

EXPLORING STUDENTS' EXPERIENCES OF USING AVATAR AI FOR LEARNING ENGLISH GRAMMAR IN HIGHER EDUCATION

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Abstract

The incorporation of Artificial Intelligence (AI) into language teaching has generated novel prospects for improving grammar instruction in higher education. Among upcoming AI technologies, Avatar AI provides interactive and human-like communication that may enhance students' grammar learning experiences. Nevertheless, research examining the application of Avatar AI for grammar training in higher education is scarce. This study sought to examine the application of Avatar AI in grammar instruction for higher education students and to investigate their experiences of learning grammar via Avatar AI. A qualitative case study design was utilised, comprising ten first-year students from an English Education Department who had utilised Avatar AI for grammar acquisition. Data was gathered via semi-structured interviews and examined through thematic analysis. The results indicated that Avatar AI was mostly employed as an ancillary educational resource, offering grammatical elucidations, prompt corrective feedback, and avenues for autonomous learning outside of classroom instruction. Students indicated utilising Avatar AI to practise grammatical concepts, detect faults, and obtain immediate corrections. The results suggested that students typically had favourable experiences when studying with Avatar AI. The technology augmented engagement refined grammatical comprehension, bolstered drive and confidence, and alleviated fear in English usage. The interactive and non-judgmental characteristics of Avatar AI fostered increased student engagement in language instruction. Nonetheless, various challenges were identified, including internet connectivity problems, inaccuracies in speech recognition, complexity of vocabulary, and constraints in contextual comprehension. Students regarded Avatar AI as advantageous, although they uniformly considered it a supplementary resource rather than a substitute for instructors. The research finds that Avatar AI possesses considerable potential to enhance grammar acquisition in higher education when incorporated into a blended learning model that merges AI-assisted instruction with educator support.

Keywords: Avatar AI, grammar instruction, higher education, AI-assisted learning; student experiences

INTRODUCTION

The swift progression of artificial intelligence (AI) in educational environments has created unparalleled prospects for redefining the delivery of language training, especially in higher education. The rise of avatar-based AI systems, which are interactive virtual agents that visually reflect human communication patterns, has garnered scholarly attention as potential teaching tools. Bickmore and Schulman (2024) observed that AI-driven educational avatars signify a substantial advancement from earlier educational technologies, as they can comprehend learners' verbal input, produce contextually relevant responses via large language models, and respond with synthetic voice output. The incorporation of avatar AI into university-level classes offers a promising opportunity to

address the challenges and disengagement associated with grammar education in English language learning.

Grammatical proficiency is universally recognised as a fundamental component of good communication. Without a comprehensive understanding of grammatical structures, learners find it challenging to articulate meaning accurately, so constraining their academic and professional paths. Notwithstanding its significance, grammar training has been often critiqued for its dependence on decontextualised exercises and mechanical memorisation. Thornbury (1999) contended that conventional grammar instruction frequently does not connect formal knowledge with practical application, leaving pupils technically knowledgeable but practically limited. The conflict between declarative and procedural knowledge has persistently posed challenges for tertiary educators, who require pupils to generate grammatically precise academic writing while concurrently cultivating critical and creative thinking abilities.

The advent of technology-mediated learning settings has progressively transformed this domain. Digital instruments, including grammar-checking software, language acquisition programs, and AI-driven chatbots, have been progressively incorporated into language education, offering students immediate feedback and tailored practice chances. Warschauer and Healey (1998) noted that computer-assisted language learning (CALL) was not just an addition to conventional teaching but a significant alteration in the learner-teacher relationship. Wollny et al. (2021), in a systematic literature review of chatbots in education, established that AI-driven conversational agents have significantly advanced, facilitating more nuanced, context-aware, and adaptive interactions that enhance various aspects of language learning, including grammar, vocabulary, and speaking fluency.

Avatar AI, as a component of these technologies, adds a uniquely humanised aspect to language acquisition. In contrast to static applications or text-based chatbots, avatar AI systems offer learners animated or semi-realistic virtual characters who can deliver spoken feedback, illustrate sentence formation, and participate in simulated dialogue. Vygotsky's sociocultural theory (1978) asserts that learning is most efficacious when facilitated by social interaction and the guidance of a more knowledgeable individual. Avatar AI may serve as an artificial "more knowledgeable other," facilitating pupils' grammar acquisition through interactive and responsive dialogue. Kim and Baylor (2016) underscored that effectively developed pedagogical agents can assume several instructional roles—such as motivator, mentor, and co-learner—which together augment learner engagement and information retention. This theoretical and practical congruence significantly enhances the legitimacy of avatar AI in formal language education.

