed. The results of this study revealed two main points. They do not only use Chat GPT as the most popular AI application, but there are also some other AI applications like Bing Chat, and Grammarly which are used to support their learning projects like writing research proposal. Those application are used for various reasons and usage like using Chat GPT to find framework of research topic, to develop and brainstorm ideas; employing Bing Chat to find review literature; and Grammarly is used to check the grammar error in their research proposal. Surprisingly, they can learn in a joyful learning atmosphere as well because they can play games while learning English vocabulary and other topics. Finally, these research results can be pedagogically implemented in the recent English Language Teaching which integrates technology for their teaching and learning process.

Keywords:
Artificial Intelligence, AI as Supporting Learning Tools, Learning Projects in EFL

INTRODUCTION

Artificial Intelligence is currently being widely used in almost all aspects of life including English Language Teaching (ELT). Research indicates a promising future for AI in ELT for optimizing the English language skills, translation, assessment, recognition, attitude, satisfaction (Sharadgah & Sa'di, 2022). The most popular product of AI, ChatGPT, proved to be able to produce convincing and coherent writing for questions by predicting the next

plausible word in a word sequence, but often the answers are less (Fitria, 2023). The other products of AI are also used for many purposes in various business like for entertainment, business, social, cultural, and education as well. This technology advancement has brought about the advantages in almost all aspects of lives for any almost all ages or young to old generation. People use AI to assist them in making decision. As a pillar of Industrial Revolution 4.0, Artificial Intelligence (AI) can provide the benefits of time efficiency and minimize human error compared to traditional methods (Rahutomo et.al., 2019). With such advantages, the EFL students also use it to support the learning activities.

Research about Artificial Intelligence in English Language Teaching has been carried out in five domains. The first is the psychology in which the research has focused on the perception of teachers and students towards AI in teaching and learning English. The study by Hartono et.al. (2023) revealed that they have positive attitudes towards AI solutions in English language teaching and it is highlighted that AI technologies is effective in improving language skills and providing personalized instruction. The AI tools are also able to cater to individual needs and offer immediate feedback. However, concerns were raised regarding technological readiness and the need for training and support in effectively utilizing AI solutions. Moreover, Wang et.al. (2022) found that the learners who perceive higher social and cognitive presences via interacting with AI and who show greater affection for AI's appearance tended to use the AI coach more frequently, demonstrate higher L2 enjoyment and achieve higher learning outcomes. The second is the impact of AI towards learning language like the one carried out by Oluwafemi et.al. (2023) which showed that the emergence of AI technology can help both the EFL teachers and students in teaching and learning activities, because it is proved to improve and increase the students' speaking, writing, reading, and listening skills processes and provides an easy, interesting, and personalized learning experience as well. In addition, the use of AI based pronunciation checker demonstrated that students have a varied of conceptions about using technology of doing independent learning especially in English pronunciation and the tool can improve their pronunciation (Noviyanti, S. D. 2020). Moreover, Liu & Kong (2021, April) in their study found that the introduction of AI technology provides new ideas and entry points for changing the current college English teaching model, which is of great significance for improving students' listening, speaking, reading, and writing skills and achieving college English teaching goals. The third domain is utilizing of AI technology at EFL tertiary level showing that it is useful to facilitate the English language learning (ELT) process and to keep both teachers and students informed and updated with the recent technological developments. This also demonstrated that all digital and AI-powered devices are potential to assist in teaching and learning (AbdAlgane & Othman, 2023). The fourth domain is the challenges and concern with AI in ELT teaching. Lucas, Benjamin, & Di Zou. (2023) explored generative artificial intelligence preparedness among university language instructors and found that their challenges and concerns are associated with adopting AI. Drawing on semi-structured interviews with twelve instructors at a higher education institution in Hong Kong, they found that the significance of familiarity and confidence with using AI-driven teaching tools, the challenges and concerns language instructors face and the need for tailored support and professional development. The fifth domain is AI based online testing for ESP, the use of AI-based online testing in ESP assessment could improve language learning outcomes and contribute to effective teaching practices (Ningsih, F. (2023). To contribute to the previous studies, investigating the EFL students' experience of using AI as their supporting learning tools to complete their learning projects is significant. This study focuses on why and how they use AI as their supporting learning tools and what are the strengths and weaknesses of using AI to complete their learning projects. In the context of this study, the term "learning project" focuses more on writing paper for publication or thesis proposal.

