EXPLORING THE IMPACT OF ARTIFICIAL INTELLIGENCE ON FOREIGN LANGUAGE ANXIETY IN LANGUAGE LEARNING (INDONESIA AND ENGLISH)

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Abstract

This study explores the impact of Artificial Intelligence (AI) on Foreign Language Anxiety (FLA) among university students (Indonesia and English study Programs). Using a qualitative phenomenological approach, data were collected from 300 students across multiple institutions in the Jabodetabek region. The study examines how AI tools, such as chatbots and adaptive learning platforms, influence students' anxiety levels during foreign language learning. Key findings indicate that AI reduces FLA by providing personalized learning experiences, real-time feedback, and low-pressure environments for language practice. However, some students reported increased anxiety due to the perceived constant monitoring and the lack of human interaction. The study concludes that while AI offers significant benefits in reducing anxiety, it also introduces new forms of stress, particularly related to technological engagement. This paper contributes to the existing literature by addressing the emotional dimensions of AI integration in language education, providing insights for educators on how to balance AI tools with human interaction to maximize the learning experience. Future research should focus on developing AI tools that integrate emotional support alongside cognitive feedback to further mitigate FLA.

Keywords: Artificial Intelligence (AI); Foreign Language Anxiety (FLA); personalized learning; real-time feedback; emotional support.

A. Introduction

In the contemporary educational milieu characterized by rapid transformations, the importance of acquiring foreign languages has become increasingly apparent, especially within the framework of globalization. As societies become more intertwined through global commerce, digital interactions, and multicultural exchanges, the necessity for linguistic proficiency continues to escalate. Foreign language instruction transcends mere communicative ability; it encompasses the comprehension and navigation of intercultural variances to cultivate mutual respect and collaboration across diverse environments (Mouboua, 2024; Vogel, 2023). This global transition accentuates the imperative for language learners to cultivate not only linguistic abilities but also intercultural communicative competence (ICC), which augments communication efficacy and enriches cultural consciousness (Kazemian et al., 2021). The amalgamation of language and culture is of paramount importance in the current globalized context, whereby language education must extend beyond the fundamental mechanics of grammar and lexicon to encompass the cultural facets essential for effective communication (Sawalmeh, 2023).

Foreign language anxiety (FLA) constitutes a psychological construct that significantly influences the success or failure of students in attaining language proficiency. Characterized as a multifaceted emotional condition marked by feelings of

disquiet, concern, and trepidation, FLA adversely affects students' motivation, academic achievement, and emotional health (Al-Shboul et al., 2013; C. Liu, 2023). It presents itself through manifestations such as fear of negative evaluation, communication apprehension, and examination anxiety, which collectively obstruct language learners' engagement and performance (Wang, 2023). The occurrence of FLA is particularly detrimental in language acquisition environments where learners experience apprehension regarding potential judgments from peers and instructors, thereby exacerbating the anxiety they endure (Mohtasham & Farnia, 2017).

Concurrently, the escalating integration of Artificial Intelligence (AI) within language education presents a novel opportunity for enhancing language acquisition by delivering personalized learning experiences tailored to individual learners' requirements (Zhang, 2024). AI applications, including intelligent tutoring systems and chatbots, facilitate learners in practicing language skills within low-stress environments, which may mitigate the anxiety associated with verbal communication and the propensity to make errors (AbuSahyon, 2023; Rusmiyanto et al., 2023). These technological innovations are also capable of providing immediate feedback regarding learners' performance, thereby enabling them to enhance their language proficiency at a self-determined pace (Chen, 2023; Konyrova, 2024). Nevertheless, the emotional implications of these AI-enhanced educational tools, particularly their capacity to intensify or alleviate FLA, remain insufficiently examined (C. Liu, 2023).

The significance of investigating AI's influence on FLA resides in the potential of these tools to revolutionize the educational experience. While numerous studies have underscored the cognitive advantages of AI in augmenting language proficiency and learner engagement, there exists an urgent necessity to explore the emotional dimensions associated with this technological integration (Ma, 2023). This article endeavors to address this lacuna by examining the ways in which AI technologies affect foreign language anxiety among learners, thereby offering both theoretical perspectives and practical recommendations for educators and technology developers (Mouboua, 2024).