Studies in educational technology have progressively recorded the motivational and cognitive advantages of avatar-based learning environments. Mayer and Fiorella (2021), drawing upon the cognitive theory of multimedia learning, asserted that learners exhibit deeper engagement when content is presented through integrated verbal and visual modalities, since this diminishes superfluous cognitive load and facilitates meaningful processing of new information. Avatar AI directly addresses these cognitive concepts by integrating aural explanations with visual depiction. Belda-Medina and Calvo-Ferrer (2022) discovered that AI-driven conversational agents promote significant interaction in foreign language settings, alleviating affective barriers such as anxiety and fear of negative evaluation, which are particularly pronounced when students must generate grammatical output in a second language.

These factors are particularly relevant at the higher education level. University students typically exhibit greater self-direction and metacognitive awareness than younger learners, while concurrently confronting increased demands for academic precision. Li and Walsh (2011) observed that tertiary-level EFL learners derive substantial advantages from explicit grammar instruction combined with opportunities for meaningful practice. Yang et al. (2022) recently demonstrated that AI chatbot partners in university EFL classrooms resulted in significant enhancements in students' linguistic accuracy and communicative confidence, indicating that avatar AI, with its superior multimodal capabilities, offers even greater potential for grammar development at this level. Lin and

Mubarok (2021) reported that brief daily AI-assisted exchanges resulted in substantial improvements in EFL learners' fluency and grammatical awareness over time, underscoring the need of regular, technology-facilitated language practice.

The incorporation of big language models into educational avatars has enhanced their instructional capabilities. Kasneci et al. (2023) emphasised that LLM-powered systems may produce personalised, context-aware feedback on learners' language output, encompassing grammar and syntax, a capability that exceeds the rule-based responses of previous chatbot iterations. When integrated into an avatar interface, such feedback becomes more immediate and socially engaging, since the humanised presence of the avatar enhances the perceived communicative authenticity of the engagement.

Despite increasing interest in avatar AI within educational settings, empirical studies focusing on its use for grammar instruction in higher education are still scarce. Although exploratory research have examined the use of avatars in vocabulary learning and general language practice, the specific application of avatar AI as a tool for grammar instruction has not been extensively explored. This gap in the literature signifies a substantial research opportunity, especially considering the growing implementation of AI tools in Indonesian institutions and other environments where English is instructed as a foreign language.

This study seeks to investigate the application of avatar AI in grammar instruction for higher education students and to analyse their experiences in learning grammar with this technology. This research aims to enhance the existing knowledge on AI-assisted language instruction and offer practical insights for educators and curriculum designers integrating intelligent technologies into formal learning settings.

METHOD

This research utilised a qualitative case study methodology to examine the application of avatar AI in instructing grammar to students within the English Education Department at Universitas Islam Negeri Alauddin Makassar, Indonesia. This research employs a case study approach, facilitating a comprehensive and contextually nuanced examination of the experiences of English Education students within a singular academic cohort utilising avatar AI-assisted grammar instruction (Yin, 2018). In contrast to quantitative methods that aim for generalisability over extensive populations, the case study design allows the researcher to capture the intricate perceptions, attitudes, and learning experiences of participants interacting with a relatively innovative educational device. This corresponds with the interpretivist paradigm that underlies this study, asserting that meaning is derived from individuals' lived experiences and social interactions (Creswell & Poth, 2018).

The study was carried out in the English Education Department of a higher education institution in Indonesia. Participants were chosen from first-year undergraduate students who had utilised avatar AI tools during their grammar instruction. Purposive sampling was utilised as the sampling approach, adhering to the notion that participants should be chosen based on their capacity to furnish information-rich data pertinent to the study questions (Patton, 2015). Participants were selected based on the following criteria: (1) currently enrolled as first-year students in the English Education Department, (2) possessed direct experience utilising avatar AI in grammar learning activities, and (3) exhibited a willingness to articulate their experiences comprehensively during interviews.

