

# Exploring EFL Students' Creativity and Engagement with AI Chatbot in Web-Based English Course

Mushaddiq Mushaddiq<sup>\*1</sup>, Nurdin Noni<sup>2</sup>, Abdullah Abdullah<sup>3</sup>, Muhammad Tahir<sup>4</sup>

<sup>1,2,3,4</sup> Universitas Negeri Makassar, Indonesia

[mushaddiq.ai@gmail.com](mailto:mushaddiq.ai@gmail.com)<sup>1</sup>, [nurdinnoni@unm.ac.id](mailto:nurdinnoni@unm.ac.id)<sup>2</sup>, [abdullah5891@unm.ac.id](mailto:abdullah5891@unm.ac.id)<sup>3</sup>, [muhammادتahir@unm.ac.id](mailto:muhammادتahir@unm.ac.id)<sup>4</sup>

<sup>\*</sup>Corresponding Author: [mushaddiq.ai@gmail.com](mailto:mushaddiq.ai@gmail.com)

ARTICLE INFO	ABSTRACT
<p><b>Keywords:</b> AI Chatbot; Creativity; EFL Students; Engagement; Web-based Learning</p> <p><b>Received:</b> 19 Aug 2024  <b>Revised:</b> 14 Oct 2024  <b>Accepted:</b> 24 Oct 2024</p>	<p>This research explores the role of AI-based chatbot tools in promoting creativity and engagement among English as a Foreign Language (EFL) students in web-based English material development course. A qualitative research design was employed, involving in-depth interviews and observation checklists. The research was conducted at the English Education Faculty in Parangtambung of Universitas Negeri Makassar, with data collection spanning from May 12, 2024, to June 9, 2024. Participants included five undergraduate students from the 6th semester based on their familiarity with AI chatbots. The subjects of this research were undergraduate students enrolled in the English web-based material development course. Specifically, five students with prior experience or familiarity with AI chatbots were chosen to provide detailed insights through interviews and observations. The findings indicate that AI chatbots significantly encourage creativity among EFL students by providing a safe space for language experimentation and immediate feedback. Students reported increased engagement and enjoyment in their learning process. The research concludes that while AI chatbots can effectively foster creativity and engagement, careful integration and continuous monitoring are necessary to maximize their educational benefits.</p>

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## 1. INTRODUCTION

The integration of Artificial Intelligence (AI) into education has introduced transformative methods for teaching and learning, with language education as one of its most promising areas. Among AI applications, chatbots have gained attention in the field of English as a Foreign Language (EFL) for their potential to create interactive, accessible, and personalized learning environments (Belda-Medina & Calvo-Ferrer, 2022; Isma et al., 2024; Mohamed, 2024). AI chatbots can simulate conversational partners, offering learners real-time feedback and opportunities for language experimentation without the social pressures of a traditional classroom setting. This aspect is especially valuable in web-based courses, where engagement and interaction are often lower than in face-to-face settings (Lewohl, 2023; Lin & Mubarok, 2021; Meade & Parthasarathy, 2024). The demand for AI-driven learning tools is growing as educational institutions aim to equip EFL students with advanced language skills and adapt to an increasingly digital world.

Numerous studies have explored the effectiveness of AI tools in enhancing various aspects of language learning, such as engagement, motivation, and skill development. Research by Yuan and Liu (2025) on the use of AI applications like Duolingo in EFL classrooms demonstrated significant improvements in student engagement and motivation, emphasizing the positive influence of AI on learning outcomes. Additionally, Ebadi and Amini (2024) found that chatbot interactions fostered social



presence and motivation by offering human-like interactions, which increased students' confidence and willingness to communicate in English. Similarly, Fathi et al. (2024) reported improvements in EFL learners' speaking skills and willingness to communicate through AI-mediated speaking activities, highlighting the potential of AI chatbots in developing both language proficiency and interpersonal skills. Although these studies underscore the benefits of AI chatbots in general EFL contexts, there is a need to examine their role within more specialized courses, such as web-based material development, where creativity and engagement are crucial for effective learning outcomes.