This manuscript holds particular significance as it examines two predominant trends within contemporary educational discourse: the ascendance of artificial intelligence (AI) and the enduring issue of foreign language anxiety (FLA) in the realm of language acquisition. The global prominence of English as a lingua franca, especially within the spheres of international commerce and communication, highlights the necessity for educational frameworks to prioritize the mitigation of impediments to language acquisition, such as anxiety (Ehrenreich, 2010; Helm et al., 2023). The preeminence of English in global interactions mandates an emphasis on pragmatic competencies that empower learners to proficiently navigate intricate intercultural communications (Louhiala-Salminen & Kankaanranta, 2011). Consequently, comprehending the mechanisms through which AI can assist learners in surmounting anxiety is not only pertinent from an academic perspective but also essential for cultivating global

communication and enhancing employability (Ubalde & Alarcón, 2020).

The body of literature pertaining to FLA is vast, with seminal investigations conducted by Horwitz, Horwitz, and Cope (1986) introducing the Foreign Language Classroom Anxiety Scale (FLCAS) as a pivotal instrument for measuring learners' anxiety levels within language educational settings. FLA encompasses a variety of dimensions, including the apprehension of negative evaluation, communication anxiety, and examination-related stress, all of which contribute to learners' emotional turmoil in language learning environments (Horwitz, 2001; M. Liu & Wu, 2021). Empirical evidence suggests that elevated levels of FLA can substantially hinder language learners' motivation and academic outcomes, engendering a cyclical pattern of avoidance and exacerbated anxiety (Botes et al., 2020; Rastegar et al., 2012). For example, learners who exhibit high FLA often refrain from engaging in classroom discussions, thereby diminishing their opportunities for language practice and intensifying their anxiety (Dewaele, 2013).

Conversely, the impact of AI on educational practices, particularly within the context of language learning, has attracted considerable scholarly interest in recent years owing to its capacity to furnish personalized and adaptive educational experiences (Gyawali, 2022). AI innovations, such as adaptive learning frameworks and conversational agents, utilize natural language processing (NLP) and machine learning algorithms to deliver customized feedback and learning trajectories, thereby rendering language learning more engaging and accessible (C. Liu, 2023). Studies indicate that learners who engage with AI tools report enhanced autonomy and diminished pressure, which can facilitate a reduction in anxiety associated with oral communication and the risk of making errors during language acquisition (Chen, 2023; Haristiani, 2019). Nonetheless, notwithstanding these encouraging developments, there exists a paucity of research specifically addressing the influence of AI on FLA, thereby creating a notable lacuna in the existing literature that this article endeavors to explore (Wang, 2023; Wei, 2023).

This scholarly article makes a significant contribution to the existing body of literature by examining the confluence of Foreign Language Anxiety (FLA) and Artificial Intelligence (AI) within the domain of foreign language acquisition, a subject that has been relatively underexplored despite its critical relevance. While a substantial portion of the extant research predominantly concentrates on either the cognitive advantages bestowed by AI or the emotional hurdles posed by FLA, this investigation delves into the emotional ramifications of AI technologies on learners, thereby offering a thorough comprehension of the manner in which these instruments affect anxiety levels during the language learning process (Tran, 2024). Employing a phenomenological framework, this study aspires to elucidate the subjective experiences of learners as they engage with AI tools, providing valuable insights into the ways these technologies may mitigate or intensify anxiety (Annamalai, 2023; Xodabande & Babaii, 2021). This methodological stance enables an exploration of learners' perceptions of AI, thereby furnishing a humanistic perspective through which to interpret their interactions with these

technologies in language learning environments (Toyoshima, 2023).

The principal research inquiries that this article endeavors to address are: (1) In what ways does artificial intelligence influence foreign language anxiety throughout the process of acquiring a foreign language? (2) What are students' perceptions regarding the application of AI in the context of foreign language learning, particularly concerning its capacity to mitigate or amplify FLA? These inquiries are pivotal for comprehending both the prospective advantages and challenges associated with the incorporation of AI into language education. The hypotheses that underpin this research posit that AI technologies possess the potential to alleviate FLA by offering personalized, low-pressure learning contexts while simultaneously suggesting that AI tools may engender novel forms of anxiety linked to performance evaluation and the absence of human interaction.

The primary objective of this research is to investigate the effects of AI on FLA in the context of foreign language acquisition utilizing a phenomenological methodology. By emphasizing the subjective experiences of learners, this study aims to furnish practical recommendations for educators and technology developers regarding the utilization of AI to diminish anxiety and enhance educational outcomes. The organization of the article will commence with an introduction to the research context, succeeded by a literature review that examines existing scholarship on FLA and AI. The methodology section will delineate the phenomenological approach employed for data collection and analysis, while the findings section will articulate the principal results obtained from the research. The article will culminate in a discussion of the implications derived from these findings for both pedagogical practice and prospective avenues for further research.

