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RESEARCH ARTICLE

The end of English language learning: GenAI as a tool for counter productivity

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ABSTRACT

The emergence of GenAI marks a transformative phase in technology, characterized by its ability to create content, simulate human-like responses, and adapt to various contexts. This innovation, fueled by advances in machine learning and natural language processing, has significantly impacted English education. However, there is a need to explore the impacts of GenAI in English language learning among students. This paper was conducted to determine how do GenAI promotes counterproductive learning behaviors among college students. College students (n=15) were purposively selected based on their responses to a preliminary open-ended questionnaire. Individual narratives were gathered through one-on-one interviews using semi-structured interview questions. The findings indicated that college students frequently encountered overly technical, vague, or contextually inappropriate language in AI-generated responses, which caused confusion and hindered comprehension. Inaccuracies, such as vague or irrelevant information, further undermined trust in AI tools, compelling learners to rely on their own interpretations or external resources. This further caused students to experience frustration due to unmet expectations, as AI-generated content was often broad, complex, or misaligned with their learning needs. The time-consuming nature of clarifying vague or technical content added to their dissatisfaction, especially for those with limited time or additional responsibilities. Further, reliance on AI features, such as instant grammar corrections or translations, diminished learners' motivation to engage actively with materials, causing a passive learning approach. This overdependence hindered the development of critical thinking and independent learning skills, particularly in tasks requiring creativity and deeper cognitive effort.

Keywords: cognitive dependency; counterproductivity; English language learning; GenAI

1. Introduction

English, as the most widely used language in global media, science, technology, and academia, transforms the education system worldwide, including in countries where it is not the native language[1]. In the Philippines, the American colonial influence established English as the primary language of instruction, a legacy that persists today across all educational levels[2]. Despite its significant role in academic and professional spheres, English proficiency in the country has been declining in recent years, raising concerns about the impact on global competitiveness[3]. As English is essential for success in the global marketplace, it

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is regarded not just as a foreign language but as a necessary qualification. This decline in proficiency reflects challenges in English language teaching and learning, highlighting the need for improved educational strategies to maintain the country's historical advantage in English communication.

Artificial Intelligence (AI) is transforming English language learning by offering personalized, adaptive, and interactive experiences through tools like chatbots, intelligent tutoring systems, and language learning apps. These AI-driven technologies cater to individual needs, provide real-time feedback, and develop engagement through features like gamification, which enhances student proficiency, autonomy, and learning outcomes[4-6]. The integration of AI has also improved teacher efficiency and has shown notable progress in student engagement and motivation[7,8]. However, concerns persist regarding data privacy, algorithmic bias, and the potential erosion of natural human interaction in the learning process[6,9]. A survey of Ukrainian university students revealed significant apprehension about cyberattacks and the lack of spontaneity in AI-driven learning[9].

Generative AI (GenAI), a prominent form of AI that enables machines to create content, offers further potential in providing personalized and contextually relevant language learning opportunities, particularly in out-of-class environments[10]. The use of GenAI has become a strategic response to the evolving needs of language learners in the digitally interconnected world, reshaping the pedagogical landscape by simulating human intelligence and adapting to individual learning needs[11,12].

However, studies also pointed out limitations, such as potentially overwhelming or irrelevant feedback, which may hinder cognitive processes like planning and revising during writing[13,14]. Although these technologies have advanced in evaluating language skills, they may still produce mistakes, such as errors in speech recognition or incorrect grammar suggestions, potentially causing frustration and confusion for learners[15]. Furthermore, AI lacks the depth of understanding that human educators bring to language instruction, particularly when interpreting idiomatic phrases, cultural nuances, and the subtleties of tone and emotion in communication[16]. Despite the drawbacks, students found GenAI tools user-friendly and effective, contributing to their positive perception of the tools. Kohnke[14] suggests that, with proper implementation, GenAI can complement traditional educational methods, enhancing language proficiency without undermining critical thinking. A balanced approach that integrates both GenAI and traditional tools may be most beneficial for the development of English language learning processes[17-19].

Özdere[20] observed that majority of papers published regarding GenAI use mainly focused on its positive side, while limited studies were conducted on its effects on learning. Similarly, most studies examined the effectiveness of AI tools, often overlooking their long-term impact on learners' language proficiency, retention, and socio-cultural skills[21]. Hence, to fill this conceptual gap, this paper discussed about how GenAI use encouraged students to engage in counterproductive learning behaviors. When students frequently depend on GenAI tools for immediate solutions, they less likely engage in reflective or critical thinking processes, which are essential for achieving language mastery and cognitive development. This reliance may result in an overdependence on AI-generated outputs, potentially hindering learners' ability to internalize linguistic rules and retain acquired knowledge. If such behaviors remain unaddressed, they could compromise the long-term effectiveness of GenAI in educational settings, raising significant concerns regarding its sustainability as a viable learning aid.

