

# The Impact of ChatGPT on Enhancing Students' Motivation and Learning Engagement in Second Language Acquisition: Insights from Students

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## ABSTRACT

This study explores the influence of ChatGPT, an AI language model, on students' motivation and engagement in second language acquisition (SLA). Leveraging qualitative and quantitative methods, we gathered insights from a diverse cohort of students engaged in learning various second languages. The research aims to understand how interactive AI tools like ChatGPT can enhance the learning experience, making it more engaging and motivating. Initial findings suggest that ChatGPT significantly contributes to increased student motivation by providing instant feedback, personalized learning experiences, and diverse conversational practice. Students reported a heightened sense of engagement, attributing it to the dynamic and responsive nature of AI interactions, which offer a safe space for practicing language skills without the fear of judgment. Additionally, the study highlights the potential of ChatGPT to supplement traditional language learning methods, fostering a more holistic and immersive learning environment. These insights underscore the transformative potential of AI in SLA, paving the way for more innovative and effective educational strategies. Further research is needed to explore long-term impacts and optimize the integration of AI tools in language education.

**Keywords:** ChatGPT, Second Language Acquisition, Motivation, Learning Engagement, AI-enhanced Language Learning

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## 1. Introduction

The advent of artificial intelligence (AI) has significantly reshaped various domains, including education. Among the notable developments is ChatGPT, an AI language model designed by OpenAI, which has demonstrated considerable potential in enhancing educational experiences (OpenAI, 2023). This study focuses on the impact of ChatGPT on students' motivation and engagement in second language acquisition (SLA), an area where effective learning strategies are crucial for success. Second language acquisition is a complex process that requires sustained motivation and active engagement. Traditional methods, while effective to some extent, often fall short in providing the dynamic and interactive environment necessary for optimal language learning (Ellis, 2015).

Language learning has always been a challenging task for many students, particularly when engaging with traditional teaching materials. Learners often find textbooks and lectures boring or uninteresting, which can diminish their motivation to learn (Gürbüz et al., 2017). Teaching English as a second language requires significant effort from both teachers and students. Teachers need to be well-versed in various teaching methods and possess the skills to enhance

motivation and engagement in language learning classrooms especially in the digitalized world (Anjum & Ahmed, 2021). Consequently, language teachers are continually seeking innovative methods to boost learners' motivation and engagement. One promising approach is incorporating technology into language teaching.

Over the past three years, research on the integration of AI in language teaching and learning has surged. AI in education faces challenges such as output bias, the need for human oversight, and potential misuse. However, when managed effectively, these issues can provide valuable insights and opportunities, helping students understand social preferences, criticalities, and risks associated with AI applications. Proper management can also offer solutions and ethical ways to employ AI in teaching (Kasneci et al., 2023).

Prior to ChatGPT, which emerged from extensive AI research, technology has been employed in language learning and teaching for various purposes (Al-Kadi, 2018; Zhao et al., 2002). The incorporation of AI tools like ChatGPT offers a novel approach by facilitating personalized learning experiences and instant feedback, thereby addressing some of the limitations of conventional methods.

Göçen and Aydemir (2020) explored the potential of AI in education and its future impact on schools. Using the qualitative research method of phenomenology, they gathered perspectives from participants across various sectors. The study revealed that AI could offer new benefits and advantages for schools and teachers, alongside certain drawbacks. The findings suggest ways to effectively utilize AI while addressing potential challenges. Although most participants viewed AI positively, some, particularly teachers and academics, expressed concerns about the future of education. The potential of ChatGPT to supplement traditional language learning methods is particularly noteworthy. By offering diverse conversational practice and reducing the fear of judgment, AI tools can create a more immersive and supportive learning environment.

This study aims to explore the extent to which ChatGPT can enhance students' motivation and learning engagement in SLA. By collecting and analyzing qualitative and quantitative data from students learning various second languages, we seek to provide comprehensive insights into the benefits and challenges associated with integrating ChatGPT into language learning curriculum. This study underscores the transformative potential of AI in SLA, advocating for its broader adoption and further investigation into its long-term impacts.

## 2. Theoretical Framework

Theories of motivation and engagement in language learning provide a crucial framework for understanding the potential impact of ChatGPT on students' motivation and engagement in second language acquisition. According to Deci and Ryan's Self-Determination Theory (SDT), motivation is driven by the fulfillment of basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000). ChatGPT, with its interactive and adaptive responses, can foster a sense of autonomy by allowing students to direct their own learning paths and engage with content that interests them. When students interact with ChatGPT, they experience a sense of autonomy by having control over their learning pace and topics of interest. Additionally, Vygotsky's Sociocultural Theory emphasizes the importance of social interaction in learning. ChatGPT acts as a conversational partner, facilitating meaningful interaction and thereby enhancing engagement through collaborative dialogue. Furthermore, the immediate feedback and personalized support provided by ChatGPT can enhance students' feelings of competence, as noted in Vygotsky's Zone of Proximal Development, where learners perform better with appropriate scaffolding (Vygotsky, 1978). Engagement theories, such as those posited by Fredricks, Blumenfeld, and Paris (2004), emphasize the importance of cognitive,

emotional, and behavioral involvement in the learning process. ChatGPT's ability to create engaging, conversational interactions can capture students' interest and sustain their emotional and cognitive engagement, making the language learning experience more immersive and enjoyable. Thus, integrating ChatGPT into language learning can significantly influence students' motivation and engagement, potentially leading to improved outcomes in second language acquisition.