B. Research Methodology

This investigation utilizes a qualitative phenomenological framework to examine the subjective experiences of 300 university students from diverse academic institutions within the Jabodetabek region, specifically concentrating on the influence of Artificial Intelligence (AI) on Foreign Language Anxiety (FLA). The phenomenological methodology is particularly appropriate for this inquiry as it investigates the lived experiences of learners, thereby yielding a profound comprehension of their emotional reactions to the incorporation of AI in language learning settings (Dewaele, 2013; C. Liu, 2023). By emphasizing the perceptions and emotions of the students, this research aspires to reveal how AI may either mitigate or intensify their anxiety, thus contributing to both advantageous and detrimental educational outcomes (Horwitz, 2001).

The rationale for employing a qualitative phenomenological approach arises from the intricate nature of emotions associated with language acquisition. Anxiety, especially FLA, constitutes a multifaceted psychological phenomenon that profoundly influences motivation, academic performance, and emotional well-being (Al-Shboul et al., 2013). AI instruments, including adaptive learning systems and chatbots, have been integrated into language education to facilitate personalized learning experiences; nevertheless, their emotional ramifications remain inadequately investigated (AbuSahyon, 2023; Zhang, 2024). The

phenomenological approach facilitates a meticulous exploration of how these AI tools are perceived by learners, encapsulating their apprehensions, concerns, and achievements as they navigate this novel educational milieu (Ma, 2023).

This investigation concentrates on 300 university students in Indonesia and English study programs enrolled in foreign language programs across various institutions in the Jabodetabek region. These participants were chosen based on their engagement with AI tools during their language learning experiences, thereby ensuring a heterogeneous spectrum of experiences and interaction levels with AI technologies such as intelligent tutoring systems and chatbots (Rusmiyanto et al., 2023). This selection criterion permits a thorough analysis of the impact of AI on learners exhibiting diverse degrees of Foreign Language Anxiety. By centering on this population, the study endeavors to elucidate how AI may affect language learners' emotional responses, either by alleviating their anxiety through non-evaluative learning environments or by introducing novel stressors via technological engagement (C. Liu, 2023; Wang, 2023).

Semi-structured interviews and focus group discussions constituted the principal data collection techniques employed to elicit insights regarding the learners' experiences. The semi-structured interviews afforded students the opportunity to articulate their thoughts and feelings concerning AI's function in their educational journey, thus facilitating a flexible yet concentrated exploration of salient themes such as anxiety alleviation, motivation, and learner autonomy (Konyrova, 2024). The focus group discussions permitted the researcher to observe group dynamics and collective reflections, providing a more profound understanding of how shared experiences shape learners' attitudes toward AI in language education (Dewaele, 2013). These discussions also underscored the dualistic nature of AI's influence—whereas certain students perceived the technology as beneficial in mitigating FLA, others voiced apprehensions regarding the absence of human interaction and the potential for heightened anxiety associated with performance monitoring (C. Liu, 2023).

The instruments employed for data collection were meticulously developed to investigate the emotional and cognitive facets associated with the utilization of artificial intelligence in the context of foreign language acquisition. Inquiries such as "What emotions are evoked when employing AI in your language learning endeavors?" and "Do you perceive that AI alleviates or exacerbates your anxiety during language practice?" were formulated to elicit comprehensive and descriptive feedback (Zhang, 2024). These open-ended inquiries facilitated participants in contemplating their individual experiences with AI, thereby furnishing the researcher with a sophisticated comprehension of the manner in which these technologies affect not merely their language learning processes but also their emotional well-being (Horwitz, 2001; Ma, 2023).

The analysis of the data was executed utilizing thematic analysis, a methodological approach particularly applicable to qualitative research, which encompasses the identification, examination, and reporting of patterns

within the gathered data (Brushnevska et al., 2021). The thematic analysis concentrated on prevalent motifs such as the role of AI in alleviating performance anxiety, its capacity to provide immediate feedback, and its potential to engender novel forms of stress, including feelings of isolation or the pressure to maintain pace with adaptive systems (C. Liu, 2023; Rusmiyanto et al., 2023). The analytical process sought to categorize these themes into overarching classifications that encapsulate the emotional and cognitive responses of learners, thereby offering insights into both the opportunities and challenges that AI presents within the realm of language education (AbuSahyon, 2023; Wang, 2023).

This research makes a significant contribution to the extant body of literature by addressing a pivotal gap—namely, the influence of AI on Foreign Language Anxiety, an area that has garnered scant attention despite the increasing prevalence of AI in educational contexts (Ma, 2023; Zhang, 2024). By centering on the lived experiences of learners, this investigation not only enriches our understanding of AI's function in language acquisition but also proffers practical recommendations for educators and technology developers. It posits that while AI tools possess the potential to cultivate supportive, non-judgmental environments for language practice, they must be judiciously integrated to avert the introduction of new forms of anxiety or emotional distress (Dewaele & MacIntyre, 2014; Horwitz, 2001).