Ten participants were selected. This sample size is deemed adequate and suitable for qualitative case study research, where the objective is theoretical depth rather than statistical representation. Creswell and Poth (2018) contended that smaller purposive

samples in qualitative research facilitate more concentrated and significant data gathering, especially when the phenomenon being examined is context-specific. The participants were first-year students with differing levels of English ability and prior experience with digital learning technologies, so ensuring a range of opinions captured. The emphasis on first-year students is particularly important, as this phase signifies a crucial transitional period during which learners are adjusting to the academic requirements of higher education while concurrently encountering technology-enhanced learning environments for the first time at the university level.

Data were gathered using semi-structured interviews, which constituted the principal instrument of this study. Semi-structured interviews were chosen for its equilibrium between consistency and adaptability, presenting a series of planned guiding questions while permitting the interviewer to explore further based on participants' replies (Brinkmann & Kvale, 2018). This adaptability is especially beneficial in exploratory research about technology-mediated learning experiences, where participants may present unforeseen insights that necessitate further examination.

The interview guide was constructed in accordance with research questions and informed by pertinent literature regarding avatar AI, grammar instruction, and learner attitudes of technology in education. The guide addressed multiple thematic domains, encompassing: (1) participants' overall experiences with avatar AI in grammar acquisition; (2) perceived advantages and drawbacks of avatar AI as a grammar instructional resource; (3) emotional reactions to engaging with avatar AI, including involvement, motivation, and anxiety; and (4) preferences concerning the incorporation of avatar AI relative to traditional grammar pedagogy. Before data collection, the interview guide underwent evaluation by two expert validators: a language education specialist and an educational technology scholar, to verify content validity and linguistic clarity.

Each interview was performed individually over video call, contingent upon the participants' availability and preferences. Interviews lasted roughly 45 to 60 minutes and were audio-recorded with the informed agreement of participants. All participants were guaranteed the secrecy of their responses and the voluntary nature of their involvement. The interviews were performed in both English and Indonesian to enable participants to articulate their experiences with optimal clarity and comfort.

The data obtained from the interviews were examined by theme analysis as suggested by Brown (2006). Brown's framework for thematic analysis in applied linguistics and language education research offers a systematic and transparent methodology for detecting, organising, and interpreting patterns of meaning in qualitative data. The analysis progressed through the steps defined by Brown (2006).

The initial phase entailed an immersion in the material, during which the researcher meticulously studied and listened to the interview transcripts to cultivate a thorough comprehension of the overarching topic. During the second stage, preliminary codes were produced by methodically annotating significant pieces of data, including words, sentences, or segments pertinent to the study enquiries. The third stage entailed the identification of themes, during which the generated codes were organised and classified into prospective thematic groups that encapsulated overarching trends in participants' responses. In the fourth stage, the identified themes were evaluated and enhanced to guarantee internal consistency within each theme and a clear differentiation across themes. The fifth stage involved delineating and designating the themes, with each theme receiving a descriptive

term that precisely represented its intellectual essence. In the last stage, the themes were analysed and articulated in connection with the research questions and available literature, resulting in a cohesive analytical narrative.

To augment the credibility of the analysis, member checking was utilised, in which a summary of the emergent themes was presented to selected participants to confirm the precision of the researcher's interpretations (Lincoln & Guba, 1985). An audit trail was consistently upheld during the analytical procedure to guarantee transparency and methodological precision.

Ethical clearance was secured from the pertinent institutional authority before data collection commenced. All participants furnished written informed permission and were thoroughly told of the study's objectives, their right to withdraw at any moment, and the safeguards established to ensure their anonymity. All participant names were substituted with pseudonyms in all research output to maintain confidentiality.

RESULTS AND DISCUSSION

The Utilization of Avatar AI in Teaching Grammar to Higher Education Students

1. Avatar AI as a Source of Grammar Explanation and Learning Materials

The findings revealed that Avatar AI was utilized to explain grammar concepts and provide learning materials related to various grammatical topics, including tenses, passive voice, sentence structure, and conditional sentences.

R2 stated:

"Avatar AI provides very detailed examples and clear explanations." (R2)

Similarly, R10 explained:

"Avatar AI helps me understand grammatical structures. When I was confused about the simple past tense, Avatar AI helped me understand the formula." (R10)

R8 also reported:

"Avatar AI helps explain the content of the material." (R8)

The findings indicate that Avatar AI served as a digital pedagogical instrument that enhanced grammar acquisition via elucidations and illustrations. Students regarded the explanations as beneficial for facilitating their independent comprehension of grammar principles. This discovery corroborates Mayer's (2021) Cognitive Theory of Multimedia Learning, which posits that learners comprehend information more efficiently when verbal and visual elements are amalgamated. Moreover, Wahyuni (2020) asserts that technology-enhanced language learning fosters learner-centred instruction by granting students increased access to educational resources. The results correspond with Hartono (2015), who contends that technology-mediated language learning environments enhance learning efficacy by offering accessible and engaging materials.