LITERATURE REVIEW

The term Artificial Intelligence (AI) was first coined by John McCarthy in 1956 when he held the first academic conference on the subject, and he defined the term Intelligence as the computational part of the ability to achieve goals in the world." Intelligence might be defined as the ability to learn and perform suitable techniques to solve problems and achieve goals, appropriate to the context in an uncertain, ever-varying world. A fully pre-programmed factory robot is flexible, accurate, and consistent but not intelligent. AI is then defined as "the science and engineering of making intelligent machines". It has been widely used in various contexts, for various reasons, and in numerous ways.

Artificial Intelligence in EFL Learning

The incorporation of Artificial Intelligence (AI) in English as a Foreign Language (EFL) learning has emerged as a promising avenue to revolutionize language education. AI technologies offer a range of applications, from personalized language learning platforms to intelligent tutoring systems and virtual reality-based language immersion experiences which highlight its benefits, challenges, and potential future directions.

There are some types of AI which can be used in EFL learning. The first is AI-Powered Language Learning Platforms which have gained traction in recent years and provided learners with tailored language instruction and feedback. One notable example is Duolingo, a popular AI-driven platform that employs natural language processing (NLP) algorithms to assess learners' language production and proficiency levels (Vesselinov & Grego, 2012). Studies have shown that such platforms can effectively improve learners' language skills by adapting content based on individual needs (Garcia-Sanjuan et al., 2020). These platforms offer a dynamic and interactive learning experience, engaging learners through gamification elements and multimedia content (Liu & Wang, 2021). The second is AI-Powered Intelligent Tutoring Systems (ITS) which have shown promise in providing personalized language instruction to EFL learners. These AI-based systems utilize machine learning algorithms to identify learners' strengths and weaknesses and to deliver targeted content and exercises to address specific learning gaps (Chi & VanLehn, 2012). A study by Desmarais et al. (2016) shows that learners using an ITS achieved significantly higher language proficiency gains compared to traditional classroom instruction. ITS can offer adaptive and real-time feedback, facilitating more efficient language learning (Heilman et al., 2010). The third is Virtual Reality (VR) and Immersive Language Learning. This AI-powered Virtual Reality (VR) applications have opened new possibilities for immersive EFL learning experiences. VR technology helps learners to practice language skills in realistic virtual environments, such as conversing with virtual characters or navigating English-speaking cities (Lee & Anderson, 2018). Research indicates that VR-based language learning improves learners' speaking and listening skills and enhances their confidence in using English in real-life situations (Wang & Sun, 2019). Moreover, VR allows learners to overcome geographical barriers and engage in collaborative language learning activities (Wang et al., 2021).

Artificial Intelligence is one way has benefited, but in the other hand, it is challenging. The implementation of AI in EFL learning presents several benefits, such as personalized instruction, continuous progress monitoring, and immediate feedback (Gutiérrez et al., 2022). AI-driven platforms can cater to learners' individual needs, preferences, and learning paces, leading to enhanced motivation and engagement (Heift & Schulze, 2017). However, AI incorporating has also brought some challenges, for example concerns over data privacy and the potential overreliance on automated solutions (Ifenthaler & Schweinbenz, 2020). Educators must strike a balance between AI and human instruction to ensure learners receive holistic language learning experiences (Huang et al., 2022). Indeed, utilization of AI in EFL learning has the potential to transform language education by providing personalized, engaging, and

effective learning experiences. AI-powered language learning platforms, intelligent tutoring systems, and virtual reality applications are just a few examples of how AI is reshaping the EFL landscape. To fully harness the benefits of AI, addressing ethical concerns, striking a balance with human instruction, and advancing research in curriculum design are essential for the successful implementation of AI in EFL learning environments.