2. Literature review

In the past decades, global technology has transitioned from basic word processing systems to more sophisticated web-based platforms that use natural language processing technologies[22]. Early tools in

language education, such as basic spelling and grammar checkers, were primarily designed to identify surface-level errors in writing, offering only minimal assistance[14]. However, advances in technology have greatly transformed both writing practices and teaching strategies[23]. For instance, Automated Written Evaluation (AWE) systems go beyond simple error detection by providing immediate, actionable insights that help students improve not only their language mechanics but also their understanding of the content[24]. These systems also help reduce student anxiety because of their impersonal nature, with many learners preferring them over traditional teacher feedback[25].

GenAI has garnered significant global attention from educators, who have recognized its potential in transforming educational practices[26]. Studies have demonstrated the widespread use of GenAI tools in various educational contexts, including web-based chatbots, personalized curriculum design, and intelligent tutoring systems[27-29]. These tools facilitate a highly personalized learning experience, which develops learning efficiency for students[30]. An early study indicated that ChatGPT, a GenAI language model introduced in November 2022, offers distinct advantages in academic research, particularly in idea generation and data identification[31]. Several countries and regions have introduced favorable policies to support the integration of GenAI in education[32].

A useful framework for understanding student engagement with GenAI tools is the Technology Acceptance Model (TAM), which highlights the importance of perceived ease of use and perceived usefulness in determining technology adoption[33]. Research supports this, showing that students are more likely to incorporate AI tools into their learning when they find them user-friendly and beneficial for their academic progress[34,35]. Particularly, GenAI tools, such as ChatGPT, offer more advanced feedback mechanisms compared to traditional grammar-checking tools, providing both surface-level corrections and deeper analysis on the content, coherence, and style[36,37]. This sophistication makes GenAI tools more suitable for improving higher-order writing skills, particularly for students in English for Academic Purposes contexts[38]. Unlike traditional tools, which are often limited in scope, GenAI tools leverage sophisticated language models, such as GPT-4, to provide contextualized and personalized feedback[39]. These tools not only enhance linguistic accuracy but also support broader learning objectives by offering detailed suggestions that encourage understanding and engagement[40]. Their ability to adapt to individual learning styles and needs positions them as a powerful resource in diverse educational environments, where students vary in proficiency and preferences[41,42,23]. In addition, the interactive nature of GenAI tools promotes active engagement, creating an environment conducive to self-regulated learning through real-time feedback and personalized suggestions[44].

Despite the promising potential of GenAI tools in education, several studies highlight significant limitations, including inaccurate, inconsistent, or irrelevant feedback. These limitations are primarily attributed to the statistical models underlying large language models (LLMs), which predict word sequences without true understanding of the content[37,45]. As a result, GenAI often generates "hallucinations," producing outputs that are misaligned with factual information or lacking in contextual accuracy[46]. For instance, feedback can be too general, missing the nuanced understanding of individual student needs, which is critical for effective learning[46]. Furthermore, the randomness inherent in LLMs, driven by their reliance on language patterns rather than logical reasoning, results in unpredictable and inconsistent outputs[47,48]. For example, LLMs may provide conflicting answers or irrelevant suggestions, making them unreliable, particularly in complex subjects like mathematics[49].

In English language learning, an over-reliance on GenAI can undermine students' ability to engage in autonomous learning and diminish their intrinsic motivation, as becoming accustomed to receiving

immediate answers may reduce their critical thinking, problem-solving engagement, and initiative to explore topics independently[26]. Similarly, students may rely on GenAI for personalized tutoring, undermining the educational process by reducing the need for hard work, independent learning, and consistent practice, which are essential for academic growth[50-52].

However, there is still a need to explore the challenges the GenAI imposes in the current education system. Özdere[20] argued that most published papers on AI in English education focus on its positive learning impacts, a phenomenon attributed to positive publication bias, where researchers highlight favorable findings while neglecting challenges. Hence, this paper focused on understanding how GenAI causes students to engage in counterproductive learning behaviors. This paper posits that there are psychological underpinnings driving these behaviors, which warrant further exploration in order to understand the underlying cognitive, emotional, and motivational factors that may influence individuals' actions and responses in GenAI-assisted learning.

3. Methods

3.1. Research design

This paper explored how does GenAI affect the productivity of college students when it comes to English language learning. Exploratory studies serve as an essential approach to research, particularly when the subject under investigation is not well-documented or lacks substantial prior examination[53]. These studies aim to address specific questions, uncover patterns, and identify key themes without being bound by the constraints of pre-existing hypotheses or theoretical frameworks[54-56]. Their primary objective is to generate knowledge and offer initial insights that can guide subsequent, more structured inquiries. This flexibility makes exploratory research particularly valuable in examining emerging or complex issues where existing literature is sparse or insufficient[57,58]. Despite criticisms regarding their perceived lack of scientific rigor, exploratory studies are widely recognized for their efficiency in gathering preliminary data and uncovering new perspectives[59]. Scholars argue that the inherent flexibility of exploratory designs is a strength, as it allows researchers to adapt their methods in response to evolving circumstances or findings[60,56]. This adaptability is particularly valuable in fields characterized by uncertainty or rapid change (like GenAI), as it enables comprehensive and context-sensitive understanding of the phenomena being studied. The open-ended nature of these studies facilitates the active involvement of participants, enriching the data and contributing to the discovery of new knowledge[61,62]. This paper was expected to answer one critical question in English language learning: *how GenAI affects students with counterproductive learning activities?* Such understanding will have application in pedagogical designing and instructional strategies.