2. Avatar AI as a Provider of Immediate Corrective Feedback

Another important function of Avatar AI was providing immediate corrective feedback. Students reported receiving direct corrections whenever they made grammatical mistakes.

One participant explained:

"As soon as I said, 'I am go to campus,' Avatar AI immediately corrected it to 'I go to campus' or 'I'm going to campus.'" (R1)

Similarly, R9 stated:

"Avatar AI usually points out where I went wrong, provides the correct answer, and explains why the sentence was incorrect." (R9)

R10 also commented:

"Avatar AI provides feedback on grammar, verb tenses, sentence structure, word choice, and proper verb usage"
" (R10)

The capacity to deliver prompt remedial feedback was regarded as one of the most advantageous attributes of Avatar AI. Ellis (2009) asserts that corrective feedback aids learners in recognising linguistic faults and enhancing language correctness. Hattie and Timperley (2007) assert that prompt feedback markedly improves learning outcomes by aiding learners in comprehending the disparity between their current and anticipated performance. The results corroborate Li (2022), who discovered that AI-driven language learning tools enhance grammatical precision via immediate and personalised feedback. Consequently, Avatar AI seems to enhance grammar acquisition by enabling pupils to recognise and rectify errors instantaneously.

3. Avatar AI as a Flexible Tool for Independent Learning

The findings also indicated that Avatar AI enabled students to learn independently outside classroom hours.

R10 stated:

"I can study anytime and anywhere without having to wait for a schedule" (R10)

Likewise, R9 explained:

"The biggest advantage is that we can learn anytime and get immediate feedback." (R9)

The flexibility provided by Avatar AI facilitated independent learning by enabling students to practise grammar outside of formal classroom environments. This research corroborates Wahyuni (2018), who contends that instructional technology fosters student

autonomy by facilitating self-paced learning. Hartono (2021) asserts that digital learning tools enhance learning possibilities and improve access to educational resources. The capacity to learn at any time and in any location seems to be a primary advantage of Avatar AI in higher education settings.

Students' Experiences in Learning Grammar through Avatar AI

1. Increased Engagement and Positive Learning Experiences

Most participants reported positive experiences when learning grammar through Avatar AI.

R7 stated:

"Using an AI avatar to learn grammar is quite an interesting experience because it's something new." (R7)

R8 explained:

"Interacting with the AI avatar is pretty fun because it's animated, so it doesn't get too boring." (R8)

Similarly, R9 commented:

"Learning grammar isn't so boring because there are avatars to explain it." (R9)

The findings demonstrate that Avatar AI enhanced learner engagement via interactive and multimodal learning experiences. Mayer (2021) asserts that multimedia learning environments enhance engagement by concurrently engaging several cognitive processes. Wang and Liu (2023) similarly discovered that AI-enhanced learning environments improve student participation and engagement. The innovation of engaging with an AI-driven avatar seems to enhance students' enthusiasm for grammar acquisition.

2. Improved Confidence, Motivation, and Reduced Anxiety

Many participants reported feeling more confident and motivated when learning through Avatar AI.

R1 stated:

"With Avatar AI, even if I get 10 things wrong, no one will know. So, I feel more confident trying to speak." (R1)

R5 explained:

"I feel comfortable and confident because the AI Avatar won't judge me." (R5)

Similarly, R10 commented:

"I don't worry about making mistakes, so I'm more confident using English." (R10)

The results indicate that Avatar AI established a psychologically secure educational atmosphere. Students experienced ease in making errors due to the absence of apprehension of adverse assessment from peers or instructors. This research corroborates Krashen's (1982) Affective Filter Hypothesis, which posits that reduced anxiety enhances language acquisition. Dörnyei (2009) contends that pleasant emotional experiences substantially enhance learner motivation. The non-judgmental disposition of Avatar AI seems to alleviate anxiety and promote more vigorous language practice.

3. Challenges and Limitations in Using Avatar AI

Despite the positive experiences, students identified several challenges.