The Reasons of the EFL Students to use Artificial Intelligence to Do their Learning Projects

The immediate and personalized feedback provided by AI-driven tools is in line with the principles of Self-Determination Theory (Deci & Ryan, 1985) which state that individuals are motivated to engage in activities that satisfy their innate psychological needs for autonomy, competence, and relatedness. In the context of language learning, EFL students find chances to train their autonomy and competence in using English. AI tools that offer instant feedback allow them to monitor and evaluate their progress independently, foster a sense of control and ownership over their learning process. Thus, the first reason is that it can heighten the sense of autonomy and competence which can further motivate them to actively get involved in writing projects and take responsibility for their language development.

Secondly, referring to the Technology Acceptance Model (TAM) (Davis, 1989) which explains that individuals are more likely to adopt and use technology when they perceive it as useful and easy to use, then in the case of AI-based tools, their accessibility to a wealth of authentic English resources and their ability to overcome language barriers make them highly useful to EFL students. Therefore, the second reason is that by breaking down these barriers and providing access to diverse language materials, AI tools enhance the learning experience and facilitate a deeper understanding of the English language. Because they can recognize the utility of AI in overcoming language constraints and accessing valuable resources, they are more inclined to embrace and integrate AI into their learning projects.

The third reason is that in refer to Differentiated Instruction and Personalized Learning: AI-powered adaptive learning platforms exemplify the principles of Differentiated Instruction (Tomlinson, 1995), in a heterogeneous EFL classroom, the EFL learners can possess diverse language backgrounds, proficiency levels, and learning preferences. Traditional one-size-fits-all approaches to language instruction may not effectively address the unique needs of non-native English speakers. However, AI's capacity to adapt and tailor content to individual learners creates a more supportive and engaging learning environment. By catering to each student's proficiency level and learning pace, AI promotes a sense of inclusivity and relevance in language learning, ensuring that EFL students receive appropriate challenges and support in their learning projects.

The Ways of Using Artificial Intelligence for EFL Students to Do their Learning Projects

Artificial Intelligence (AI) offers abundant innovative ways to support the EFL students to do their learning projects like writing paper for publication or writing research proposal. One of the most prominent applications is AI-based writing assistants that provide real-time feedback and suggestions to enhance students' writing skills (Li, 2019). These writing assistants, equipped with Natural Language Processing (NLP) technologies analyze students' written work, offer corrections on grammar, vocabulary, and language usage, empower the students to improve their writing competence through continuous improvement and error correction. In addition, AI-driven language learning platforms utilize intelligent algorithms assess individual strengths and weaknesses, provide personalized content and exercises tailored to suit learners' proficiency levels and learning preferences (Fang, 2020). The implementation of adaptive learning aligns with the principles of Differentiated Instruction (Tomlinson, 1995), ensure that EFL students to receive targeted support and challenges in their learning projects. Furthermore, AI enhances language learning engagement through gamified language learning

applications, making the learning process enjoyable and immersive (Barsuoni et al., 2021). These gamified AI applications create a state of flow, motivating EFL learners to stay engaged in their learning projects and language development. Moreover, AI-powered machine translation tools facilitate access to vast language resources, breaking down language barriers and providing exposure to authentic English materials, including research papers, articles, and multimedia content (Jiang et al., 2018). As AI continues to advance, its integration in EFL learning holds great potential to revolutionize language education, providing learners with sophisticated and versatile tools to enhance their language proficiency and project outcomes.

METHOD

The method used to do this research is narrative inquiry. This is part of teaching learning experience. The subjects selected to get involved in doing this study are those who used the application of Artificial Intelligence as the supporting aids to complete their course. They were voluntarily joined this study. The data were collected through interviewing them and reading their notes conducted in July 2023. They were then qualitatively analysed through, namely data reduction, data display, and conclusion. In the reduction stage, the researcher removes unnecessary data to produce appropriate information. At the display stage, the qualitative data which are in the form statement and narrative text to make it easy to understand. Then, the researcher looks for the meaning of the data collected by looking for the phenomena of using AI in ELT which includes why and how AI products are used to help them in completing their learning projects. In addition, the data analysis was done to ferret out the strengths and weakness of using AI products as the supporting learning tools in their learning English language to conclude answers of the research problems.

FINDINGS AND DISCUSSION

The findings of this study classified into three main points, namely the reasons of using a certain product of AI that the students used as the supporting learning tools, the ways of using the AI and the strengths and weaknesses of using AI technologies.