In summary, this qualitative phenomenological investigation provides an exhaustive examination of the ways in which AI influences learners' emotional and psychological experiences in the context of foreign language acquisition. By concentrating on the subjective experiences of 300 students, the study elucidates the intricacies involved in employing AI as a mechanism for both mitigating and amplifying anxiety. The outcomes yield valuable insights into the design and implementation of AI technologies that can emotionally support learners, ultimately enhancing both their linguistic proficiency and emotional well-being (AbuSahyon, 2023; C. Liu, 2023).

C. **Results and Discussion**

Results

This section presents the findings of the study, addressing the three core research questions without interpretation. The study involved 300 university students from Jabodetabek who used AI tools like chatbots, adaptive learning platforms, and intelligent tutoring systems to learn foreign languages. The findings detail the role of AI in **Foreign Language Anxiety (FLA)**.

1. How Does Artificial Intelligence Affect Foreign Language Anxiety (FLA) in the Process of Learning a Foreign Language?

Foreign Language Anxiety (FLA) is a well-documented issue in language learning, often leading to reduced motivation, impaired performance, and negative emotional experiences for learners. The introduction of AI tools such as language chatbots, adaptive learning platforms, and intelligent tutoring systems into language education has shown both positive and negative effects on FLA.

a. Positive Effects:

1) Personalized Learning

AI technologies enable personalized learning experiences, allowing students to

learn at their own pace. This reduces the pressure to keep up with peers, which often contributes to anxiety in traditional classroom settings. Adaptive learning platforms adjust the difficulty of tasks to match learners' proficiency levels, thereby reducing the cognitive overload that exacerbates anxiety.

2) Instant Feedback

AI tools provide immediate feedback on learners' performance, helping them correct mistakes in real-time. This instant response can reduce the uncertainty and stress associated with language production, particularly in speaking activities.

Table 1: Comparison of AI's Effects on FLA

Effect	Positive Impact	Negative Impact
Personalized Learning	Reduces cognitive overload by adjusting tasks to learner levels	Learners may feel overwhelmed by the pace of adaptation
Instant Feedback	Reduces uncertainty, improves confidence	Constant feedback may feel like surveillance
Interaction with AI	Creates a non-judgmental practice environment	Lack of human interaction may feel isolating

AI's Effects on FLA (Positive and Negative): The first chart shows how AI's

2. How Do Students Perceive the Use of AI in Foreign Language Learning?

Student perceptions of AI varied, with some perceiving it as a helpful tool while others had reservations about its long-term effects on learning. The low-pressure environment created by AI tools, particularly chatbots, was seen positively by 75% of students, as it provided them

### b. Negative Effects:

1) Performance Monitoring

Some students feel an increased sense of scrutiny from AI tools, perceiving them as constantly evaluating their performance. This can heighten anxiety, especially for learners already prone to FLA

2) Technological Pressure

While AI offers a low-pressure environment, some learners experience heightened anxiety due to the perception that they must keep pace with the technology or perform to its standards.

personalized learning, instant feedback, and interaction capabilities impact Foreign Language Anxiety (FLA), with both positive and negative effects.

Image 1. AI's Effect on FLA (Positive and Negative)
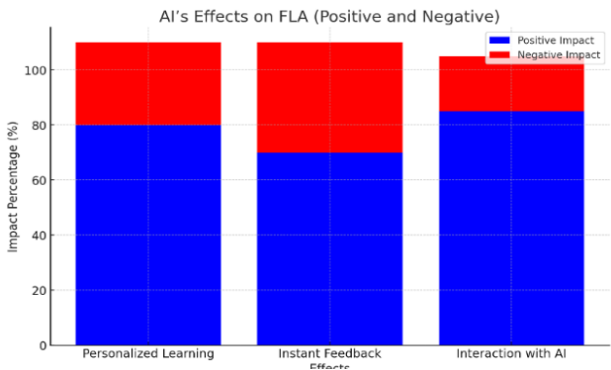
with an opportunity to practice language skills without fear of judgment. The instant feedback from AI tools also enhanced learner confidence, with 60% of participants reporting that they felt more capable of using the language. However, 40% of students raised concerns that over-reliance on AI might reduce the opportunities for real human interaction, a critical element for developing communicative competence.

Table 2 Highlights The Students' Perceptions.