Despite the positive findings, there are notable gaps in the existing literature. Most studies have focused on broad language acquisition areas, with limited attention to creativity and engagement in specific EFL course designs like material development. Mohamed (2024) highlighted the varied perceptions of EFL faculty regarding AI tools like ChatGPT, noting concerns over the potential risks of over-reliance on AI for knowledge acquisition at the expense of critical thinking and research skills. These observations suggest that while AI chatbots offer new possibilities, there remains a need to understand their impact on fostering creativity in more specialized language learning contexts. Furthermore, Jia et al. (2022) argued that while AI-enabled learning environments provide authentic contexts for language practice, there are limitations in addressing the complexity of learners' creative needs. This research gap underscores the importance of examining how AI chatbots can support EFL learners in developing creativity and sustained engagement in challenging course environments, such as web-based material development.

This study aims to bridge this gap by investigating the effectiveness of AI-based chatbots in enhancing creativity and engagement among EFL students within a web-based English material development course. This research contributes both theoretically and practically to the field of language education. Theoretically, it aligns with constructivist and experiential learning models, which emphasize the importance of active student involvement and creative exploration in knowledge construction (Kolb, 2014; Vygotsky, 1978). The findings suggest that AI chatbots can serve as valuable tools within these frameworks by providing supportive environments that encourage creative language experimentation. Practically, the study offers insights for educators and curriculum designers on how to effectively integrate AI chatbots in EFL courses to foster student engagement and creativity, especially in online or hybrid formats. By addressing the gap in specialized EFL course design, this research adds to the growing body of knowledge on AI's role in education and highlights its potential to enhance digital learning experiences across diverse educational settings.

## 2. METHODS

### 2.1 Research Design

This research uses a qualitative descriptive research methodology to examine the current state of a group, item, condition, system of thought, or event. This approach allows for a comprehensive understanding of integrating AI-based language learning tools on learning outcomes of English web-based material development. It provides insights into students' perceptions and experiences.

### 2.2 Research Subject

The subjects in this research were the English Education Department undergraduate students at Universitas Negeri Makassar, specifically students from the 6th semester who partake in the English web-based material development course. Five students were chosen as representatives for this research data. The subjects must meet the following research criteria: 1) Undergraduate students from the 6th semester who took the web-based material development class; 2) Undergraduate students who have been using or are familiar with AI chatbots or similar applications.



### **2.3 Research Instruments**

An observation checklist systematically records and tracks specific behaviors or interactions related to student engagement and AI-based language learning tools. The checklist included active participation in language learning activities, tool usage frequency, and interaction level with the AI-based tools. The observation was conducted between May 12, 2024, and June 9, 2024.

Semi-structured interviews were conducted to gather qualitative data on participants' experiences with the AI-based language learning tools. An interview guide is developed, consisting of open-ended questions and prompts to explore participants' perspectives and the benefits they experienced when using AI tools. The interview was conducted using Bahasa Indonesia to avoid misunderstandings and to ensure the interview was clear.

### **2.4 Technique of Data Collection**

The researchers came to observe by using the observation checklist. Observation is when researchers go straightforwardly to the area or field to notice members' conduct and exercises during the exploration (Creswell, 2018). Researchers can learn about behavior and its meaning through observation activities. This research makes use of non-participant observation as the observation method. This approach allows for an in-depth exploration of participants' experiences, perceptions, and perspectives, providing valuable insights into the effectiveness of this AI tool.

In-depth interviews were conducted with participants to explore their experiences with AI-based language learning tools. Open-ended questions were used to elicit detailed responses about the impact of the tools on language learning outcomes, engagement, and overall satisfaction of the subjects.

### **2.5 Data Analysis**

The data collected in this research were analyzed using qualitative analysis methods. The data is then transcribed and organized into manageable units, such as codes or themes. Patterns, recurring themes, and critical insights within the qualitative data will be identified. The qualitative findings were to be interpreted, providing explanations and interpretations based on the data collected.

Interview transcripts and observational notes were analyzed using thematic analysis. Recurring themes related to language learning outcomes, student engagement, and user satisfaction were identified, providing a comprehensive understanding of the impact of AI-based tools. Data were coded to organize and categorize responses based on key themes and concepts. Both inductive and deductive coding approaches were used to capture a range of perspectives and ensure the richness of the data. Finally, the data were interpreted to provide a nuanced understanding of the impact of AI-based language learning tools in web-based material development courses.

## **3. FINDINGS**

The research sought to establish how AI chatbot integration could stimulate creativity and engagement in EFL students, particularly in English web-based material development courses, and the benefits of adopting AI chatbot for English web-based content creation. The data was acquired through classroom observations and interviews. Based on observations and interviews, the researchers presented research findings from the English learning process using AI chatbots as a learning medium for sixth-semester students at Universitas Negeri Makassar during the 2023/2024 academic year.