1. *The reasons of Using the products of Artificial Intelligence*

    This study found that the EFL students encounter difficulties in some of the following steps like when they need to find framework of the related topic to be written, to develop topics of writing, to brainstorm, to paraphrase, to find additional resources, and to check grammar as well when they write research proposal. With such difficulties, to find easy and instant solution, they use Chat GPT (Chat-Generative Pre-trained Transformed), Grammarly checker, QuillBot, and perplexity as the products of AI technologies.

    To find framework of writing a research proposal, Chat-GPT is used. This is explicitly stated in the following informant's quoted statement and Picture 1 as the example:

    I, honestly, got difficulties in writing, so that I used Chat-GPT to find framework or body of paragraphs which are related to the topics that I write (*Jujur saya sendiri sih kesulitan dalam hal kepenulisan. Jadi saya menggunakan chatgpt untuk mecari framework atau tubuh paragraf yang sesuai dg topik yang ingin saya tulis) (Slg).*

Picture 1. Using Chat-GPT to find framework of writing.
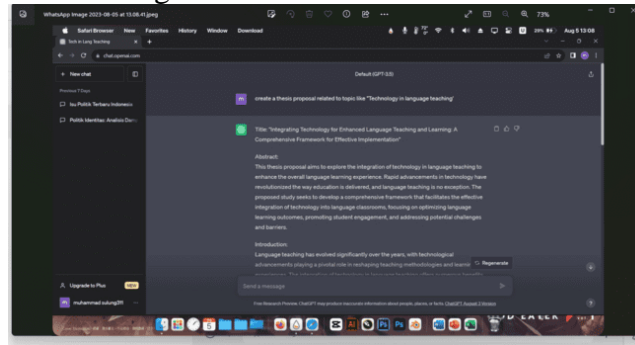
Developing topic of writing into body of text with appropriate supporting details of each subtopic in a writing outline needs certain skills of writing and sufficient knowledge and information about the topic. Thus, this lead the EFL learners to use a smart tool which can help them to develop the topic, and this is another reason of utilizing Chat-GPT during writing research proposal. This finding is seen in Picture 2 below and in this informant quoted statement. "*I think that almost 75% help me to write research proposal*" (Nisha)

Picture 2 Using Chat-GPT to develop topic into writing
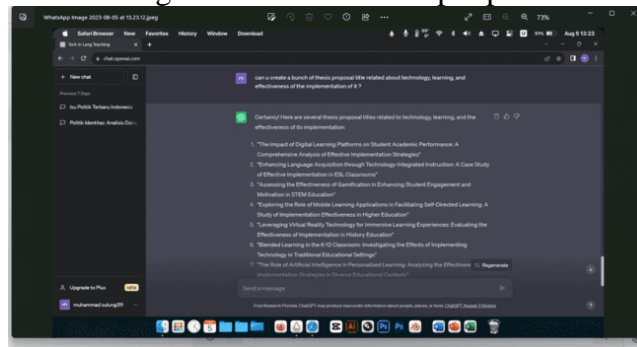
The other finding of this study is that Chat-GPT is used to brainstorms ideas about the topic that the EFL learners selected to be written for their thesis proposal. This is proved in Picture 3 and is explicitly stated in the informant's quoted interview:" I utilize Chat-GPT at about 60 % to brainstorm- specifically in writing. (*Saya menggunakan chatgpt untuk hampir 60% untuk keperluan brainstorming, terlebih dalam urusan kepenulisan*)." *(Slg).*

Picture 3 Using Chat GPT to brainstorm ideas about the topic
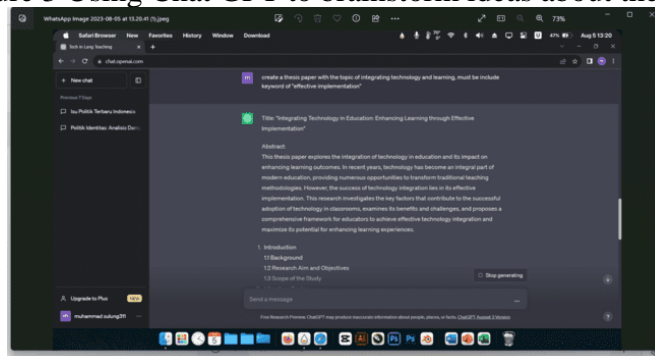
The result of this study is parallel to some previous studies indicating that Chat GPT is as the potential aid for students in staying engaged with the course material and feeling more connected to their learning experience (Fuchs, K. (2023, May), help students better understand concepts they are struggling with by providing customized, interactive explanations (Kalla & Smith, 2023), to help students to generate writing prompts, provide feedback and revision suggestions, and offer writing assistance (Abdullayeva & Musayeva, 2023, April).