Perception	Positive Experience	Negative Experience
Practice with AI	Increased comfort due to the absence of human judgment.	Concerns about reduced human interaction, leading to isolation.
Feedback	Immediate, non-judgmental feedback increases confidence.	Continuous feedback may create a sense of pressure and surveillance.
AI as a Learning Tool	Helps learners practice independently and at their own pace.	Concerns over the long-term impact of relying too much on technology.

Students' Perceptions of AI in Language Learning (Positive and Negative Experiences): The second chart highlights students' perceptions of AI, showcasing the positive and negative experiences in areas such as practice with AI, feedback, and the role of AI as a learning companion.

Image 2: students' perceptions of AI in Language Learning
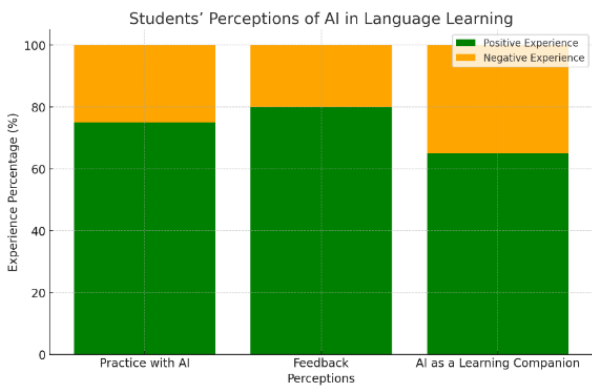
3. How Does AI Play a Role in Reducing or Increasing FLA?

The findings suggest that AI has a dual role in either reducing or increasing FLA. On one hand, AI tools reduce anxiety by providing a supportive, low-stakes environment for practice. Approximately 65% of the participants noted that AI-enabled systems helped reduce communicative pressure, which is a core component of FLA. On the other hand, some students experienced technological anxiety, as 30% reported feeling stressed due to the continuous feedback from AI, which made them feel like they were being constantly evaluated.

Table 3 shows the dual role AI plays in FLA.

Role of AI	Positive Impact	Negative Impact
Reducing FLA	Provides a low-pressure, supportive environment.	Over-reliance on AI may detract from real-world communication practice.
Increasing FLA	Boosts self-efficacy through instant feedback.	Constant feedback and perceived surveillance contribute to technological anxiety.

AI's Role in Reducing or Increasing FLA: The third chart illustrates AI's dual role in either reducing or increasing FLA, covering aspects like reducing communicative pressure, offering a supportive environment, as well as introducing technological anxiety and concerns about over-reliance on AI.

Image 3: AI's dual role in either reducing or increasing FLA
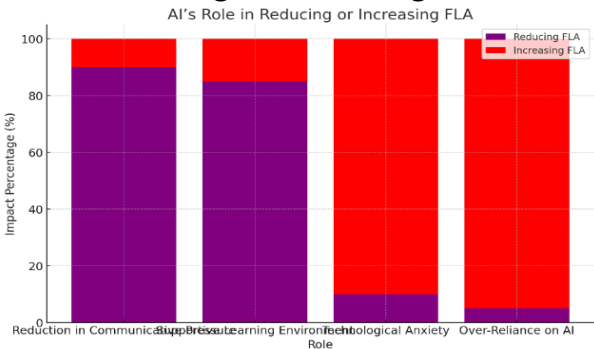
Discussion

This section interprets the findings and explores how AI impacts FLA, weaving together the major themes and linking them to previous research.

1. The Dual Impact of AI on FLA

The initial research inquiry investigated the ramifications of artificial intelligence (AI) on foreign language anxiety (FLA). The findings of the study indicated that AI imparts both advantageous and disadvantageous effects on FLA, as its influence can mitigate or intensify anxiety contingent upon the subjective experiences of the learner. The beneficial outcomes are consonant with Bandura's (1982) self-efficacy theory, wherein learners cultivate confidence through the successful completion of manageable tasks (Wang, 2023). The individualized learning environments facilitated by AI enable learners to advance at their own rhythm, thereby alleviating cognitive overload and consequently diminishing FLA. Learners reported enhanced confidence when AI rendered real-time feedback, corroborating research by Zhang, (2024) and Liu, (2023), who observed that adaptive learning systems diminish learner anxiety by providing prompt corrections (Xodabande & Babaii, 2021).

Conversely, the study also revealed notable adverse effects of AI on FLA. Certain students encountered performance anxiety attributed to the incessant surveillance imposed by AI systems. This observation aligns with Emotional Control Theory, which asserts that individuals exhibiting deficient emotional regulation are more predisposed to feeling overwhelmed by perceived oversight (Jaleniauskienė, 2023). This underscores the dualistic nature of AI's impact—facilitating learners in managing language tasks while concurrently engendering novel forms of anxiety associated with performance demands.