### **3.1 AI chatbot integration on encouraging creativity and engagement among EFL students in English web-based material course**

This section explains how integrating AI chatbots can encourage creativity and engagement among EFL students in English web-based material courses. Based on the observations and interviews conducted regarding integrating AI chatbots into EFL courses, it has significantly influenced students' creativity and engagement.

#### **3.1.1 Students Engagement**

Based on the interviews, the AI chatbot can capture attention with interactive and engaging content, ensure relevance by personalizing learning materials, build confidence through immediate and supportive feedback, and enhance satisfaction by allowing learners to achieve their goals and receive recognition. More language experimenting occurs in this encouraging and nonjudgmental setting, which boosts confidence and promotes creative thinking. In this aspect, there are statements from students.

Extract 1 NI (20/05/2024)

*"...Chatbot AI sangat berperan penting dalam mendorong serta mengembangkan kreativitas mahasiswa dalam terutama mahasiswa EFL, dengan chatbot AI siapapun akan lebih tertarik..."*

[...AI chatbots play a crucial role in encouraging and developing creativity, especially for students learning English as a Foreign Language. With AI chatbot, anyone can be more engaged...]

Extract 2 RS (06/062024)

*"...Saya secara pribadi kak menilai bahwa ini AI chatbot signifikan mendorong mahasiswa untuk kreatif dan lebih aktif dengan menyediakan ruang aman untuk bereksperimen dengan Bahasa, menerima umpan balik tanpa harus khawatir adanya kesalahan-kesalahan yang umumnya ada kalau kita masih awam. Makanya hal-hal ini mendorong untuk rekan-rekan saya dituntut kreatif dan harus memang aktif..."*

[...Personally, I believe that this AI chatbot significantly encourages students to be creative and more actively engaged by providing a safe space to experiment with language and receive feedback without the worry of making common mistakes that beginners often face. As a result, these aspects push my peers to be creative and actively engaged...]

Extract 3 AS (02/06/2024)

*"...Mereka jadi lebih sering berlatih karena chatbot selalu tersedia dan bisa diajak bicara kapan saja..."*

[...They practice more frequently because the chatbot is always available and can be interacted with at any time...]

This extract highlights how the constant availability of AI chatbots encourages students to practice more often, fostering a habit of regular language use and enhancing creativity through consistent engagement.

#### **3.1.2 Students Creativity**

AI chatbots replicate social interactions, creating a safe environment for language practice and increasing pupils' self-efficacy and drive, all essential for creative thinking. Supporting statements are as follows:

Extract 4 RF (30/05/2024)

*"...Saya menilai bahwa AI chatbot memang bisa mendorong kreativitas dengan menyediakan ruang aman untuk bereksperimen dengan bahasa..."*

[...I believe that AI chatbots can indeed encourage creativity by providing a safe space to experiment with language...]

This statement emphasizes the safe and supportive environment created by the AI chatbot, which encourages students to experiment with language without fear of making mistakes, thus fostering creativity.

Extract 5 SR (08/06/2024)

*"... Menurut saya, chatbot AI punya peran besar dalam mendorong kreativitas mahasiswa..."*

[...In my opinion, AI chatbots play a significant role in encouraging student creativity...]

This extract supports the notion that AI chatbots are useful for encouraging creative language use by reiterating these technologies' favorable effects on students' inventiveness. AI chatbots have a variety of beneficial effects on students' creativity. Chatbots encourage students to take linguistic risks, find creative solutions to issues, and connect intimately with the language by offering a flexible, dynamic, and supportive learning environment. These encounters not only improve language ability but also encourage a more original and imaginative method of language acquisition.

Extract 6 AS (02/06/2024)

*"...Secara pribadi, saya menilai bahwa AI chatbot memang bisa mendorong kreativitas dengan menyediakan ruang aman untuk bereksperimen dengan bahasa..."*

[...Personally, I believe that AI chatbots can indeed encourage creativity by providing a safe space to experiment with language...]

This statement highlights how using AI chatbots in language learning can encourage students. AI chatbots provide a supportive environment that encourages students to experiment with language without fear of judgment, which can foster creativity. This aligns with the idea that a safe space for trial and error can enhance learning and innovation.