This study also found that the EFL students use another brilliant product of AI, namely QuillBot to help them to paraphrase. Paraphrasing is one out of several ways to avoid from plagiarism. This finding is stated clearly in the informants' quoted interview: I use QuillBot to paraphrase. *Saya menggunakan quilbot untuk parapfase (Slg).* It is experienced to be very meaningful tool to paraphrase as written in this informant' quoted interview: *"QuillBot is very helpful in paraphrasing a sentence."* (Siti) and proved in Picture 4

Picture 4. Using QuillBot to paraphrase
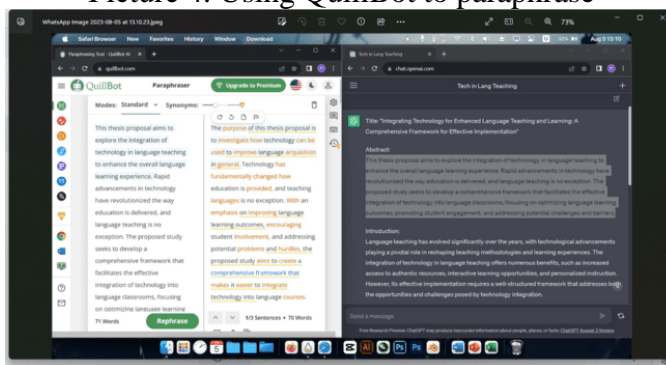
This finding is related to one found by some previous studies stating that this Quillbot, an AI based tool, proved to be able to assist with the EFL students' paraphrasing tasks and improve their language development (Xuyen, 2023), rewrite any content based on a state-of-the-art AI system and provide a solution when they do not have the idea to manually paraphrase English writing (Fitria, 2021), and improve their writing products as well (Syahnaz & Fithriani, 2023)

To develop ideas and to enrich the content, support the arguments, ensure the accuracy and credibility of a writing, and to deliberately discuss the focus of writing, a writer needs to find additional resources. It is also useful to create a qualified writing product. Concerning with this matter, this study found that an ingenious AI technology, namely perprexity.ai is used to find additional resources. This is clearly demonstrated in this informant's quoted narration: "…I want Perplexity.AI to find me any additional resource of my research paper. based on the quick search the number 1 is where Perplexity.AI cited the most. "(Slg). Picture 5 supports this statement.

Picture 5. Using Perplexity to search additional resources
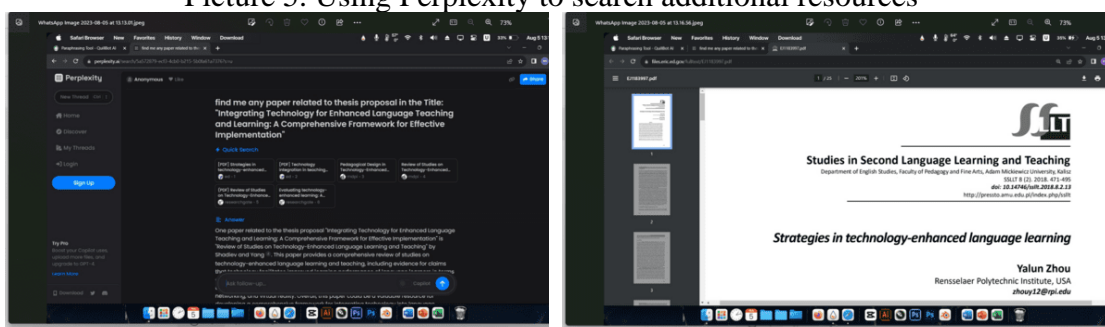
Another reason of using AI technology is to check the grammar use in the EFL students' writing. The intelligent product of AI tech to do the instruction is Grammarly Checker. This finding is revealed from the informant's quoted statements below and demonstrated in Picture 6:

  "It help me to correct my grammar error in my research proposal." (Anis)
  "It can help me improve my spelling, grammar and can help me ensure that my
  proposal is accurate, free of grammatical errors". (Devi)

Picture 6 Using Grammarly to check grammar use.
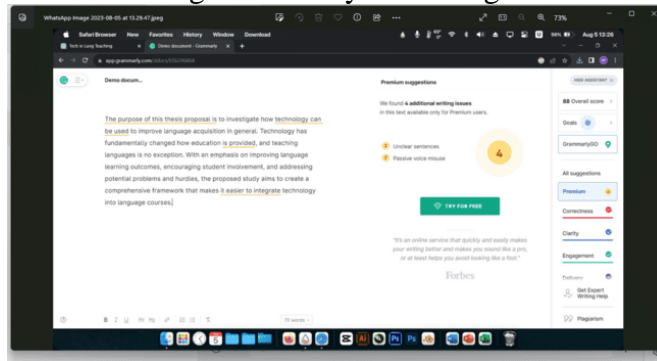
The finding of this present study strengthens several previous studies revealing that Grammarly can assist them in checking their grammar, punctuation, and spelling. Besides, the feedback of Grammarly can help them to improve their grammar (Pratama, 2021), to improve writing more effectively and efficiently (Perdana & Farida, 2019), and improve students' motivation to make corrections (O'Neill, R., & Russell, A. M. (2019). However, a study by Park, J. (2019) indicates that the grammar checker disclosed the wrong feedback, same and different feedback compared to the human raters. Yet, it sheds light on the possibility of applying AI-based computer programs in EFL classroom.

The gamified language learning applications mentioned in the paragraph align with Flow Theory. According to Csikszentmihalyi (1990), flow is a state of optimal engagement where individuals experience deep concentration, enjoyment, and a sense of being in control during an activity. Gamified AI applications, by incorporating elements of challenge, interactivity, and immediate feedback, can induce a state of flow in EFL learners. In this state, learners are highly motivated and fully immersed in the language learning process, making it more likely for them to stay engaged in their projects and continue their language development.

Artificial Intelligence (AI) has revolutionized the educational landscape, offering a wide range of products tailored to support English as a Foreign Language (EFL) students in their learning projects. One of the prominent AI-powered tools is natural language processing (NLP), which enables language learners to improve their writing skills through automated analysis of grammar, vocabulary, and sentence structure. NLP-based applications, such as grammar checkers and writing assistants, provide real-time feedback to EFL students, helping them identify and correct errors as they work on their learning projects.

The application of NLP in educational contexts has been supported by theories such as the Interactionist Theory of Second Language Acquisition, which emphasizes the importance of meaningful interactions for language learning (Long, 1996). AI-driven writing assistants engage learners in interactive tasks, allowing them to practice language use and receive immediate corrective feedback, aligning with the tenets of this theory.

2. *The ways of using the products of Artificial Intelligence*

The findings of this present study indicates that the EFL students are not immediately and merely use AI to assist them complete their project. This can be seen in this informant's quoted statement: *"After I wrote my research proposal, I check the grammar in AI (grammarly) and I revise it if I'm wrong." (Anis). The smart applications of* AI tech are used as the supporting tools to assist them completing their project of writing research proposal. They do not fully rely on the machine but utilize it to search for prompt information and feedback. The steps of using the resourceful and bright machines of AI tech follow the steps suggested by the standard operating system of those machines. Like the one presented by the informant below:

"First, I type the keywords. then Bingchat will show the references and I will download and read them. sometimes I explain what I really search and want to know about my research information to the Bingchat" (Dzaw)

The ways of utilizing AI are simple. First open chat,openai.com, then sign up to create your account. Then login and just write your instruction. Then wait for AI to work for you. (Slg) *(Cara penggunaannya itu tergolong simpel. pertama, masuk ke laman chat.openai.com. Lalu daftarkan akun anda atau tinggal masuk saja bagi yang punya akun, masukkan perintah di kolom prompt. tunggu AI nya bekerja, jadi)." (Slg)*

3. *The strengths and weaknesses of using the products of artificial Intelligence.*

The products of AI tech demonstrate some strengths like helping the learners to do the writing project, improve their English skills, enhance EFL acquisition, and make them get ease and joy in their learning English. One of the informants stated that *"AI help me to know if I wrote something wrong in my research proposal. It also support me and makes me more easier to revise my research proposal if I have grammar error in my research proposal."*(Anis). This implies the ease which further leads to the joy of the EFL learning. This study found that the EFL students declare positive responses about utilizing and incorporating AI into their learning exercises.