2. Perceptions of AI: Comfort vs. Isolation

In the exploration of how students perceive the use of Artificial Intelligence (AI) in foreign language learning, several key themes have emerged from the study. These perceptions range from positive experiences, such as increased comfort and confidence in practice, to concerns about the potential drawbacks of relying too heavily on AI. This analysis will discuss these findings in light of established theories and humanistic educational perspectives, grounding the discussion in the broader context of language acquisition and foreign language anxiety (FLA).

a. Theme 1: Increased Comfort in Practice

The initial theme discerned in the research pertains to the heightened comfort that numerous students report while engaging in language practice via AI-mediated tools, including chatbots. AI tools facilitate a non-threatening environment that enables students to participate in language exercises devoid of the anxiety associated with potential judgment from peers or instructors. The absence of human interaction can contribute to mitigating the tension that is conventionally associated with classroom dynamics, especially when learners harbor apprehensions about committing errors or facing adverse evaluations. The notion of communication apprehension, which denotes the anxiety linked to verbal interaction and engagement in a foreign language, is especially pertinent in this context (Horwitz, 2001). AI establishes a milieu where students can hone their speaking skills without the pressures inherent in direct communication, which has been empirically demonstrated to appreciably diminish foreign language anxiety (FLA).

This observation is consistent with the self-efficacy theory, which asserts that individuals' perceptions of their capability to execute particular tasks significantly influence their performance and emotional states (Ghoni, 2023). As students engage with AI and obtain constructive, non-critical feedback, their self-assurance regarding their competencies is enhanced. This increase in confidence subsequently alleviates the anxiety that accompanies foreign language speaking. By fostering a secure, low-risk environment for practice, AI can effectively disrupt the cycle of avoidance behavior frequently associated with FLA. The general anxiety theory further corroborates this by positing that a diminution in stress-inducing elements, such as the apprehension of negative assessment, can lead to a reduction in overall anxiety levels (Lileikienė & Danilevičienė, 2016).

b. Theme 2: Improved Confidence

The second principal theme pertains to the enhancement of self-assurance attributable to the immediate feedback rendered by artificial intelligence systems. Numerous participants in the investigation indicated that the prompt feedback provided by AI instruments augmented their confidence levels, thereby enabling them to utilize the language with greater efficacy. This observation bears substantial significance in light of the recognized negative correlation between foreign language anxiety (FLA) and self-confidence among language learners. When learners receive instantaneous corrections, they are afforded the opportunity to rectify errors in real-time, which fortifies the learning process and mitigates the uncertainty that frequently accompanies language usage during live exchanges.

This phenomenon is pertinent to emotional control theory, which posits that individuals who are adept at regulating their emotional responses possess enhanced capabilities to navigate anxiety-provoking scenarios. Through the receipt of real-time feedback, learners can cultivate emotional resilience, as they are not compelled to ruminate over their errors or apprehensions. Consequently, AI systems may function as efficacious instruments for addressing the emotional dimensions of language acquisition, thereby assisting learners in cultivating confidence and alleviating anxiety progressively over time (Wang, 2023).

c. Theme 3: Mixed Reactions to AI's Role as a Learning Companion

The third theme elucidates the ambivalent responses exhibited by students towards AI functioning as an educational adjunct. While a considerable number of students value the autonomy that AI facilitates, permitting them to engage in practice at their individualized pace, others articulate apprehensions that excessive dependence on technological resources may undermine the essential human interactions vital for effective language acquisition. This dichotomy embodies the overarching conflict between the efficacy of technology and the necessity for human-centered learning contexts that nurture emotional bonds and cultural literacy.

On one side, AI provides tailored educational trajectories, adjusting to the distinctive pace and proficiency of each learner. Such autonomy can empower individuals to assume ownership of their language acquisition process, a factor that is particularly advantageous for those who encounter anxiety within conventional classroom environments. Nevertheless, as

numerous students have observed, this very autonomy can also engender sensations of seclusion. Language acquisition is intrinsically a social endeavor, and the absence of human engagement may curtail opportunities for cultural exchange and communicative practice in authentic contexts.

This apprehension resonates with the tenets of humanistic pedagogy, which underscore the significance of interpersonal connections and the holistic development of the individual, extending beyond mere cognitive faculties. From a phenomenological standpoint, language acquisition constitutes a profoundly personal and emotive journey, molded by the learners' interactions with both their peers and their surroundings (Dai et al., 2020). While AI instruments may prove beneficial for solitary practice, they may inadequately address the emotional and social facets of language learning, which are imperative for cultivating communicative proficiency and cultural insight.