3.2. Population and sampling

Sampling in exploratory research is distinctively deliberate, focusing on achieving depth of understanding rather than broad statistical generalization. This approach is characterized by the strategic selection of participants who possess specific attributes, experiences, or knowledge directly relevant to the research phenomenon[63,64]. Purposive sampling, a widely employed non-probability technique, enables researchers to ensure that the data collected is rich, relevant, and closely aligned with the objectives[65-67]. Emmel[68] highlights that in qualitative research, the value of a sample lies in its utility rather than its size, advocating for smaller, thoughtfully selected participant groups. Such an approach is consistent with the goals of exploratory research, which aims to identify emerging trends, refine preliminary concepts, and explore key themes without the constraints of hypothesis testing or the need for statistical inference[69]. This flexibility allows researchers to adapt methods dynamically as new understanding arises during the data collection process, a characteristic particularly useful in exploratory studies[70,66]. College students from

Isabela City and Zamboanga City, Philippines were selected through online purposive sampling[71] using open-ended preliminary questions that gathered their learning experiences with GenAI. From this preliminary data, three many sampling criteria was applied: (1) currently enrolled in Academic Year 2024-2025, (2) taking up general language learning subject (Purposive Communication), and (3) use AI for the English subject. There were 87 college students who responded to the questions, but only 15 were interviewed. **Table 1** presents the summary of the information gathered from the sampled participants.

Table 1. Summary information of 15 sampled college students.

Name	Sex	Age	College Course	Counterproductive Behavior in Using GenAI
Alex	Male	19	Engineering	Over-reliance on AI for English assignments
Bea	Female	21	English Major	Plagiarism through unedited AI-generated essays
Carl	Male	22	Mathematics Major	Using AI for quick solutions without understanding
Diane	Female	20	Education	Lack of creativity by directly using AI lesson plans
Ethan	Male	18	Engineering	Misuse of AI for shortcuts, skipping technical learning
Faye	Female	23	Filipino Major	Using AI translations without contextual adjustments
Greg	Male	21	Mathematics Major	Dependency on AI for problem-solving in group work
Hannah	Female	22	Education	Copying AI-generated content for class presentations
Ivan	Male	20	English Major	Lack of critical editing of AI-written term papers
Jamie	Female	19	Engineering	Failure to verify AI-generated technical diagrams
Kyle	Male	23	Filipino Major	Overuse of AI for grammar checks, neglecting practice
Lea	Female	20	Mathematics Major	Blindly trusting AI solutions in computations
Marco	Male	22	Education	Overuse of AI for classroom activity designs
Nina	Female	19	Filipino Major	Using AI-generated poetry without proper attribution
Oscar	Male	21	Engineering	Relying on AI for lab report analysis without validation

3.3. Instrumentation

A semi-structured interview guide was developed to gather the responses of the participants. Semi-structured interview guide is an essential instrument in exploratory research, meticulously constructed to harmonize the structure required for thematic inquiry with the flexibility needed to accommodate participant narratives[66]. It facilitates a comprehensive exploration of subjective perspectives while maintaining fidelity to predetermined research objectives and ensuring coherence across interviews[72-74]. The process of developing such a guide demands a critical and systematic approach, with an exhaustive analysis of the research context, aims, and relevant theoretical frameworks[75]. A hallmark of rigorous interview guide development was the iterative refinement of questions through pilot testing. This step functions as a diagnostic mechanism, enabling researchers to identify potential ambiguities, redundancies, or unintended biases embedded within the preliminary questions[76]. The insights derived from this testing phase are instrumental in fine-tuning the guide to enhance its precision, clarity, and accessibility, ultimately ensuring that it serves as an effective tool for data collection[77,78]. Furthermore, soliciting expert feedback during this process provides an additional layer of methodological rigor, as such input often reveals overlooked gaps or inconsistencies in the guide's design, aligning it more closely with the research objectives[79]. Organized around predetermined thematic domains, the guide incorporates open-ended questions designed to elicit detailed narratives, enabling participants to articulate their experiences, opinions, and interpretations freely[80]. Crucially, the guide is not a rigid script but a flexible framework that empowers interviewers to adapt their questioning dynamically. This adaptability allows for in-depth probing, clarification of

ambiguous responses, and exploration of emergent themes, ensuring that the richness and complexity of the phenomena under investigation are captured comprehensively[81,82]. After thorough pilot testing and expert validation, **Table 2** presents the final interview guide used in this study.