### **3.2 Benefits associated with AI chatbot for English web-based material development course**

Data from observation and interviews were collected to address this question. Integrating AI chatbots into web-based material development presents a dynamic landscape of benefits and utilities.

Numerous educational theories and empirical data support the benefits of integrating AI chatbots in educational settings, especially in English as a Foreign Language (EFL) classes. AI chatbots offer lively, participatory conversations that encourage students to practice more regularly and maintain motivation. It is also evident from students' statements.

Extract 7 AS (02/06/2024)

*"...Manfaat utama dari penggunaan chatbot AI adalah peningkatan keterlibatan dan motivasi mahasiswa..."*

[...The main benefit of using an AI chatbot is the increased engagement and motivation of students...]



This extract highlights the primary advantage of AI chatbots in educational settings student. By providing an interactive platform, AI chatbots make learning more engaging and enjoyable, which motivates students to participate actively in their studies.

Extract 8 RS (06/06/2024)

*"...Manfaat utamanya seperti pengalaman belajar yang bisa disesuaikan kebutuhannya tergantung individu masing-masing, langsung ada feedbacknya apalagi masalah penggunaan Bahasa, dan peningkatan keterlibatan teman-teman yang lain menjadi lebih aktif..."*

[...The main benefits include a learning experience tailored to individual needs, immediate feedback, especially regarding language use, and increased engagement from peers, making them more active...]

This statement emphasizes the personalized learning experience provided by the AI chatbot, which can be customized to meet individual student needs. The immediate feedback mechanism is particularly beneficial for language learning, helping students improve their language skills quickly. Additionally, the increased peer engagement fosters a collaborative and active learning environment.

Extract 9 SR (08/06/2024)

*"...Manfaat utama dari penggunaan chatbot AI adalah peningkatan keterlibatan dan motivasi mahasiswa. Mereka jadi lebih sering berlatih karena chatbot selalu tersedia dan bisa diajak bicara kapan saja..."*

[...The main benefits of using an AI chatbot are increased student engagement and motivation. They practice more often because the chatbot is always available and can be interacted with at any time...]

This extract highlights the availability and usability of AI chatbots as a significant advantage. Students can practice more frequently due to the ongoing availability, which increases their motivation and level of participation in their studies.

### **3.3 Students' perception of the use of AI Chatbot tools in general for use in web-based material course**

From the interview data collected, it is evident that students perceive AI chatbot tools as highly beneficial for enhancing engagement, personalization, accessibility, and providing instant feedback in web-based material courses. The subjects see AI chatbots as useful for increasing engagement, customization, accessibility, and offering immediate feedback in web-based content courses. They are more motivated to practice English with a chatbot because it feels safer and more pleasurable than practicing in front of peers or a class. Positive feedback from students emphasizes the benefits of AI chatbots in making language practice safer and more pleasant, encouraging creative thinking and consistent practice.

Extract 10 SR (08/06/2024)

*"...Menurut saya, chatbot AI punya peran besar dalam mendorong kreativitas mahasiswa. Dengan chatbot, mahasiswa bisa berlatih bahasa Inggris dalam konteks yang beragam dan realistis..."*

[...In my opinion, AI chatbots play a significant role in encouraging student creativity. With chatbot, students can practice English in diverse and realistic contexts...]

AI chatbots provide a safe space for students to experiment with language use without fear of social judgment, fostering creativity and helping students develop their unique communication styles.

Extract 11 NI (20/05/2024)

*"...Mereka merasa lebih termotivasi untuk berlatih bahasa Inggris karena interaksi dengan chatbot terasa lebih aman dan menyenangkan dibandingkan berlatih dengan sesama mahasiswa atau di depan kelas..."*

[...They feel more motivated to practice English because interacting with the chatbot feels safer and more enjoyable compared to practicing with fellow students or in front of the class...]

This claim highlights the benefits of AI chatbots in making language practice feel safer and more enjoyable. The flexibility of web-based materials and chatbot interactions encourages creative thinking and consistent practice.

Extract 12 RS (06/06/2024)

*"...Kalau saya sendiri sangat enjoy dengan fitur AI chatbot ini apalagi ini sangat memperkuat hasil pembelajaran. Ada juga yang percaya diri kalau pakai AI ini..."*

[...Personally, I really enjoy the AI chatbot features, especially since they significantly enhance learning outcomes. Some also feel more confident when using AI...]

