



The use of Copilot, Gemini and ChatGPT in the context of foreign language learning and teaching: An academic technology review

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ABSTRACT

Background: This technology review provides an overview about the theoretical background of using artificial intelligence (AI) and large language models (LLMs) in language teaching and learning, namely the generative AI chatbots Copilot, Gemini, and ChatGPT.

Objective: The aim of this review was to provide the users with a critical and analytical overview of the affordances these tools can provide.

Methodology: Technology review.

Results: It demonstrates the advantages of these three applications by introducing actual variations of the real use in language learning by using three specific prompts in relation to language writing including revising the style of writing, vocabulary use, grammar check, and references. The readers will thus be provided with a critical hands-on synopsis of the possibilities of these three tools widely used in the global world.

Conclusions: Discussion of the results gained and implications of using these three applications are finally covered so that it is clearer how these tools can be implemented. However, the article also calls for an in-depth analysis of these tool regarding the potential pitfalls related to increased screen time, cognitive impacts and potential addiction.

Keywords: artificial intelligence, higher education, LLM, language learning, language teaching

INTRODUCTION

It is essential to research the theoretical underpinnings of artificial intelligence (AI) applications such as Copilot, Gemini, and ChatGPT in language learning and instruction for a number of reasons. It enables teachers to successfully incorporate AI into their teaching practices by assisting them in comprehending the fundamental ideas and workings of these tools (Alhusaiyan, 2024; Kohnke et al., 2023). This information also makes it possible to create evidence-based tactics that can improve engagement and learning results (Manire et al., 2024). Additionally, by comprehending the theoretical facets, ethical issues like prejudice and data privacy can be addressed, guaranteeing the proper application of AI in educational contexts (Macinska & Vinkler, 2024). Through the establishment of strong theoretical foundations for AI applications, educators may better equip students for a future in which AI will be integral to many facets of life (Al-Kadi & Ali, 2024).

It is essential to comprehend how Copilot, Gemini, and ChatGPT differ from one another when it comes to language learning and teaching because each AI application has special features that can improve the

learning process in different ways (Rossetini et al., 2024). Microsoft Copilot is perfect for writing, data analysis, and coding work since it integrates well with productivity tools Wang et al.'s (2024). With its multimodal capabilities, which include processing and producing text, graphics, audio, and video, Google's Gemini stands out. This makes it very helpful for developing interactive educational materials. With its well-known natural language comprehension and conversational skills, OpenAI's ChatGPT (an AI research organization that developed the GPT series of language models, including GPT-4) is ideal for improving communication and giving immediate feedback (Al-Obaydi et al., 2025; Banihashem et al., 2024; Derakhshan & Ghiasvand, 2024; Klímová et al., 2024; Kohnke et al., 2023). By being aware of these variations, teachers may decide how to use each tool most effectively to raise student achievement.

This study examines how Copilot, Gemini, and ChatGPT can transform educational practices by offering individualized learning experiences, automating repetitive tasks for teachers, and enhancing the interactive and engaging nature of the learning process. It is imperative that educators and learners understand the workings of AI and its derivatives, such as the development of machine learning, cognitive computing, natural language processing (NLP), deep learning, and neural networks in learning processes (Tlili et al., 2023). By providing top-notch materials and assistance, especially in under-resourced locations, these tools can aid in closing educational disparities (Al-Kadi & Ali, 2024; Frey & Osborne, 2024; Ganesan, 2024; Kohnke et al., 2023; Wang et al., 2024). Although the expanding body of research on AI in education has enumerated a number of advantages, some academics have questioned the idea of giving computers and other robots the role of instructors (Humble & Mozellus, 2019). According to Wogu et al. (2019), creating strong background for teachers that is in line with these technological developments is the optimal solution which is in line with Pikhart et al. (2024) who suggested addressing the use of technology in the classroom by relying on the preferences and satisfactions of both teachers and students.

The goal of the current technology review is to provide a thorough analysis of the potential applications of these three generative AI (GenAI) tools; Copilot, Gemini, and ChatGPT in educational contexts, namely in language teaching and learning. Exploring the possible advantages, difficulties, and creative ways that these AI tools can improve the teaching and learning process is the justification for this study. The review intends to shed light on how these tools can facilitate interactive learning, individualized instruction, and better educational results by examining scholarly literature and real use of these applications. The emphasis on an academic technology evaluation suggests a methodical way to assessing these AI products' impact and efficacy in educational settings. In addition, the present study could help teachers and researchers choose the suitable AI application by demonstrating the way of analysis each application present.

The Design of the Study

The present study adapts academic technology review. An academic technology review usually entails a methodical analysis of data, papers, and research projects pertaining to the usage of technology in classrooms (Hew et al., 2019). The purpose of this kind of reviews is to assess the trends, effects, and efficacy of integrating technology into teaching and learning procedures (Kimmons, 2020). Generally, a technology review deals with a specific technology, product, service, or solution in order to evaluate or analyze. This evaluation assesses a number of factors, including but not limited to; features, performance, usability, design, and how effectively the technology satisfies the needs of its target audience. In addition to that, overview and purpose, features and capabilities, usability and user experience, pros and cons, comparison, and final recommendation are some of the main elements that are usually included in a technology review. In the present technological review, we try to provide a general overview of the theoretical underpinnings of the use of GenAI chatbots, specifically Copilot, Gemini, and ChatGPT, as large language models (LLMs) in language teaching and learning.

LITERATURE REVIEW: GenAI AND LLM IN LANGUAGE LEARNING

GenAI is a subset of AI that includes models and algorithms that can produce new forms of media, including text, images, music, and more, based on patterns and data they have been trained on (Akhtar, 2024). GenAI models comprehend and produce material that is similar to that of humans by utilizing methods such as deep learning and neural networks. Applications for them range from entertainment and art to education and scientific research since they may provide unique and imaginative outputs that resemble human creation

(Son et al., 2023). Examples of GenAI models are DALL-E, which creates visuals from textual descriptions, and OpenAI's GPT-4, which is utilized in programs like Microsoft Copilot and Gemini (Alkadi & Ali, 2024).

LLMs and GenAI are closely related but not the same. The term "GenAI" refers to a more general category that includes a variety of AI algorithms that may produce new material, including writing, graphics, music, and more, using the data they have been trained on (Akhtar, 2024). However, LLMs are a particular kind of GenAI that is devoted to producing and comprehending human language. Not all GenAI models are LLMs, even if all LLMs are a component of GenAI (Jeon & Lee, 2023). For instance, models that produce music or images which fall outside the purview of LLMs' expertise in language generation can also be included in GenAI. Essentially, LLMs are a subset of GenAI that specializes in tasks involving language.