Table 2. Final guide questions asked during interview process.

Objectives	Interview Questions
Identify the characteristics of AI tools that impede effective English language learning.	a. Which characteristics of the AI tools you use for learning English do you find least helpful or confusing? b. Have you encountered situations where an AI tool provided information that made it harder for you to understand English concepts? c. Do you believe that relying on certain AI tools for learning English can sometimes oversimplify the process, potentially hindering your ability to learn? Could you provide a specific example? d. Are there any AI features that you feel lead you to rely too much on technology rather than trying to learn English independently? e. How do you decide when to use AI tools versus other resources or study methods for learning English?
Examine the changes in learning behavior caused by AI tools that negatively impact English language acquisition.	a. How have AI tools changed the way you approach learning English compared to how you studied before using them? b. Do you find yourself relying on AI tools for quick answers rather than trying to solve English language problems on your own? Can you describe a situation? c. How do AI tools affect your motivation to study English regularly? Do they make you more or less engaged? d. Do you feel that using AI tools has changed the amount of time and effort you put into learning English? If so, how? e. How do you balance the use of AI tools with traditional study methods, and do you think this balance affects your ability to learn English effectively?

3.4. Data gathering procedure

Qualitative interviews are an essential tool for collecting nuanced data, particularly in research that seeks personal narratives and subjective experiences, enabling researchers to explore human behavior and thought processes[83]. Qualitative interviews are particularly suited for exploring complex phenomena, as their flexibility allows researchers to uncover patterns and insights that enrich the understanding of the subject matter[84]. The effectiveness of these interviews hinges on a systematic approach, often starts with a clear definition of the research objectives, which informs both the thematic focus of the interview and the selection of participants who can offer relevant insights[85]. A semi-structured approach is widely regarded as optimal, as it strikes a balance between ensuring coverage of critical themes and allowing for flexibility in adapting to the natural flow of conversation[86,87]. During interviews, to have a positive environment, it is essential for researchers to clearly communicate the study's purpose, address potential language barriers, and assure participants of confidentiality[88,89]. The documentation of interviews through audio recordings, with participants' consent, alongside detailed field notes, ensures the integrity and richness of the data collected[90]. Language was also an important barrier during interview; to address this, researchers invited participants to share their ideas and experiences in the language or dialect with which they are most comfortable[91]. Furthermore, creating rapport and minimizing interviewer bias are critical to securing authentic engagement, which is facilitated by the semi-structured format that encourages a conversational flow and allows for the exploration of emergent themes[92,93]. The entire data gathering lasted for one month, from August 2024 to September 2024.

3.5. Data analysis

Thematic analysis, as a qualitative research method, was utilized to systematically identify, organize, and interpret meaningful patterns within narrative data[94], particularly based on individual interviews. This approach was particularly advantageous in exploring shared experiences and the profound meanings embedded within participants' narratives, providing an insightful understanding of lived experiences[95,96].

The inherent flexibility of thematic analysis enabled its application across different research contexts, facilitating the emergence of themes organically as researchers engage with the data, reflecting on participants' perspectives[97,98]. The process of coding in thematic analysis is inherently layered, beginning with descriptive coding and advancing towards more interpretive stages[99,100]. Reflexive thematic analysis, an extension of this method, reflects on the active involvement of the researcher in the interpretation process. This approach acknowledges the influence of the researcher's values, experiences, and assumptions in shaping the findings, emphasizing the need for continual reflexivity throughout the analysis[101]. Researchers employing reflexive thematic analysis must be critically reflective, continually assessing how their perspectives may inform the interpretation of the data[102]. To uphold methodological rigor while maintaining flexibility, an inductive approach was adopted in reflexive thematic analysis, ensuring that themes and patterns emerge directly from the data itself, rather than being constrained by pre-existing theories or hypotheses[103]. This process aligns the analysis with the actual content and context of participants' responses, allowing themes to emerge naturally from the data, rooted in the lived experiences of the participants[95]. The six-phase framework (**Figure 1**) outlined by Braun and Clarke[104] serves as a comprehensive guide, supporting the iterative nature of the analysis. This framework allows for the continuous refinement of themes as new insights arise, thus ensuring a deeper understanding of the data and its underlying meanings[95]. With this approach, the analysis retained its exploratory focus, identifying central themes that reflect the complexity and diversity of participants' narratives. The inductive nature of this approach ensured that the analysis remains deeply rooted in the content of the data, allowing for a comprehensive and contextually grounded understanding of the phenomenon under investigation[105]. Thus, reflexive thematic analysis, with its emphasis on reflexivity and inductive reasoning, offered a robust and adaptable methodology for understanding complex qualitative data in a meaningful and systematic manner.