"In my perspective, They can build vocabulary, study grammar, and practice conversational skills with AI chatbots. Not only that, AI writing tools can help me boost my writing skills. These tools can help me spot grammatical and spelling mistakes I make while writing. They can also offer suggestions for rectifying errors and enhancing sentence structure. I can even get feedback regarding my vocabulary use and get various synonyms to diversify my word choice. In short, AI applications have been of greatest benefit to me." (Siti)

"AI application can be used to help students with a variety of tasks, such as pronunciation, vocabulary, and grammar It can also help students learning English." (Defi)

The use of AI-powered applications that provide personalized learning experiences and interactive language practice aligns with Experiential Learning Theory ((Kolb, 1984) stating that learning will be most effective when it involves a cyclical process of concrete experience, reflective observation, abstract conceptualization, and active experimentation. Meanwhile, AI platforms that offer adaptive exercises and real-time feedback allow EFL learners to get involved in hands-on language practice, reflect on their language use, conceptualize language rules, and experiment with their newly acquired knowledge in writing projects. This experiential approach enhances language acquisition as learners actively engage with the language in a meaningful context.

Besides the strengths, this study found that some products of AI tech like Chat GPT have limitation that it is a language model and lacks true comprehension and understanding of the information it processes. It generates responses based on patterns in the data it was trained on, without genuine insight or awareness. As being stated by the informant below that:

" From observing behavioural patterns, I realized the limitations in the database, as well as the limitations in its text features, which led me to search for additional writing materials outside ChatGPT. I usually combine the generated text from ChatGPT and incorporate it into my own writing, then rewrite it using an online

paraphrasing website. If I still feel unsatisfied with the results, sometimes I rewrite it again and input the text into Grammarly's platform to check its language structure." (Slg).

This finding supports the one by Lee & Choi (2023). ChatGPT still has many limitations for widespread use in clinical research, owing to AI hallucination symptoms and its training data constraints.

CONCLUSION AND SUGGESTION

The results of this research indicate some significant points. This first is that AI technology with its numerous products like ChatGPT, Grammarly Checker, QuillBOT, and Perplexity.ai have made the EFL learners get some ease and joy in learning, because it can assist them to find framework of writing, to find topic of writing or writing research proposal, brainstorms ideas, to paraphrase, to find additional resources, and the check grammar error made by students. Even, using AI tech is also entertaining because they can play while learning English. The second is that the EFL students are not solely dependant on AI tech when doing their projects like writing research proposal or paper for publication. They consider the products of AI tech as the supporting learning tools, so that they can incorporate more than one product of AI like Chat GPT, Grammarly, QuillBOT, and perplexicy.ai interchangeably to complete one project of writing research proposal. The third is that the EFL students are aware of the limitation of each product of AI, so that they need to be more creative in incorporating their own ideas with the ones resulting from the AI machines to complete their writing or doing any projects of learning. More importantly, it is important to consider how to use this technology more ethically and responsibly, and to work alongside this technology to improve their works rather than to abuse it.

This study is limited to practices of the EFL students in utilizing AI tech to do their learning projects, like writing research proposal. To further contribute to the integration of technology in the EFL teaching and learning, then, it is suggested that there are several areas for future research and development in the use of AI in EFL learning. Ethical considerations and guidelines for responsible AI use in educational settings need to be established to safeguard learners' privacy and data security (Knight, 2020). Moreover, integrating AI into curriculum design can lead to more adaptive and personalized language learning programs (Li & Zhao, 2019). Hybrid models that combine AI technologies with human instruction hold promise in leveraging the strengths of both to optimize language learning outcomes (Wu et al., 2021).

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