Notably, GenAI has been progressively incorporated into language programs across a number of frameworks and models. Crompton and Burke (2024) contended that GenAI models maintain student attention and revitalize their educational experience since they are primarily customized to serve a variety of goals that may satisfy the needs of particular students. According to Ali et al. (2023) and Nugroho et al. (2023), AI-based models enhance interactive and captivating learning experiences, improve knowledge retention abilities, and offer immersive language learning settings. Understanding how AI models help language learners acquire the target language is made possible by research on AI-based language learning (Kirana & Gupta, 2022). Numerous answers to the current academic problems have been made possible by the development and penetration of AI into the field of education (Derakhshan et al., 2024). According to Pedro et al. (2019), the integration of AI into educational settings is expected to revolutionize education in the future by promoting individualized and flexible learning experiences, equal educational opportunities for minority groups, and the creation of a dual-teacher model where teachers focus on one-on-one interaction rather than routines.

Through the creation of information that is dynamic and engaging, immediate feedback, and tailored learning experiences, GenAI significantly contributes to language teaching and learning (Creely, 2024). It encourages student autonomy and diversity, increasing educational accessibility for students with a range of requirements (Szabó & Szoke, 2024). Additionally, GenAI assists teachers with effective differentiation of education and the creation of customized teaching resources. Nonetheless, it is vital to tackle issues like upholding academic honesty, guaranteeing precision, and steering clear of excessive dependence on technology (Ali & Muhammed, 2024). Teachers can promote a more inclusive and stimulating learning environment while improving language acquisition and literacy by carefully utilizing GenAI as a technology integration (Tawafak et al., 2023, 2024). By carefully incorporating GenAI into teaching methods, teachers can build a more productive and inclusive classroom that gets students ready for a world where AI will be essential.

LLM-based GenAI gained widespread attention in November 2022 after a trial version of the chatbot ChatGPT was made available. The GPT-3 neural network, which has 175 billion potential parameters and was trained on 300 billion words, was used by OpenAI to create ChatGPT (Hughes, 2023). LLMs, machine translation, and text generation are just a few of the domains where LLMs have become highly effective tools (Jeon & Lee, 2023). Because they can comprehend and produce human-like material, these models like OpenAI's GPT-3 and 4 (an LLM created by OpenAI, capable of generating and understanding human-like text) (Ouyang et al., 2022) are extremely useful for academic writing assignments (Wen et al., 2024).

The inputs and outputs of earlier AI generations were frequently fairly clearly defined. The majority of earlier AI generations were task-specific, which means they were made to carry out certain tasks like solving particular kinds of issues or playing chess (Jeon & Lee, 2023). Structured data and preset rules were key components of these AIs (Brown et al., 2020). An AI that can play chess, for instance, would be educated using the game's rules and several previous game situations. In contrast, the capabilities of the most recent generation of GenAI models, which make use of LLMs, have significantly increased. The sophisticated processing and orchestration system seamlessly integrate the capabilities of LLMs, such GPT-4, with organizational data found in the Microsoft Graph and Microsoft 365 apps. Natural language interfaces have made this integration available to all users (Scholl, 2024). Often compared to neurons in the brain, these models have billions of parameters and are trained on a wide range of data. Because of their training, they are extremely adaptable and can comprehend and produce text that is similar to that of a person (Saxena et

al., 2024). With billions of neurons, the latest generation of GenAI employing LLMs is more comprehensive and capable of handling unstructured tasks. Simple user prompts can inspire creative output from ChatGPT and related LLMs, which can also provide unstructured outputs like news releases, student essays, computer code, music, and artwork (Sommers, 2023). They have made significant progress in handling unstructured workloads. A vast range of content can be produced with basic user prompts (Brown et al., 2020; Sommers, 2023), including provide succinct synopses of long texts, write creative works like novels and poems, help with technical writing by creating and debugging code, and assist with document composition for academic and professional purposes. LLMs are also quite good at crafting emails, translating languages, suggesting content, and giving clarified and instructive responses. Along with comprehensive data analysis, they can also provide design advice and presentation suggestions. Because LLMs can increase creativity and productivity, they simplify a variety of activities, which makes them useful in a wide range of fields.

The main benefits of LLMs, which vary in scope and potential, are in motivating and engaging learners, personalizing learning, providing immediate evaluation and feedback, and enhancing formal learning. These functions are all interconnected and contribute to effective learning, according to Crompton and Burke's (2024) argument. AI in education has the potential to significantly transform individualized learning (Hwang et al., 2023). In a simulated real-world setting, they allow students to practice speaking (Pratschke, 2024), writing (Seo, 2024; Yang et al., 2024), and understanding contexts of the real world. Numerous studies have mapped out the potential of LLMs over the past three years, constantly showing beneficial effects on teaching and learning English (Augustini, 2023; Barrot, 2023; Derakhshan & Ghiasvand, 2024; Esfandiari & Allaf-Akbary, 2024; Lee, 2024; Moqbel & Al-Kadi, 2023; Pack & Maloney, 2023; Son et al., 2023; Wang et al., 2024). These studies repeatedly show that LLMs can produce dynamic and interesting educational content, offer individualized learning experiences, and provide prompt feedback. LLMs have been demonstrated to enhance students' language proficiency through more efficient and immersive practice, individualized education based on needs, and assistance for teachers with automated lesson planning and grading. This research mostly examined how well LLMs develop language skills by contrasting the results of AI-supported learning with those of conventional techniques. According to earlier research, LLMs typically promote improved grammatical comprehension, vocabulary growth, conversational abilities, and pronunciation.

The synopsis of the studied AI tools (Copilot, Gemini and ChatGPT) is as follows:

Copilot

Microsoft's Copilot System (an AI assistant integrated into Microsoft 365 applications [such as Word and Excel], which leverages LLMs to support productivity and writing tasks) makes it uniquely suited to offer enterprise-grade AI. Copilot is a complete solution for organizational demands that goes beyond how OpenAI's ChatGPT is integrated with Microsoft 365 (Panini, 2024). Microsoft 365 is a suite of productivity tools (Word, Excel, PowerPoint, Outlook, etc.) into which Copilot is embedded. The AI-powered assistant Microsoft Copilot is included in Word, Excel, PowerPoint, Outlook, and Teams, among other Microsoft 365 applications (Williams, 2024). To help users with tasks like creating documents, analyzing data, creating presentations, and writing letters, it makes use of sophisticated language models, including OpenAI's GPT-4 (Paoli, 2024). Copilot streamlines repetitive activities, offers data insights, and fosters creativity by recommending enhancements to writing, design, and content (Klímová et al., 2026; Rama, 2024). Users may work more productively and creatively while saving time on tedious activities thanks to its smooth connection with other Microsoft programs (Williams, 2024).

Microsoft Copilot has many advantages when it comes to language acquisition. It can help students write essays, translate materials, and improve students' level of grammar and vocabulary by using sophisticated language models (HelloCappuccino, 2024). It makes it simpler for users to advance their language proficiency and develop writing confidence by offering real-time feedback and recommendations (Microsoft Education Team, 2024).