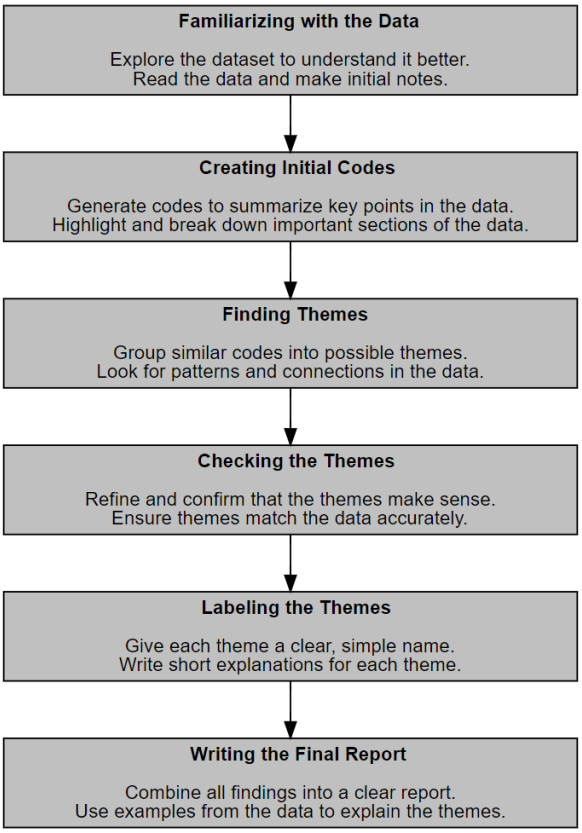

Figure 1. Workflow of the data analysis process.

4. Results

Objective 1: Identify the characteristics of AI tools that impede effective English language learning.

The findings revealed two primary themes that highlight the characteristics of AI tools that hinder effective English language learning: language complexity and the inaccuracy of content. Firstly, participants reported difficulties in understanding the language used by AI, describing it as overly complex, vague, or excessively technical. Some learners found the language used by AI to be overly formulaic or exaggerated, rendering it unsuitable for educational purposes. Participants expressed frustration with vague or irrelevant responses, which often lacked precision or alignment with their expectations. Instances of overly detailed or contextually inappropriate feedback further contributed to confusion, leaving learners uncertain about the correctness of the information provided. These inaccuracies undermined the reliability of AI tools as educational aids, prompting users to question the validity of the content and to rely more heavily on their own interpretations.

Theme 1: Language

In this analysis, college students encountered significant challenges in engaging with AI tools for English language learning due to linguistic barriers. Learners frequently expressed difficulty with *words and sentences that are difficult to understand*, which often led to confusion and hindered their comprehension. They also reported encountering *deep words that are unfamiliar* and *vague answers or high-sounding terms*, which necessitated additional efforts to verify meanings and ensure understanding.

> "There are times when I don't understand because there are words and sentences that are difficult to understand. So, I find it confusing most of the time."

Participants highlighted the *overly technical language* employed by AI tools, which often complicated the learning process. This excessive technicality necessitated additional efforts from learners to decipher and contextualize the information. Instead of fostering understanding, the AI's choice of language frequently compelled users to seek alternative resources or explanations that were more comprehensible. This extra step not only disrupted the flow of learning but also contributed to frustration and inefficiency in achieving educational goals.

> "AI sometimes gives deep words that are unfamiliar to me, so I need to confirm their meanings, taking more time than expected."

> "The confusion caused by AI's vague answers or high-sounding terms makes me double-check information to ensure I understand the concept."

> "Sometimes, its overly technical language sometimes forces me to look elsewhere for a more understandable explanation."

Several participants articulated concerns regarding the language utilized by AI tools, describing it as *cliché and overdone*. This stylistic characteristic was perceived as a significant limitation, rendering the outputs less suitable for educational purposes. Such language, characterized by repetitiveness and a lack of adaptability to the learners' context, created a pronounced disconnect between the learners' expectations and the content provided by the AI. This disparity not only hindered the overall learning experience but also diminished the perceived utility and relevance of AI in facilitating English language education.

> "…when I tried using AI, I find it's language to be cliché and overdone, no longer suited for students."

Theme 2: Inaccurate Contents

Participants frequently encountered instances where the information provided by AI was *doubtful* or *not accurate,* prompting skepticism about its reliability. This inconsistency emphasized the importance of learners relying on their own critical thinking and original ideas to mitigate the risk of misinformation. Such inaccuracies undermined the trust necessary for AI tools to function as reliable aids in the learning process.

Instead of clarifying complex concepts, the results were often described as *overly technical* or lacking specificity, which impeded learners' ability to grasp the material effectively. This lack of precision contributed to confusion, requiring users to expend additional effort to reinterpret or verify the AI-generated content. Such inefficiencies not only disrupted the learning process but also detracted from the perceived value of using AI as a pedagogical tool.

> "The result is either too vague or overly technical, which hinders the learner's understanding."

> "Instead of understanding the concept, I get more confused because AI either gives vague answers or uses high-sounding terms."

> "There are times that AI gives content that is doubtful and not accurate… It's important to have our own ideas."