R6 stated:

"If the connection is bad, the AI speaks haltingly." (R6)

R1 reported:

"Sometimes when I talk about my thesis, he thinks I'm talking about a script." (R1)

R9 explained:

"Sometimes the explanations from Avatar AI use words that are a little hard for me to understand." (R9)

The results indicate that technical and pedagogical constraints continue to pose substantial hurdles in the deployment of Avatar AI. These encompass internet connectivity problems, voice recognition inaccuracies, and challenges in contextual comprehension. Holmes et al. (2022) contend that AI-driven teaching technologies continue to encounter constraints in natural communication and contextual understanding. Zawacki-Richter et al. (2019) similarly observe that AI systems frequently fail to emulate the adaptability of human educators. These limitations underscore the necessity for additional technological advancement to enhance the efficacy of Avatar AI in language acquisition.

4. Avatar AI as a Complementary Tool to Lecturers

Participants consistently emphasized that Avatar AI should support rather than replace lecturers.

R7 stated:

"Lecturers are better at providing detailed explanations and tailoring them to students' needs" (R7)

R9 explained:

"The AI avatar can be used at any time, but the lecturers provide a more in-depth explanation." (R9)

Despite the favourable perception of Avatar AI, students continued to prioritise professors' competence, contextual elucidations, and the capacity to tailor instruction to meet learners' requirements. This discovery corroborates the assertions of Luckin et al. (2016), who contend that AI ought to augment rather than supplant human instruction. Similarly, Wahyuni (2020) underscores that technology serves most efficiently as an instructional assistance instrument. Consequently, a blended learning model integrating Avatar AI with instructor guidance seems to be the most suitable method for grammar training in higher education.

CONCLUSION

This study examined students' experiences with Avatar AI as a resource for studying English grammar at the university level. The results indicated that students predominantly possessed favourable views regarding the incorporation of Avatar AI in grammatical education. The technology was regarded as an innovative and captivating educational medium that provided a distinct experience compared to conventional classroom instruction. The interactive and visual characteristics of Avatar AI heightened students' engagement in grammar learning and alleviated the monotony typically linked to studying grammatical rules via textbooks or traditional lectures. For numerous students, engaging with Avatar AI resembled conversing with an actual individual, hence augmenting their involvement and participation in educational activities.

The research additionally revealed that Avatar AI significantly enhanced pupils' comprehension of grammatical principles. Participants emphasised the efficacy of prompt corrective feedback, lucid explanations, and applicable examples offered by the system. The capacity for immediate corrections allowed pupils to recognise grammatical problems, comprehend the underlying causes of those errors, and prevent recurrence of the same mistakes in the future. Moreover, certain students indicated that Avatar AI facilitated vocabulary enhancement by presenting novel words and phrases during engagements. The findings indicate that Avatar AI can function as a useful adjunct for enhancing grammatical precision and facilitating autonomous language acquisition.

A notable discovery was the beneficial impact of Avatar AI on students' motivation, confidence, and emotional well-being. Students valued the system's non-judgmental approach, enabling them to practise English without apprehension of embarrassment or adverse assessment. Consequently, students experienced more confidence in language experimentation and shown a greater willingness to speak in English. The ability to learn at any time and place significantly increased students' motivation by offering possibilities for self-directed learning outside of classroom hours. This suggests that Avatar AI can facilitate the establishment of a psychologically secure learning environment that promotes active engagement and ongoing practice.

Notwithstanding these benefits, the investigation revealed numerous obstacles and limitations. Technical difficulties, especially unreliable internet connections, were identified as the predominant barrier impacting learning experiences. Students saw constraints

concerning speech recognition precision, contextual comprehension, lexical complexity, and the repetitious presentation of explanations. In certain instances, Avatar AI did not accurately discern students' intended meanings or offered examples that were overly general and inadequately related to learners' real-life circumstances. The findings indicate that although Avatar AI provides beneficial learning assistance, additional technological advancements are required to improve its efficacy and user-friendliness.

Moreover, the findings indicate that pupils do not perceive Avatar AI as a replacement for educators. Instead, they perceive it as an ancillary instrument that enhances grammar acquisition by providing flexibility, accessibility, and prompt feedback. Lecturers are essential because they provide contextualised explanations, personalised assistance, emotional support, and opportunity for meaningful connections that artificial intelligence cannot fully replicate.

This study suggests that the most successful method for grammar training is a blended learning model incorporating Avatar AI and lecturer coaching. This technique enables students to leverage the advantages of both technology and human education, so fostering a more effective, interesting, and supportive environment for learning English grammar.

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