In relation to language learning and teaching context, Copilot can be a useful tool for teachers creating dynamic and captivating language classes. It can produce reading materials, tests, and exercises that are specifically designed to meet the needs of each learner. Teachers can find and fix frequent language faults with the aid of Copilot's text analysis and insight-giving capabilities.

Additionally, Copilot facilitates collaborative learning by allowing students to collaborate on projects and presentations while providing feedback to enhance coherence and clarity. Students can learn from one another and get fast feedback in this interactive learning environment (HelloCappuccino, 2024).

By encouraging creativity, offering individualized help, and streamlining and improving the learning process, Microsoft Copilot improves the language learning experience (Microsoft Education Team, 2024). There has been much debate about the use of AI in language instruction, as seen by programs like Microsoft Copilot. Since its inception, Microsoft Copilot has been an indispensable tool in educational environments, and its ongoing advancement is evident (Pan, 2024). Because of this, it is crucial to comprehend the impact and educational potential of AI.

Very few articles deal with Copilot experimentally in language teaching context such as Esfandiari and Allaf-Akbary (2024), Klímová et al. (2026), and Groves et al. (2024). The study of Esfandiari and Allaf-Akbary (2024) probably focuses on how Copilot improves learning and the educational process. Copilot's integration of AI technology facilitates work optimization, enhances writing and research abilities, and promotes a deeper comprehension of intricate subjects for both educators and students. They added that AI-enhanced platforms, such as Microsoft Copilot, enable language learners to practice their language skills from anywhere at any time. By encouraging students to take charge of their education, this degree of accessibility promotes independence and self-management. The potential advantages and difficulties of using Microsoft Copilot for English for academic purposes paraphrase tasks are examined in Groves et al. (2024) exploratory study. Recognizing that AI apps like Copilot, Gemini, and ChatGPT are part of a quickly changing technology ecosystem rather than static tools is crucial. According to Klímová, Pikhart and Al-Obaydi (2026), the potential of educational technologies is growing and changing, necessitating constant critical analysis. Because of this dynamic evolution, the comparative affordances found in this study may change over time, highlighting the necessity of openness and flexibility in research as well as instructional practice.

According to the study, Copilot can help students become better paraphrasers by giving them new ways to communicate their thoughts. It also highlights certain drawbacks, like relying too much on the technology and the possibility of producing erroneous paraphrases. Alkadi and Ali (2024) dealt with in a review about AI applications without many details about it. Through the provision of interactive content, feedback, and educational resources, this study investigates how GenAI tools such as Copilot can improve English language instruction. Wang et al.'s (2024) is another pertinent study supported by Stanford University. It intends to show how Copilot can give tutors expert-like feedback and enhance student learning outcomes, this study presents a randomized controlled trial with 1,800 K-12 students and 900 tutors. According to Barrot (2023), Microsoft Copilot is a trustworthy writing tool that can give students real-time feedback as they progress through different writing stages. Rossetini et al. (2024) also used Microsoft Copilot among other AI applications for the entrance exam for degrees in healthcare sciences. These studies demonstrate how Copilot may revolutionize language instruction by improving teaching efficacy and providing individualized help. Only these articles are found in relation to the use of Copilot in the context of teaching generally and language teaching and learning specifically. It is worth mentioning that no one of these previous studies dealt with Copilot theoretical background but they all dealt with it among other applications without specific mentioning.

Gemini

Gemini (Google's family of LLMs, developed jointly by Google DeepMind and Google Research), a cutting-edge AI tool created by Google's DeepMind (a research laboratory within Google focused on advanced AI) and Google Research AI research laboratories (Google's broader AI research division, collaborating with DeepMind on Gemini) is intended to increase production and inventiveness by offering real-time support, suggestions, and insights across several platforms (Google DeepMind, 2024). Gemini's multimodal features allow it to process and produce text, images, audio, and video, making it adaptable to a variety of jobs like text editing, data extraction, and code generation (Google AI for Developers, 2024; Klímová et al., 2026).

Gemini 2.0 Flash Experimenters improved performance, which supports complicated reasoning tasks and allows for low-latency conversational engagements, brings features including the use of native tools, the production of images, and speech (Google Cloud, 2024). Along with promoting collaborative learning by enabling students to collaborate on projects and presentations, Gemini also makes learning more interactive

by creating customized reading materials, assessments, and exercises (Google AI for Developers, 2024). With its real-time feedback and suggestions, Gemini helps users become more proficient in language, boost their writing confidence, and stimulate their creativity by providing ideas and inspirations (Google DeepMind, 2024).

In relation to the context of language learning and teaching, Gemini improves language instruction and learning by automating repetitive processes and offering individualized assistance (Klímová et al., 2026). It can produce thorough lesson plans, make tests, simplify difficult texts, and provide immediate feedback, all of which help to make language learning more interesting and approachable (Google DeepMind, 2024). By adjusting lessons to meet the needs of each individual student, Gemini also promotes differentiated instruction. Additionally, Gemini encourages collaborative learning by letting students collaborate on projects and presentations. In the end, this participatory method makes the learning environment more effective and inclusive by assisting students in developing their language abilities, writing confidence, and creativity (Google Cloud, 2024).

Gemini AI has been the subject of experimental research in relation to language teaching and learning. A group of researchers (LearnLM Team et al., 2024) conducted a noteworthy study that examines how Gemini can be enhanced for instructional objectives by implementing pedagogical instruction. This enables the model to be in line with learning principles and offer more effective learning and teaching initiatives. Smith and Lee (2024) have another pertinent study who clarify the potential of Gemini as a teaching tool, its versatility, and its use in creating engaging and dynamic learning environments are covered in this review. By offering individualized, flexible, and engaging learning experiences, these studies demonstrate Gemini AI's promising potential to revolutionize language instruction.

ChatGPT

In terms of language applications, ChatGPT's (an application interface built on GPT-4, designed to provide conversational interaction with users) strong NLP capabilities mark a major AI breakthrough. Given the context and subtleties of a conversation, it is able to comprehend and produce texts that is human-like (Roose, 2022). This makes it possible for it to have insightful discussions, give thorough explanations, and support creative writing (Farrokhnia et al., 2023; Rudolph et al., 2023). From customer assistance and education to content production and interactive storytelling, ChatGPT's capacity to comprehend context and produce responses that are logical, pertinent, and contextually appropriate makes it a flexible tool for a variety of uses and with different skills (Al-Obaydi et al., 2025; Susnjak, 2022). In a variety of fields, its advanced language model demonstrates how AI can improve communication and offer tailored support.