Further, participants noted that AI tools frequently provided *too much information,* overwhelming learners and making it difficult to discern relevant details. This overabundance of content added another layer of complexity, further obstructing comprehension and usability. Instead of promoting clarity, the excessive and unfiltered information led to frustration and disengagement among users.

> "AI tools sometimes provide too much information, which can be confusing. Instead of helping, it makes me more confused."

GenAI Cici was reported to struggle with providing accurate or contextually relevant feedback, undermining their effectiveness for tasks requiring nuanced understanding. The failure to address these contextual subtleties rendered AI-generated feedback less meaningful and applicable, reducing its utility in language learning settings.

> "AI tools like Cici for learning English sometimes struggle in understanding complex contexts, making their feedback less accurate and relevant."

Some participants recounted experiences where the content provided by AI tools fell *far from their expectations,* even when clear instructions were given.

> "My first experience with ChatGPT was confusing because the content provided was too far from my expectations, even when I gave clear instructions."

Objective 2: Examine the changes in learning behavior caused by AI tools that negatively impact English language acquisition.

The findings revealed notable changes in learning behavior caused by AI tools that negatively impacted English language acquisition. Participants reported experiencing significant frustration when AI tools failed to meet their expectations. The inability of these tools to provide clear, comprehensible, or relevant responses often led to dissatisfaction and a lack of trust, further discouraging their use. In addition, AI tools were observed to make the learning process more time-consuming. Instead of streamlining tasks, the broad and challenging content produced by AI required users to invest additional time and effort in clarifying terms and researching meanings. Many participants also expressed concern that frequent dependence on AI for

instant answers, translations, or grammar corrections reduced their motivation to learn independently and inhibited the development of critical thinking skills. The ease of access to ready-made solutions diminished the effort required for active engagement, resulting in a passive learning approach. This over-reliance often discouraged learners from fully processing and retaining information, ultimately hindering their ability to apply their knowledge effectively.

Theme 1: Frustration

Participants frequently expressed *frustration when AI failed to meet their expectations,* particularly when the explanations provided were *too broad or complex.* The inability of AI to produce outputs that aligned with learners' anticipated content or language needs further compounded this frustration, as many found the responses *too hard to comprehend.* The frustration experienced by users was a direct consequence of the misalignment between their needs and the functionality of AI tools.

> "I get frustrated when AI doesn't meet my expectations."
>
> "When AI's explanations are too broad or complex, it frustrates me, especially when it doesn't meet my expectations."
>
> "I have certain content or words I expect, but when AI doesn't meet them because it's too hard to comprehend, it frustrates me."

This emotional response was exacerbated by the necessity of additional effort to *verify information through other sources,* stemming from *confusion and trust issues* caused by AI-generated outputs. Despite providing *clear instructions or prompts*, learners often felt dissatisfied when AI systems *did not understand their inputs.* Such recurring experiences of unmet expectations and ineffective communication discouraged the continued use of these tools and negatively impacted learners' confidence in their reliability.

> "I stop using AI because of the confusion and trust issues it caused, leading me to verify information through other sources."
>
> "Sometimes using AI frustrates me because it doesn't understand your prompt even you explained it well."

Theme 2: Time-consuming learning

Many participants reported that AI's outputs were frequently *too broad and challenging to understand,* compelling them to invest additional time in *clarifying the content.* This need for further investigation, particularly when deciphering *uncommon terms and vocabulary,* resulted in *prolonged efforts to comprehend new information,* which was counterproductive to the intended purpose of utilizing AI for learning enhancement.

For individuals juggling *loaded tasks* or external responsibilities, such as contributing to family financial support, the extra time required to *search for the meanings of complex words* added to their challenges. Instead of meeting expectations for *time-saving utility,* participants found that AI often *failed to meet their standards,* rendering it *less helpful* and detracting from its perceived value as a learning aid.

> "I'm a working student. I sometimes use AI to make my study sessions easier. But sometimes I encounter challenging situations where it gives overly complicated words that I cannot understand."
>
> "I need to search for the meaning of the words that AI uses in the content. Time-consuming for me, especially when I have a loaded task, and I also help my family with financial needs."

This counterproductive aspect of AI use highlighted a significant misalignment between its design and learner expectations. Rather than streamlining the educational process, the necessity of *relying on external resources,* such as *dictionaries* or *search engines,* undermined its potential benefits.

> "I encountered many times when AI's content was too broad and challenging to understand, leading me to spend more time clarifying it."

> "I find it less helpful as it doesn't meet the standards I have. Less helpful because instead of saving my time, it is now time-consuming."

> "Uncommon terms and vocabulary from AI made it harder for me to understand, requiring additional research to learn something new."

> "Instead of AI making things faster, I need to search the meanings of deep words on Google or Miriam Webster, which takes more time."

Theme 3: Reliance

Some students also noted reliance in AI where it affected their learning motivation and sense of responsibility. Participants reported that the convenience of AI features, such as *instant translations* and *grammar corrections,* often led to diminished *motivation to learn independently.* This reliance discouraged learners from actively engaging with the material, as they were tempted to *use AI instead of working on their own.* Particularly in situations like *cramming,* the presence of AI served as a shortcut, reducing the need for deeper cognitive effort.