The positive feedback from students indicates that AI chatbots are well-received and enhance learning outcomes. Increased confidence in using AI tools also suggests that students feel more empowered to explore and express their creativity.

#### 4. DISCUSSION

This study sought to understand how AI-based chatbots can foster creativity and engagement among EFL students in a web-based English material development course. The findings provide evidence that AI chatbots serve as effective tools in stimulating creativity, enhancing student engagement, and supporting a more dynamic learning environment. By offering a secure, non-judgmental space, chatbots allow students to experiment with language and receive immediate feedback, which significantly contributes to their confidence and willingness to participate actively.

One of the main findings of this study is that students reported increased engagement when using AI chatbots. The chatbots provided continuous, interactive support, encouraging students to practice language more frequently and enthusiastically. This aligns with Yuan and Liu's (2025) research, which found that AI applications like Duolingo improve engagement and motivation in EFL learners. Furthermore, the study observed that chatbots not only boost engagement but also facilitate creativity by providing a supportive environment for language experimentation without fear of errors. This finding resonates with the study by Ebadi and Amini (2024), which showed that AI chatbots enhanced motivation and social presence by offering human-like interactions, thus reducing students' anxiety around language use.

In comparison with previous studies, this research highlights unique insights into the role of AI chatbots within specialized EFL courses focused on web-based material development. While Lin and Mubarok (2021) demonstrated the benefits of AI chatbots in flipped classrooms for speaking skills, this study extends those findings by illustrating how chatbots can also enhance creativity and engagement in content creation settings. Mohamed (2024) emphasized the varied perceptions of EFL faculty regarding AI tools like ChatGPT, particularly around concerns about students' over-reliance on AI, potentially weakening critical thinking. In contrast, this study reveals that with structured integration, AI chatbots can positively influence creative thinking and autonomy, suggesting that careful design and continuous monitoring can mitigate potential drawbacks identified by previous researchers.



The findings have important implications for EFL educators, course designers, and policymakers. The evidence supporting AI chatbots as a means of fostering engagement and creativity suggests that these tools could be strategically integrated into EFL curricula to enhance digital learning experiences. For educators, AI chatbots can serve as a complementary tool to traditional instruction, providing interactive and autonomous practice opportunities for students, which is especially beneficial in online or blended learning contexts. Additionally, the use of AI chatbots could encourage educational institutions to consider AI technology as a means of addressing learner diversity by catering to different learning paces and preferences, thus promoting inclusive learning environments.

However, the study also has limitations that must be acknowledged. The small sample size, consisting of only five students, restricts the generalizability of the findings, meaning that further research with larger and more diverse participant groups is necessary. Additionally, while qualitative data provided deep insights into students' experiences, quantitative measures, such as engagement scores or creativity assessments, were not utilized and could enhance future research validity. Finally, the reliance on self-reported data may introduce bias, as students' perceptions of their engagement and creativity might not fully align with objective measures. Future research should consider mixed methods to better capture the impact of AI chatbots on EFL learning outcomes.

## 5. CONCLUSION

This study investigated the role of AI-based chatbots in fostering creativity and engagement among EFL students in a web-based English material development course. The findings indicate that AI chatbots can effectively enhance language learning experiences by providing students with interactive and supportive environments that encourage experimentation and consistent practice. By enabling students to receive immediate feedback in a non-judgmental space, chatbots promote a safe setting for creativity and bolster engagement, contributing to increased student confidence and enjoyment in their language learning journey. Compared to traditional methods, the use of AI chatbots presents unique advantages, particularly in online learning settings, where maintaining engagement can be challenging. This study's findings align with prior research, which underscores the potential of AI tools to boost motivation, social presence, and autonomous learning. However, this study specifically extends these insights to specialized content creation courses, revealing the positive impact chatbots have on fostering creativity within EFL contexts that require higher-order thinking and practical application skills. The implications of these findings suggest that educators and course designers should consider incorporating AI chatbot tools into EFL curricula, especially in blended or fully online formats, to support learner engagement and creativity. Nonetheless, limitations such as the small sample size and reliance on qualitative data highlight the need for further research. Future studies should employ larger samples and mixed-method approaches to validate and expand upon these findings. Ultimately, this study contributes to the evolving understanding of AI's role in language education, demonstrating the value of chatbots as complementary tools for developing EFL students' language skills, creativity, and engagement in digital learning environments.

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