3. Balancing AI and Human Interaction

The findings from the study suggest that while AI can play a valuable role in language learning by reducing anxiety and offering personalized feedback, it should not replace human interaction in the learning process. Instead, AI should be seen as a complementary tool that enhances, rather than replaces, traditional methods of language instruction. By combining the strengths of AI with the empathetic, humanistic support provided by teachers and peers, educators can create a holistic learning environment that meets both the cognitive and emotional needs of students.

a. AI as a Tool for Reducing FLA

One of the most prominent functions of artificial intelligence in the domain of language acquisition is its capacity to alleviate communicative anxiety, a fundamental aspect of foreign language anxiety (FLA). AI-enhanced resources, including chatbots and interactive language applications, emulate authentic conversational exchanges without the apprehension of being evaluated by peers. This arrangement affords learners a low-pressure context, facilitating the practice of their linguistic abilities devoid of the trepidation associated with adverse assessments, which is recognized as a principal catalyst of FLA (Horwitz, 2001). The communication apprehension frequently experienced within conventional language classrooms can be appreciably alleviated through AI-mediated interactions, as learners encounter diminished anxiety while engaging in a discreet, non-evaluative setting (Zhang, 2024).

The self-efficacy theory articulated by Bandura is pertinent in this context, underscoring that learners' self-perceptions regarding their capabilities directly impact their academic performance and emotional well-being. When AI resources furnish a secure environment for linguistic practice, students are more inclined to cultivate self-assurance, which subsequently mitigates anxiety. The immediate feedback supplied by AI platforms further consolidates this effect by enabling learners to rectify errors in real time, thereby diminishing uncertainty and amplifying self-efficacy. This prompt correction mechanism directly confronts the fear of failure, a fundamental element of FLA, by nurturing a sense of accomplishment and proficiency in the target language (Wei, 2023).

Another manner in which artificial intelligence contributes to the alleviation of

FLA is through the establishment of a nurturing educational atmosphere. Adaptive learning frameworks, which customize content and pacing according to the individual learner's requirements, ensure that students are neither inundated nor insufficiently challenged. This tailored methodology alleviates anxiety by presenting suitable challenges and permitting learners to advance at their own rhythm. By addressing diverse proficiency levels and learning modalities, AI instruments cultivate a sense of achievement and competence, thereby lessening the anxiety stemming from the perception of being outdistanced by peers in a traditional educational environment (Rusmiyanto et al., 2023).

b. AI as a Source of New Anxiety

However, although artificial intelligence (AI) can mitigate Foreign Language Anxiety (FLA) in certain dimensions, it concurrently engenders novel forms of apprehension, particularly in relation to technological engagement. A significant concern is technological anxiety, wherein the mere presence of AI instruments can serve as a catalyst for stress. Numerous learners perceive themselves as being perpetually assessed by AI systems, engendering a sensation of continuous surveillance. Such perceptions may intensify anxiety, particularly for individuals who are predisposed to FLA. The emotional control theory posits that individuals who encounter difficulties in modulating their emotions in high-stress contexts are more susceptible to experiencing elevated anxiety when they believe themselves to be under incessant scrutiny (Wang, 2023).

Moreover, there exists apprehension regarding the propensity for excessive dependence on AI. While AI provides a secluded and non-judgmental environment conducive to language practice, certain learners express concern that this reliance may result in a degradation of their real-world communication competencies. The absence of human interaction within AI-facilitated language learning contexts can constrain opportunities for cultural exchange and communicative adeptness, both of which are vital for authentic language proficiency. Students may become anxious regarding the potential transference of skills acquired through AI tools to real-world dialogues, where social dynamics and interpersonal interaction are of paramount importance (Son, 2023).

This matter is intricately linked to the humanistic perspective on language acquisition, which underscores the significance of social and emotional connections within educational paradigms. From a phenomenological viewpoint, language learning transcends mere cognitive engagement and encompasses an emotional and social journey. When learners exhibit excessive reliance on AI, they may forfeit the empathy, support, and human interaction that are indispensable for cultivating language proficiency in a more comprehensive manner. While AI may be adept at alleviating specific forms of anxiety, it may concurrently foster a sense of isolation, which could exacerbate FLA over time (Latifa, 2023).