Like other technological advancements, ChatGPT has been seen as having both positive and negative effects on education in general and L2 education specifically (Klímová et al., 2026). The advantages and drawbacks of an AI-powered tool have been the subject of extensive investigation recently. In language education context, the main benefit of ChatGPT in language learning is its capacity to include students in natural and engaging dialogues (Kohnke et al., 2023), improving their writing and speaking abilities (Yan, 2023). With the help of its immediate feedback on language usage, learners may swiftly fix errors and advance their ability (Banihashem et al., 2024). ChatGPT can mimic real-world conversations, which makes language practice more immersive and useful (Klímová et al., 2024). It can help numerous students at once thanks to its scalability, providing individualized support based on each student's unique learning requirements (Bin-Hady et al., 2023). Additional advantages of ChatGPT for education include its capacity to provide instantaneous, real-time feedback, foster self-reflection, could manage large number of students in online exams (Al-Obaydi et al., 2023), and be affordable for all students (Baidoo-Anu & Ansah, 2023; Lo, 2023). With these qualities, ChatGPT is a useful tool for developing engaging and successful language learning programs.

Despite all of ChatGPT's advantages, there are still some significant drawbacks for education, especially when it comes to learning a second language. Academic integrity is a serious issue since it might compromise learning and academic integrity when students utilize ChatGPT to finish assignments or tests (Kim & Kwon, 2023). As students depend more on AI-generated answers than on their own understanding, this can result in a loss of critical thinking and problem-solving abilities (Mogavi et al., 2024). Furthermore, too much dependence on technology might limit opportunities for human connection and tailored teacher feedback two things that are essential for language learning (Al-Obaydi et al., 2023). The possibility of sustaining social

injustices and biases in AI-generated content raise further ethical questions (Javier & Moorhouse, 2023). To guarantee the efficient and appropriate use of ChatGPT in education all these issues must be resolved by providing available solutions that are in hand of all users. Teachers should incorporate AI literacy into their curricula to help students comprehend the value of academic integrity and the ethical application of AI (Pikhart & Al-Obaydi, 2025). Academic dishonesty can be deterred by institutions implementing plagiarism detection systems. It is crucial to promote a balanced approach to AI in which technology enhances rather than replaces human connection. On the other hand, and in order for teachers to use AI technologies in the classroom effectively, continuous training should be offered, and developers should work to reduce biases in AI algorithms. Teachers and students can successfully utilize ChatGPT's educational advantages while reducing any potential negative effects by putting these solutions into practice, guaranteeing a fair and moral approach to AI integration in the classroom.

PRACTICAL AFFORDANCES OF USING COPILOT, GEMINI, AND ChatGPT

Gemini, ChatGPT and Copilot all have unique benefits that meet various requirements. For professional productivity, Microsoft Copilot is perfect since it effortlessly connects with Microsoft 365 apps and offers real-time help with tasks like coding, writing, and data analysis. The multimodal features of Google's Gemini, which processes and generate text, images, music, and video, are especially helpful for creative and instructional uses. Known for its ability to comprehend and generate natural language, OpenAI's ChatGPT is ideal for problem-solving, creative writing support, and discussion. In different ways, each instrument improves learning, creativity, and productivity.

We used a comparative design based on standardized prompts to research the useful affordances of Copilot, Gemini, and ChatGPT in foreign language learning. The main source of information was the outputs produced by each application. Revision, vocabulary use, grammar check, and referencing are the three prompts that were chosen because they are essential to academic writing and language acquisition. After submitting each query to the three applications with their default settings, the outputs were gathered and arranged in tables for methodical comparison. Accuracy, clarity, and instructional relevance were the main focuses of the analysis, which ensured transparency and made it possible for future research to be replicated.

Using Copilot, Gemini, and ChatGPT to improve language skills could show some similarities and differences. In order to provide a clear picture about the use of these three applications, three prompts in relation to language writing, including revising, vocabulary use, grammar check, and references are chosen to clarify and compare the results in the three applications. **Table 1** shows the replies of the three applications to the first prompts. The authors prepare little text to be used with all prompts.

Table 1. The replies of the three applications to the first prompt

Copilot	Gemini	ChatGPT
Can you rewrite this text more politely and determine my weak expressions?	Can you rewrite this text more politely and determine my weak expressions?	Can you rewrite this text more politely and determine my weak expressions?
Certainly! Here is your text rewritten more politely: "AI literacy is essential for university students as it enables them to use and comprehend AI technology effectively. This understanding enhances their problem-solving skills and boosts their employability. Additionally, it ensures they have a responsible grasp of AI's impact on society. Such knowledge prepares them for a future where many careers will be heavily reliant on AI. Moreover, AI skills can lead to innovative projects and solutions, providing	Certainly, let's rewrite the text with a more polite and nuanced tone. Here's the revised version: *** Developing AI literacy is paramount for today's university students. It empowers them to effectively utilize and comprehend artificial intelligence technologies. By cultivating an understanding of AI, students enhance their problem-solving abilities and significantly increase their employability in the modern workforce. Furthermore, it fosters a responsible awareness of AI's profound impact on society. This knowledge equips them for a future where many professions will be heavily reliant on AI-driven advancements. Moreover, AI proficiency can catalyze creative endeavors and innovative solutions, providing students with a distinct competitive advantage in the job market. An understanding of AI also opens doors to exciting and rewarding career opportunities across a diverse spectrum of industries. *** Here are some of the weak expressions in the original text and how they	Certainly! Here's a more polished and politer version of your text, along with an analysis of weak expressions: Revised version: AI literacy is becoming increasingly important for university students, as it enables them to effectively use and understand AI technologies. A solid grasp of AI enhances critical thinking and problem-solving skills, while also boosting employability. Furthermore, it ensures that students develop a responsible awareness of AI's societal impact. This knowledge will prepare them for a future where many careers will depend heavily on AI. In addition, AI competencies foster creativity and innovation, providing students with a competitive edge. Moreover, understanding AI opens up exciting career opportunities across a wide range of industries. Weak expressions and suggestions for improvement: 1. "AI literacy is crucial for university students."

Table 1 (Continued).