> "Sometimes, AI features like instant translations or grammar corrections can make it tempting to rely too heavily on technology instead of actively engaging in the learning process independently."

> "However, this reliance can prevent me from developing my own ideas and understanding the material fully."

> "Even though AI helps me learn some of the lessons I sometimes forget to take notes on, it also has its downsides. I've realized that it makes me lazy sometimes."

> "AI affects my motivation to learn on my own because I know I can rely on it. There's a temptation to use it rather than working on my own, especially when cramming."

The perceived effortlessness of studying with AI, which provided *instant answers,* limited opportunities for *critical thinking* and the retention of knowledge. This overdependence was seen as a barrier to meaningful learning, as it failed to encourage learners to *think deeply about how to express their ideas,* especially when completing tasks such as essay writing. Instead of fostering active learning, the tools created a passive learning environment that stifled creativity and intellectual growth.

> "AI tools can make learning English seem too effortless, which might hinder our understanding and retention if they provide instant answers without encouraging critical thinking."

> "AI tools can make studying feel too easy, which can prevent me from thinking deeply about how to express my ideas, especially when writing essays."

Students felt that relying on AI reduced their effort to *think independently* about how to convey their ideas effectively. This reliance may hinder the development of essential writing and cognitive skills, as it

encouraged a passive learning approach rather than an active engagement with the material. Consequently, the process becomes less about personal growth and skill-building and more about convenience.

> "For example, when I use AI to suggest sentences for an essay, I feel like I'm not putting in the effort to think about how to express my ideas."

5. Discussion

Early studies on AI noted its potential use in English education[20], science education[106], mathematics learning[60], engineering[107], among other fields. AI has demonstrated significant potential in enhancing language education, with research indicating its effectiveness in supporting specific language competencies, such as reading comprehension[108], practicing repetitive language exercises on automated platforms[109], and improving English pronunciation[110]. AI also has broader educational functions, including automated grading, delivering feedback, creating personalized learning experiences, and supporting intelligent tutoring and predictive systems[111].

However, Özdere[20] believed that majority of published papers regarding the use of AI in English education focused on its positive learning impacts. Özdere[20] suggested that this phenomenon may be attributed to positive publication bias, wherein researchers tend to emphasize positive findings while overlooking issues and challenges. To contribute to the limited discourse on AI, this paper examines the experiences of college students using GenAI in English language learning. Specifically, it analyzes how these experiences led to counterproductive outcomes, resulting in ineffective learning results.

A key finding of this paper was the strong reliance of English language students on GenAI for their learning processes. The potential risks of excessive reliance on AI tools in academic contexts are evident in the literature. While these tools streamline processes such as idea generation and data synthesis, overdependence may undermine students' originality and critical thinking skills[112,113]. College students believed that *"…reliance can prevent [students] from developing [their] own ideas and understanding the material fully."* Some students noted that relying on the output that the GenAI gives *"…makes me lazy sometimes."* The convenience of GenAI providing answers quickly may limit opportunities for in-depth learning and intellectual engagement[114,115]. In the context of learning, cognitive dependency may result in superficial understanding and reduced retention of knowledge, as students might focus more on obtaining quick answers rather than fully processing and internalizing the information. This paper observed that with the increasing availability of accessible GenAI tools, there is a growing concern regarding cognitive dependency among students, which warrants further investigation. Hu[116] explored the factors influencing students' use of an AI-enhanced smart learning environment, revealing that students' behavioral intentions were shaped by their perceptions of the system's ease of use and its usefulness. Similarly, in the context of GenAI accessibility to the broader student population, the ease of use and perceived benefits of these tools likely influence students' decisions to rely on them for language learning. This, however, may lead to cognitive dependency, where students increasingly turn to GenAI for assistance, potentially affecting their independent critical thinking and problem-solving skills.

Further, GenAI use can be attributed to students' perceptions about its value in the learning process. Raman et al.[117] explored university students' intentions to use AI-driven language models like ChatGPT, found out that factors such as relative advantage, compatibility, ease of use, observability, and trialability significantly influenced adoption. The study, grounded in Rogers' Perceived Attributes Theory and Expectancy-Value Theory (EVT), concluded that students view ChatGPT as innovative, compatible, and user-friendly, making them open to its use as a valuable tool for independent learning in higher education.

However, this has significant implications for education, as students' comfort with using GenAI could lead to an unconscious overreliance on the tool, hindering their ability to develop independent problem-solving and critical thinking skills. Thus, understanding the factors that drive students' reliance on GenAI is crucial for addressing the potential for counterproductive learning outcomes.