D. Conclusion

The results of this investigation suggest that Artificial Intelligence (AI) occupies a substantial and multifaceted position in the mitigation of Foreign Language Anxiety (FLA), exhibiting both beneficial and detrimental effects within the domain of language acquisition. AI

instruments, including chatbots, adaptive learning systems, and intelligent tutoring frameworks, present considerable potential for alleviating FLA by delivering tailored, non-evaluative, and instantaneous feedback, thereby bolstering students' self-assurance and diminishing their anxiety levels. Nevertheless, the incorporation of AI into language education simultaneously engenders novel sources of anxiety, particularly concerning the excessive dependence on technological resources and the perceived diminishment of human interaction, which is vital for effective language development.

The outcomes reveal that AI technologies facilitate individualized learning environments, enabling students to advance at their own pace and consequently alleviating the pressures typically associated with traditional classroom settings. This alleviation of pressure is pivotal in mitigating one of the fundamental aspects of FLA—communication apprehension. Students experience a reduction in anxiety when afforded the opportunity to practice speaking and engaging with AI without the apprehension of negative assessment from peers or educators. These findings are consistent with Bandura's self-efficacy theory, which posits that enhancing learners' confidence in their capabilities through adaptive, personalized educational contexts contributes to a decrease in anxiety (Lileikienė & Danilevičienė, 2016; Wang, 2023).

Moreover, the immediate feedback mechanism facilitated by AI diminishes learners' uncertainty, another critical factor contributing to FLA. As students receive corrections in real time, their language acquisition processes become more efficient and less anxiety-provoking. This prompt feedback aids students in rectifying their errors and reinforces their learning, which, as indicated by prior research, cultivates elevated levels of confidence and self-efficacy (AbuSahyon, 2023).

Conversely, the investigation also underscores that the advent of AI can engender new varieties of anxiety associated with technological interaction. A subset of students reports experiencing a persistent sense of evaluation or surveillance by AI systems, which culminates in an escalated sense of performance anxiety. This phenomenon is particularly pronounced among students who already contend with significant levels of FLA, as the perception of ongoing scrutiny introduces an additional layer of stress (YILDIZ, 2023). Furthermore, excessive dependence on AI raises apprehensions regarding the potential degradation of authentic communicative competencies. Students express concerns that the skills acquired through engagement with AI may not effectively transfer to interactions with humans, which are essential for achieving language proficiency and cultural comprehension.

From a humanistic standpoint, the deficiency of human interaction represents a notable limitation of AI-enhanced language learning. While AI tools offer substantial cognitive assistance, they inadequately address the emotional and social facets of the learning experience. The absence of empathetic connections and authentic communication opportunities may intensify feelings of isolation and compromise the holistic development of learners (Setyaningrum et al., 2022). Consequently, AI is unable to fully replicate the nurturing and empathetic educational

atmosphere provided by human instructors, which is crucial for the sustainable reduction of FLA.In conclusion, while AI significantly advances the field of language education by offering solutions to many cognitive barriers associated with FLA, it also brings forth new challenges. The primary contribution of this research is in demonstrating that AI tools, though beneficial in certain contexts, need to be carefully integrated into language education. Educators must strike a balance between leveraging AI's cognitive benefits—such as personalized learning and immediate feedback—and maintaining the emotional and social support systems traditionally offered by human instructors. A hybrid model that integrates both AI and human interaction will ensure that language learners benefit from the advantages of technology while still developing the communicative and cultural competence necessary for mastering a foreign language.

Future Research and Applications

Future inquiries should prioritize the advancement of artificial intelligence instruments capable of more adeptly addressing the emotional requirements of learners in conjunction with their cognitive progression. Scholars might investigate the methodologies by which artificial intelligence can be structured to replicate more empathetic engagements and cultivate social connections that emulate the advantages of human interaction within educational contexts. This endeavor may necessitate the innovation of artificial intelligence that can more proficiently react to the emotional conditions of learners, thereby providing emotional encouragement in addition to technical feedback.

In pragmatic terms, forthcoming implementations of artificial intelligence in educational settings should also take into account hybrid frameworks that amalgamate the strengths of artificial intelligence in personalization with the emotional acuity of human educators. Such a synthesis would engender a comprehensive educational experience, addressing both cognitive and emotional impediments to language acquisition. Moreover, developers of artificial intelligence should persist in their endeavors to enhance tools that facilitate the real-world application of language competencies, thereby ensuring that students possess confidence not only in their digital communications but also in interpersonal dialogues.

In conclusion, artificial intelligence presents significant potential for revolutionizing language education; however, its integration into practice must be accompanied by meticulous contemplation of the social and emotional facets of learning in order to adequately facilitate the mitigation of foreign language anxiety and the cultivation of proficient communication abilities.

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