Copilot	Gemini	ChatGPT
<p>students with a competitive edge. Familiarity with AI also opens up exciting career prospects across various industries.”</p> <p>Weak expressions in the original text:</p> <ol style="list-style-type: none"> 1. “thanks to it”–This can be rephrased for clarity. 2. “Additionally, it guarantees that”–The phrasing can be smoother. 3. “which will provide pupils a competitive advantage”–The term “pupils” is better replaced with “students” for consistency. <p>I hope this helps! If you need further refinement or have any other requests, feel free to ask.</p>	<p>were improved:</p> <ul style="list-style-type: none"> ◦ “crucial for university students”: Replaced with “paramount for today’s university students”–This emphasizes the critical importance with a more sophisticated term. ◦ “They learn to use and comprehend AI technology”: Replaced with “It empowers them to effectively utilize and comprehend artificial intelligence technologies”–This highlights the enabling nature of AI literacy and uses more formal terminology. ◦ “Understanding AI improves problem-solving skills”: Replaced with “By cultivating an understanding of AI, students enhance their problem-solving abilities”–This adds a touch of sophistication and clarifies the relationship between AI understanding and skill enhancement. ◦ “increases one’s employability”: Replaced with “significantly increase their employability in the modern workforce”–This emphasizes the significant impact on employability and provides context by specifying the modern workforce. ◦ “Additionally, it guarantees that they have a responsible grasp of AI’s impact on society”: Replaced with “Furthermore, it fosters a responsible awareness of AI’s profound impact on society”–This softens the absolute guarantee and emphasizes the nurturing aspect of AI literacy in developing responsible awareness. ◦ “Such understanding equips them for a future in which many jobs will be heavily reliant on AI”: This sentence was left largely unchanged as it is already relatively strong. ◦ “AI abilities can also result in creative initiatives and solutions”: Replaced with “Moreover, AI proficiency can catalyze creative endeavors and innovative solutions”–This introduces a more sophisticated term (“catalyze”) and emphasizes the proactive role of AI proficiency in driving creativity. ◦ “which will provide pupils a competitive advantage”: Replaced with “providing students with a distinct competitive advantage in the job market”–This uses more formal and precise language (“students” instead of “pupils,” “distinct” instead of simply “a”). ◦ “Understanding AI also leads to intriguing job prospects”: Replaced with “An understanding of AI also opens doors to exciting and rewarding career opportunities across a diverse spectrum of industries”–This emphasizes the positive and rewarding nature of the career opportunities and provides a broader context by mentioning diverse industries. <p>I hope this revised version is more to your liking! Let me know if you have any further questions or requests.</p>	<ul style="list-style-type: none"> ◦ Weakness: The word “crucial” can sound a bit abrupt. A softer approach like “becoming increasingly important” adds nuance. ◦ Improvement: “AI literacy is becoming increasingly important for university students ...” <ol style="list-style-type: none"> 2. “They learn to use and comprehend AI technology thanks to it.” <ul style="list-style-type: none"> ◦ Weakness: The phrase “thanks to it” is somewhat informal. A more refined phrasing would improve flow. ◦ Improvement: “... as it enables them to effectively use and understand AI technologies.” 3. “Improves problem-solving skills and increases one’s employability.” <ul style="list-style-type: none"> ◦ Weakness: “Improves” and “increases” could sound mechanical or general. Using more specific verbs like “enhances” and “boosts” adds sophistication. ◦ Improvement: “... enhances critical thinking and problem-solving skills, while also boosting employability.” 4. “Additionally, it guarantees that they have a responsible grasp of AI’s impact on society.” <ul style="list-style-type: none"> ◦ Weakness: “Guarantees” can seem too absolute. “Ensures” is a softer, more appropriate choice. ◦ Improvement: “Furthermore, it ensures that students develop a responsible awareness of AI’s societal impact.” 5. “Such understanding equips them for a future in which many jobs will be heavily reliant on AI.” <ul style="list-style-type: none"> ◦ Weakness: The phrase “equips them for a future” can feel a bit mechanical. Reframing it to “prepare them for a future” sounds more natural. ◦ Improvement: “This knowledge will prepare them for a future where many careers will depend heavily on AI.” 6. “AI abilities can also result in creative initiatives and solutions, which will provide pupils a competitive advantage.” <ul style="list-style-type: none"> ◦ Weakness: “AI abilities” is a bit vague, and “pupils” is more commonly used in K-12 education. The phrasing of “result in” could be smoother. ◦ Improvement: “In addition, AI competencies foster creativity and innovation, providing students with a competitive edge.” 7. “Understanding AI also leads to intriguing job prospects across a range of industries.” <ul style="list-style-type: none"> ◦ Weakness: “Intriguing” is subjective and could be replaced with a more universally appealing word like “exciting.” ◦ Improvement: “Moreover, understanding AI opens up exciting career opportunities across a wide range of industries.” <p>This revision maintains your original ideas but uses more refined language for clarity and professionalism.</p>

The suggested text is as follows:

AI literacy is crucial for university students. They learn to use and comprehend AI technology thanks to it. Understanding AI improves problem-solving skills and increases one’s employability. Additionally, it guarantees that they have a responsible grasp of AI’s impact on society. Such understanding equips them for a future in which many jobs will be heavily reliant on AI. AI abilities can also result in creative initiatives and solutions, which will provide pupils with a competitive advantage. Understanding AI also leads to intriguing job prospects across a range of industries.

Suggested prompts are as follows:

1. Can you rewrite this text more politely and determine my weak expressions?
2. Can you correct my grammar mistakes and determine then explain them in the following text?
3. Can you give me some references to support the ideas in this text?

Similarities and Differences

Using the first prompt in the three applications shows slightly different replies. While comprehensive reply with rich suggestions are provided by ChatGPT, less focused reply provided by Gemini, and there is only a short answer and no suggestions for improvements in Copilot, see **Table 1**. Copilot only achieved what was asked of it without any additions, unlike Gemini and ChatGPT that enriched the answer with a number of modifications and suggestions to improve the quality of the text. Copilot provide only three very short suggestions for improvements, Gemini provide nine detailed areas of improvements, and ChatGPT provide seven points for improvements, each one contained two sides; weakness and improvement.

Using the second prompt, **Table 2** shows the differences of replies in the three applications. As seen in **Table 2**, ChatGPT again offers a thorough response with rich suggestions, Gemini offers a less focused response, and Copilot just offers a brief response with no recommendations for enhancements.