Using GenAI in English language learning also has emotional impacts to college students. Studies on learning frustration indicated that this emotional state could significantly impact students' learning process, decrease motivation, and low academic performance[118,119]. This paper found out that college students who use GenAI in learning the English language display frustration when *"AI doesn't meet [their] expectations"* or when *"[the] explanations are too broad or complex."* One student explained that using GenAI is sometimes frustrating because *"...it doesn't understand your prompt even you explained it well."* Frustration in the context of learning can manifest in different ways, with its impact depending on its duration and resolution. Liu et al.[120] proposed that brief moments of confusion and frustration can be indicative of a productive struggle, where the learner is actively engaged and grappling with the material. This type of struggle is often necessary for learning, as it challenges the learner to overcome obstacles and deepen their understanding[121]. However, if confusion and frustration persist without resolution, they can lead to negative outcomes, hindering the learning process[122]. This explains why college students experience learning frustration when using GenAI: the tool often fails to meet the expectations they set when providing a prompt. The gap between their intended outcome and the actual response from the AI can create a sense of confusion, leading to frustration. This ties into Cognitive Load Theory[123], where excessive feedback without clear intellectual direction can increase extraneous cognitive load and detract from essential learning. The frustration further causes time-consuming activities as students experience learning backlogs with GenAI wherein *"...uncommon terms and vocabulary from AI made it harder for [them] to understand, requiring additional research to learn something new."* D'Mello and Graesser[124] added that unresolved confusion can eventually lead to frustration and boredom, which may further disrupt learning. Frustration is a commonly encountered emotion in technology-mediated learning environments[125] and is generally viewed as a barrier to the effective use of metacognitive strategies and overall learning[126,127].

The narrative findings of this study have significant implications in instructional strategies, pedagogical designing, and personal development. These findings underscored the necessity for teachers to reconsider and adapt their teaching methods considering the evolving GenAI[128], to ensure that students engage with content in a manner that encourage critical thinking, autonomy, and effective learning practices. Further, the study highlighted the importance of integrating a reflective approach to pedagogy, one that accounts for the cognitive and emotional responses of students[23], to better align learning experiences with the individual needs and expectations of learners. In terms of personal development, these insights suggested that students' ability to navigate and overcome challenges, such as frustration and dependency on technological tools, is fundamental to cultivating resilience, self-regulation, and independent problem-solving skills, all of which are essential for academic success and lifelong learning[129]. Thus, the findings extend beyond immediate instructional practices, influencing broader educational policy, curriculum design, and the holistic development of students within an increasingly digital learning environment.

6. Conclusion

This study explored the challenges faced by college students using GenAI tools in English language learning, focusing on two primary objectives: identifying characteristics of AI tools that hinder effective learning and examining the changes in learning behaviors caused by these tools. Students reported that GenAI language was overly technical, vague, or formulaic, which complicated comprehension and required

additional effort to understand. The inaccuracy of AI-generated content further expanded these issues, leading learners to question the reliability of the tools. These characteristics of AI tools negatively impacted the learning process, as students often had to seek alternative resources to clarify concepts and verify information. The study also found that these challenges resulted in several negative changes in learning behavior, most notably frustration, time-consuming efforts, and increased reliance on GenAI. Students expressed dissatisfaction with the inability of GenAI to meet their expectations, noting that the tools often provided answers that were either too vague, overly detailed, or contextually irrelevant. This misalignment between AI output and students' learning needs led to frustration, disengagement, and a reduced trust in AI as a dependable educational resource. Further, participants reported that the additional time required to clarify and verify information undermined the perceived usefulness of AI tools, making the learning process more burdensome rather than efficient. Lastly, the overreliance on AI tools for instant answers hindered independent learning and the development of critical thinking skills, contributing to a more passive learning approach.

Educational institutions should also consider the potential negative effects of AI on student motivation and critical thinking. While AI can be a valuable supplement to learning, its overuse may lead to diminished engagement and cognitive dependence. Therefore, it is recommended thatAI tools be used in conjunction with traditional learning methods, encouraging students to actively engage with the material rather than rely solely on technology for quick answers. Instructors should also play a key role in guiding students on how to use AI responsibly, ensuring that it serves as a tool for reinforcement and clarification, rather than as a shortcut to bypass active learning processes.

Despite the valuable narrative provided by this study, several limitations must be acknowledged. The sample size of the study was relatively small, which may not fully represent the experiences of a broader student population. The study also relied on self-reported data from participants, which may be subject to biases such as social desirability or inaccurate recall. Similarly, the data type used in the analysis was qualitative, which, while rich in detail, does not lend itself to generalization across different educational contexts or regions. Further, the methods employed, particularly the reliance on interviews and thematic analysis, provided contexts about students' personal experiences but may have overlooked the influence of other factors, such as the type of AI tools used or the students' prior familiarity with technology. Future research could benefit from employing a larger sample size, incorporating a mixed-methods approach, and exploring how different AI tools or educational frameworks impact student learning behaviors. Additionally, longitudinal studies could offer a deeper understanding of the long-term effects of AI on language acquisition and critical thinking development.

Conflict of interest

The authors declare no conflict of interest.

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