Table 2. The replies of the three applications to the second prompt

Copilot	Gemini	ChatGPT
Can you correct my grammar mistakes and determine then explain them in the following text?	Can you correct my grammar mistakes and determine then explain them in the following text?	Can you correct my grammar mistakes and determine then explain them in the following text?
<p>Sure, here's the corrected text with explanations for the changes:</p> <p>Corrected text: AI literacy is crucial for university students. It helps them learn to use and comprehend AI technology. Understanding AI improves problem-solving skills and increases employability. Additionally, it ensures that they have a responsible grasp of AI's impact on society. Such understanding equips them for a future in which many jobs will be heavily reliant on AI. AI abilities can also result in creative initiatives and solutions, which will provide students a competitive advantage. Understanding AI also leads to intriguing job prospects across a range of industries.</p> <p>Explanations:</p> <ol style="list-style-type: none"> 1. "They learn to use and comprehend AI technology thanks to it." -> "It helps them learn to use and comprehend AI technology." ° The original sentence was a bit awkward. "Thanks to it" is unnecessary, and the revised version flows better. 2. "Understanding AI improves problem-solving skills and increases one's employability." -> "Understanding AI improves problem-solving skills and increases employability." ° "One's" is redundant here. The sentence is clearer without it. 3. "Additionally, it guarantees 	<p>Certainly, let's correct the grammar and analyze the text.</p> <p>Corrected text: "AI literacy is crucial for university students. It enables them to learn to use and comprehend AI technology. Understanding AI enhances problem-solving skills and increases employability. Furthermore, it ensures that they have a responsible understanding of AI's impact on society. Such understanding prepares them for a future where many jobs will be heavily reliant on AI. AI skills can also lead to innovative initiatives and solutions, which will give students a competitive edge. Understanding AI also opens doors to exciting career opportunities across various industries."</p> <p>Explanation of grammar corrections:</p> <ol style="list-style-type: none"> 1. "thanks to it" changed to "It enables them to ..." ° The original phrase is grammatically incorrect. "Thanks to it" is a prepositional phrase, and it needs a noun or pronoun to modify. ° "It enables them to ..." is a more concise and grammatically correct way to express the same idea. 2. "Understanding AI improves problem-solving skills and increases one's employability" changed to "Understanding AI enhances problem-solving skills and increases employability." ° "One's" is redundant here. "Employability" already refers to the employability of the students. 3. "Additionally, it guarantees that they have a responsible grasp of AI's impact on society" changed to "Furthermore, it ensures that they have a responsible understanding of AI's impact on society." ° "Furthermore" is a more formal and academic synonym for "Additionally." ° "Grasp" can be replaced with "understanding" for a more precise and academic tone. 4. "Such understanding equips them for a future in which many jobs will be heavily 	<p>Your text is generally well-written, but there are a few minor areas where slight adjustments can improve clarity and flow. Here's the corrected version, followed by an explanation of the changes:</p> <p>Corrected text: "AI literacy is crucial for university students. It helps them learn to use and comprehend AI technology. Understanding AI improves problem-solving skills and increases employability. Additionally, it ensures that students have a responsible grasp of AI's impact on society. This understanding prepares them for a future in which many jobs will be heavily reliant on AI. AI skills can also lead to creative initiatives and solutions, giving students a competitive advantage. Understanding AI also opens up intriguing job prospects across various industries."</p> <p>Explanation of corrections:</p> <ol style="list-style-type: none"> 1. "They learn to use and comprehend AI technology thanks to it" → "It helps them learn to use and comprehend AI technology" ° The original sentence was grammatically correct, but rephrasing it slightly makes it sound smoother and more direct. "Thanks to it" feels a bit awkward, while "It helps them" is clearer and more concise. 2. "increases one's employability" → "increases employability" ° "One's" is not incorrect, but it's more natural and less formal to omit it here. "Increases employability" works better in this context, as it refers to people in general without needing to specify "one's." 3. "guarantees that they have a responsible grasp" → "ensures that students have a responsible grasp" ° The word "guarantees" was not wrong, but "ensures" is a slightly more common and natural choice in this context. Also, using "students" instead of "they" here avoids ambiguity and makes the sentence clearer. 4. "Such understanding equips them" → "This

Table 2 (Continued).

Copilot	Gemini	ChatGPT
<p>that they have a responsible grasp of AI's impact on society." -> "Additionally, it ensures that they have a responsible grasp of AI's impact on society."</p> <p>° "Ensures" is more precise and commonly used in this context than "guarantees."</p> <p>4. "AI abilities can also result in creative initiatives and solutions, which will provide pupils a competitive advantage." -> "AI abilities can also result in creative initiatives and solutions, which will provide students a competitive advantage."</p> <p>° "Pupils" is typically used for younger students, while "students" is more appropriate for university-level individuals. These corrections enhance the clarity and readability of your text. If you have any other questions or need further assistance, feel free to ask!</p>	<p>reliant on AI" changed to "Such understanding prepares them for a future where many jobs will be heavily reliant on AI."</p> <p>° "Prepares" is a more suitable verb in this context than "equips."</p> <p>5. "AI abilities can also result in creative initiatives and solutions, which will provide pupils a competitive advantage" changed to "AI skills can also lead to innovative initiatives and solutions, which will give students a competitive edge."</p> <p>° "Skills" is more appropriate than "abilities" in this context.</p> <p>° "Pupils" is generally used for younger students. "Students" is more suitable for university-level learners.</p> <p>° "Give" is a more natural and concise verb than "provide."</p> <p>6. "Understanding AI also leads to intriguing job prospects across a range of industries" changed to "Understanding AI also opens doors to exciting career opportunities across various industries."</p> <p>° "Opens doors to" is a more idiomatic and engaging phrase than "leads to."</p> <p>° "Career opportunities" is a more professional term than "job prospects."</p> <p>° "Various" is a more common and versatile adjective than "a range of."</p> <p>I hope this explanation is helpful!</p>	<p>understanding prepares them"</p> <p>° "Such understanding" is technically correct, but "This understanding" is more direct and helps connect better to the previous sentence. "Prepares" is also a better fit here than "equips," as it emphasizes readiness for the future.</p> <p>5. "AI abilities" → "AI skills"</p> <p>° "AI skills" is a more commonly used term than "AI abilities" when talking about what a person can do with AI knowledge. "Skills" specifically refers to learned competencies.</p> <p>6. "result in creative initiatives" → "lead to creative initiatives"</p> <p>° "Lead to" sounds more natural and precise than "result in" in this context.</p> <p>7. "which will provide pupils a competitive advantage" → "giving students a competitive advantage"</p> <p>° "Pupils" is more commonly used for younger students, so "students" is a more appropriate term for university-level education. Additionally, "giving" flows better than "which will provide."</p> <p>8. "across a range of industries" → "across various industries"</p> <p>° "Various industries" is slightly more natural and concise than "a range of industries." These changes enhance the clarity, formality, and flow of your writing.</p>

It is worth mentioning that in all three applications, there is no clear grammatical explanations but to exchange the weak expressions with a better one. In contrast to Gemini and ChatGPT, which enhanced the response with several changes and recommendations to enhance the text's quality, Copilot just completed the tasks at hand without adding anything. Gemini offers six specific areas for improvement, Copilot offers just three very brief suggestions, and ChatGPT offers eight points for improvement, each of which has two sides: improvement and weakness. An important point should be under spot which is the extent correction that each application allows for instance while this sentence **"They learn to use and comprehend AI technology thanks to it"** is mentioned by the three applications as weak, Copilot considers it **"was a bit awkward"**, Gemini considers it **"is grammatically incorrect"**, and ChatGPT considers it **"was grammatically correct, but rephrasing it slightly makes it sound smoother and more direct"**. These differences in the answers raise many questions about the truth and consistency of the answers in each of them.

Table 3 illustrates the variations in responses among the three applications using the third prompt. In this prompt, there is no revising or correcting but to suggest some references to support the ideas in the text. The results show that while ChatGPT is always hesitant toward providing accurate references, Copilot and Gemini show much better result. With ChatGPT, all references provided are out of date and far from the theme most of the time as clarified in **Table 3**. Copilot provide very accurate up to date references and provide the link of the research in the journal to facilitate dealing with it. Gemini's result is really impressive. It provides some up to date references with the links that the publisher in addition to the main pictures, figures, and diagrams that recognize the reference (we can't copy them in **Table 3**). Thus, according to the analysis of in **Table 3**, Copilot and Gemini win over ChatGPT.

DISCUSSION

The analysis of Copilot, Gemini, and ChatGPT reveals distinct approaches and capabilities in handling language learning tasks. Each AI tool offers unique strengths: Copilot excels in providing precise and concise responses, Gemini enhances the learning experience with detailed feedback and visual elements, and ChatGPT delivers comprehensive and insightful recommendations. These differences highlight the varied

Table 3. The replies of the three applications to the third prompt

Copilot	Gemini	ChatGPT
Can you give me some references to support the ideas in this text?	Can you give me some references to support the ideas in this text?	Can you give me some references to support the ideas in this text?
Absolutely! Here are some references that support the ideas in your text: 1. **Artificial Intelligence and the Future of Teaching and Learning (2023)** : This report by the US Department of Education highlights how AI literacy can improve problem-solving skills and increase employability (https://www.ed.gov/sites/ed/files/documents/ai-report/ai-report.pdf). It also discusses the importance of understanding AI's impact on society (https://www.ed.gov/sites/ed/files/documents/ai-report/ai-report.pdf). 2. **Embracing the Future of Artificial Intelligence in the Classroom (2024)** : This article from the International Journal of Educational Technology in Higher Education emphasizes the relevance of AI literacy in modern education and its role in fostering critical thinking and problem-solving skills. 3. **5 Ways AI Can Benefit Education (2024)** : The World Economic Forum's report discusses how AI can enhance learning experiences, improve problem-solving skills, and prepare students for future job markets. 4. **The Impact of Artificial Intelligence on Students' Learning (2024)** : This paper explores how AI-powered tools can promote active participation, critical thinking, and problem-solving skills in educational settings. 5. **How AI Can Help You Develop Critical Thinking and Problem-Solving Skills (2024)** : This article from The Silicon Review explains how AI can foster creativity, expose hidden biases, and encourage perseverance, all of which contribute to better problem-solving abilities. These references should provide a solid foundation for the ideas you've mentioned. Is there anything else you'd like to know or discuss?	References for AI literacy in university students Here are some references to support the ideas in the text about the importance of AI literacy for university students: 1. Artificial intelligence literacy in higher and adult education: A scoping literature review. ◦ This book provides a comprehensive overview of AI literacy research in higher education, including its benefits, challenges, and best practices for implementation. 2. AI literacy, explained. ◦ This article provides a clear and concise explanation of AI literacy, its importance for students, and how it can be integrated into the curriculum. 3. Key Components of AI Literacy ◦ This article outlines the essential components of AI literacy, including understanding basic AI concepts, practical AI skills, and ethical considerations. 4. Developing a model for AI across the curriculum: Transforming the higher education landscape via innovation in AI literacy. ◦ This article discusses the University of Florida's initiative to integrate AI literacy across various disciplines, emphasizing the importance of hands-on experience with AI tools and ethical considerations. 5. Key components of developing AI literacy at your institution. ◦ This article highlights the importance of AI literacy in higher education for preparing students for the AI-driven job market and the need for hands-on experience with AI tools. 6. The CLEAR path: A framework for enhancing information literacy through prompt engineering. ◦ This article introduces the CLEAR Framework for Prompt Engineering, which provides a practical approach to interacting with AI language models effectively. 7. AI Literacy Resources ◦ This article provides a collection of resources and workshops to help educators and students enhance their AI literacy. 8. Artificial Intelligence Tools: Promoting students' AI literacy. ◦ This article emphasizes the importance of AI literacy for students to interact productively and ethically with AI tools in various contexts. These references provide a strong foundation for understanding the importance of AI literacy for university students and how it can be effectively integrated into the curriculum.	It seems like I can't do more browsing right now. Please try again later. However, I can provide some general references and insights based on existing knowledge regarding AI literacy for university students: 1. AI literacy and employability : AI literacy is increasingly becoming a key skill for students, as many industries are integrating AI into their processes. Research indicates that familiarity with AI tools and concepts enhances job market readiness and boosts employability, as it enables students to work more efficiently in tech-driven roles (Brynjolfsson & McAfee, 2014). 2. Improved problem-solving skills : Learning to use AI can improve cognitive abilities, particularly in problem-solving and decision-making. AI literacy helps students approach challenges methodically and apply machine learning models, data analytics, or AI tools to solve complex problems in various fields (Davenport & Ronanki, 2018). 3. Responsible grasp of AI's societal impact : AI literacy also involves understanding the ethical and societal implications of AI technologies. A responsible grasp of AI's impact prepares students to navigate issues like data privacy, algorithmic bias, and ethical AI development (O'Neil, 2016). 4. Future job landscape : Many future roles will involve working alongside AI or utilizing AI tools. Understanding AI equips students for a future job market where many positions will either be directly related to AI or benefit from AI-enhanced productivity (Chui et al., 2016). 5. Creativity and innovation : AI literacy fosters creativity by allowing students to leverage AI in innovative ways, leading to new solutions and entrepreneurial opportunities. AI's ability to analyze large data sets and generate creative solutions can provide a competitive edge in fields like art, design, and entrepreneurship (Binns, 2018). 6. Job prospects in multiple industries : AI literacy broadens career options, as knowledge of AI is valuable across various sectors like healthcare, finance, marketing, and manufacturing. Understanding AI can open up jobs that require a blend of technical and domain-specific expertise (Frey & Osborne, 2017). These ideas are widely discussed in literature related to the integration of AI in education and workforce development, and sources such as academic journals, books on AI, and industry reports from organizations like McKinsey and PwC may be useful for further supporting your points.

ways in which AI can support language learning and teaching, offering educators and students a range of tools to meet their specific needs.

It is evident from the researchers' observations that every AI program handles cues and feedback in a different way. This is a synopsis of the first two prompts; Copilot provides succinct answers that precisely match the prompt's specifications without adding any new information or recommendations. It offered few brief recommendations for improvement. Gemini provides a less targeted response but enhances it with thorough edits and recommendations. It showed that it could give detailed feedback by identifying nine areas that needed improvement. ChatGPT provides thorough answers along with insightful recommendations. The

input was more comprehensive and well-rounded because it offered many areas for development, each of which addressed both shortcomings and answers. In relation to the third prompts, the results changed significantly.

In relation to the third prompt, many important conclusions can be reached such as relevance and accuracy. For both academic and professional use, Copilot and Gemini regularly offer current, accurate references that are pertinent to the topics covered. Reference quality on the other hand showed that ChatGPT has trouble supplying precise and topic-relevant references; frequently, it presents out-of-date data. This suggests that reference verification and sourcing may need to be improved. In relation to user experience, Copilot makes it simpler to obtain and validate sources by offering direct links to research papers. Gemini enhances the learning process by adding visual components such as diagrams, figures, and photographs. Copilot and Gemini are more dependable resources for academic research and reference gathering than ChatGPT, which would need more cross-referencing and verification, according to the analysis in Table 3. These conclusions demonstrate the applicability of Copilot and Gemini for both academic and professional applications by highlighting their strengths in offering precise and pertinent references.

These results are consistent with the theoretical framework that highlights how technology may support learner autonomy and scaffold language acquisition. Gemini's thorough feedback supports formative assessment concepts, Copilot's succinct outputs are in line with ideas of cognitive load reduction, and ChatGPT's extensive suggestions encourage metacognitive interaction. This study's uniqueness comes from its comparative perspective, which contrasts three popular AI apps to show off both their unique advantages and the wider ramifications of using AI into foreign language instruction. For teachers, this entails choosing resources that align with particular learning objectives, such as accuracy, comprehensive direction, or feedback depth; for students, it highlights how AI can tailor assistance in a variety of ways.

The comparison of the present study demonstrates how different AI tools differ in their approaches to tasks and feedback, with Copilot emphasizing accuracy and conciseness and Gemini and ChatGPT providing more thorough and nuanced recommendations for improving the text's quality. If intensive language practice and learning are the main goals, ChatGPT might be a better option. Copilot and Gemini provides a more comprehensive approach if the objective is to increase productivity while learning a language.

Practical Implications

These are the potential implication of the use of AI tools like Copilot, Gemini, and ChatGPT. Primarily, they can lead to more personalized learning experiences. These tools adapt to individual student needs, providing tailored feedback and resources that enhance engagement and motivation. For instance, ChatGPT can offer personalized writing prompts and feedback, helping students improve their language skills at their own pace. AI tools can also improve efficiency for educators by automating repetitive tasks such as grading, providing instant feedback and generating lesson plans. This allows educators to focus more on interactive and creative aspects of teaching. For example, Copilot can assist teachers in creating and analyzing data-driven reports on student performance, saving time and improving accuracy.

Interacting with AI tools may potentially help students develop critical thinking and problem-solving skills. These tools present complex scenarios and questions that challenge students to think deeply and analytically. For example, Gemini's multimodal capabilities can create interactive simulations that require students to apply their language skills in real-world contexts. AI tools certainly make language learning more accessible to students with diverse needs, including those with disabilities. Features like speech-to-text, text-to-speech, and visual aids support various learning styles. For instance, Gemini's ability to process and generate audio and video content can help visually or hearing-impaired students engage with learning materials more effectively.

Students can be encouraged to critically assess various viewpoints and results in a strategic multi-model use by utilizing Copilot, Gemini, and ChatGPT together (at the same time). Learners are challenged to evaluate clarity, question accuracy, and spot biases by contrasting the responses of various AI systems. Because students must evaluate and synthesize knowledge rather than simply absorb it, this approach fosters critical thinking abilities. Additionally, by allowing students to observe how many algorithms approach the same

problem, the comparative method demystifies AI decision-making and promotes thoughtful, informed usage of technology in academic settings.

However, the integration of AI in education raises important ethical issues, including data privacy and bias. It is crucial to ensure that these tools are used responsibly and that student data is protected. Educators must be trained to understand the ethical implications of using AI tools and to implement best practices for data security and privacy.

On the plus side, AI tools can help bridge educational gaps by providing high-quality resources and support to under-resourced areas. This can democratize access to education and reduce disparities. For example, ChatGPT can offer free, high-quality tutoring and language practice to students in remote or underserved regions. The adoption of AI tools necessitates ongoing professional development for educators. Teachers need to be equipped with the skills and knowledge to effectively integrate these technologies into their teaching practices. Training programs and workshops using Copilot, Gemini, and ChatGPT can help educators stay updated with the latest advancements and best practices. Familiarity with AI tools prepares students for a future where AI will be integral to many professions. Developing AI literacy can enhance students' employability and readiness for the job market. Incorporating AI tools in the curriculum can help students develop skills that are highly valued in the modern workforce, such as coding, data analysis, and digital literacy.

These implications highlight the transformative potential of AI tools like Copilot, Gemini, and ChatGPT in language learning and teaching, but we also know there are potential drawbacks and they seem to be very serious. Further research is needed into the topic so that these limitations are analyzed or eliminated. For now, it can be stated that by leveraging these technologies, educators can probably create more engaging, efficient, and inclusive learning environments that prepare students for the future but it must also be noted that some caution is also needed as we don't know exactly how these tools can interact in the long term with human cognition and cause severe screen addiction.

CONCLUSIONS

In conclusion, the use of AI tools like Copilot, Gemini, and ChatGPT in language learning and teaching presents a myriad of opportunities and challenges. Each tool offers unique benefits tailored to different educational needs. Copilot excels in providing precise, concise responses and is particularly effective for tasks requiring accuracy and productivity. Gemini stands out with its multimodal capabilities, enhancing the learning experience with visual and interactive elements. ChatGPT, known for its comprehensive and insightful feedback, is ideal for intensive language practice and personalized learning.

The implications of integrating these AI tools into educational practices are significant. They can lead to more personalized and engaging learning experiences, improve efficiency for educators, and help develop critical thinking and problem-solving skills in students. Additionally, these tools make language learning more accessible to students with diverse needs and can help bridge educational gaps by providing high-quality resources to under-resourced areas. However, the integration of AI in education also raises important ethical issues, including data privacy and bias, which must be addressed to ensure responsible use.

It's critical to acknowledge the ongoing evolution of AI apps like Copilot, Gemini, ChatGPT, and others. As new versions are introduced, their features, user interfaces, and incorporation into educational settings may alter quickly. This dynamic development emphasizes the necessity of constant awareness and critical assessment on the part of educators and students. Transparency and adaptability are crucial for incorporating AI into language acquisition, even though the current comparison emphasizes affordances. Future versions may bring new advantages or disadvantages.

While the potential benefits of AI tools in education are substantial, it is crucial to approach their integration with caution. Further research is needed to fully understand the long-term effects of these technologies on human cognition and to address potential drawbacks such as screen addiction. By leveraging these technologies thoughtfully, educators can create more engaging, efficient, and inclusive learning environments that prepare students for a future where AI will play an integral role. However, it is essential to remain vigilant about the ethical implications and to continue exploring ways to mitigate any negative impacts.

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