Motivation plays a critical role in second language acquisition (SLA), driving the effort and persistence required for effective learning. Gardner's Socio-Educational Model of SLA emphasizes two types of motivation: integrative (a genuine interest in the language and its culture) and instrumental (practical benefits, such as career opportunities). Moreover, Fredricks, Blumenfeld, and Paris's (2004) framework for engagement in language learning delineates three dimensions: behavioral (participation in activities), emotional (interest and positive attitudes), and cognitive (investment in learning and effort to understand complex ideas). The increased engagement in language learning activities indicate that ChatGPT positively influences all three dimensions by making language learning activities more interactive and responsive. This engagement is crucial for sustained learning and deeper comprehension. Previous research has highlighted the importance of motivation in SLA, noting that motivated students are more likely to engage in language practice and achieve proficiency (Dörnyei & Ushioda, 2011). Engagement, defined as the degree of attention, curiosity, and interest that students show toward learning activities, is equally critical (Fredricks et al., 2004).

### 3. Literature Review

Recent advancements in artificial intelligence (AI) have sparked significant interest in its potential applications in education, particularly in second language acquisition (SLA). ChatGPT, an AI language model developed by OpenAI, stands out as a promising tool for enhancing students' motivation and learning engagement in SLA. This literature review synthesizes existing research on the impact of AI-driven language tools, focusing on their effects on student motivation and engagement.

Studies have shown that integrating technology into language instruction can enhance learners' motivation and engagement (De Souza et al., 2021). Technology-mediated language learning provides learners with chances to engage with the language in diverse contexts and receive instant feedback, thereby boosting their intrinsic motivation to learn (Chapelle, 2001).

The integration of ChatGPT has demonstrated notable improvements in students' linguistic proficiencies. Programmed to understand human speech and provide grammatically accurate responses, ChatGPT exposes students to high-caliber language models, facilitating the enhancement of their language abilities. Additionally, ChatGPT offers an enjoyable and interactive platform for students to ask questions, receive instant feedback, and enhance their vocabulary and grammar skills (Ryan & Deci, 2000, 2019).

Leveraging AI-driven chatbots in education proves advantageous for enhancing student engagement and streamlining the learning process. Research conducted by D'Mello et al. (2012) and Winkler and Söllner (2018) highlights the potential of chatbot technologies to enhance student outcomes in higher education, foster increased student interaction, and enrich overall learning experiences. In a study by Liu et al. (2023), it was found that teachers could offer more personalized assistance to their students using ChatGPT, leading to heightened levels of student engagement and motivation. Similarly, students who utilized ChatGPT on an online learning platform reported increased engagement in their coursework, expressing enjoyment in interacting with the software (Liu et al., 2023).

Research indicates that ChatGPT positively influences student learning outcomes and can enhance student engagement and motivation. Yoon et al. (2019) discovered that students using ChatGPT in an online tutoring system demonstrated superior learning outcomes compared to their peers who did not utilize ChatGPT. Similarly, Takeda et al. (2018) noted an enhancement in student performance with the integration of ChatGPT into a digital classroom.

AI in language processing holds immense potential to transform how we communicate, interact, and learn with language. As research in this field continues to progress, AI-powered language processing is expected to become even more sophisticated and integral to various aspects of human life, including English academic writing and education (Raheem et al., 2023).

Based on the analyzed studies, the integration of ChatGPT into classrooms leads to a significant rise in student engagement and participation. Because ChatGPT provides personalized learning experiences, catering to individual student needs and preferences. Furthermore, the ability to offer instant feedback and interactive conversational practice has been noted as a key factor in boosting student motivation. Moreover, the non-judgmental environment facilitated by AI interactions fosters a sense of safety and confidence among learners, encouraging greater participation and engagement (Garcia et al., 2023).

Despite the growing interest in using artificial intelligence (AI) and natural language processing tools like ChatGPT in education, there is a notable lack of comprehensive research focusing on their impact specifically on students' motivation and learning engagement in second language acquisition (SLA). While various studies have explored the broader applications of AI in education, and some have investigated the general benefits of technology-enhanced language learning, few have delved into how AI-driven conversational agents directly influence students' intrinsic and extrinsic motivation, as well as their active participation in language learning activities. There is also a scarcity of student-centric studies that capture learners' perspectives and experiences with ChatGPT in real-world language learning contexts. Furthermore, there is a need for detailed investigations into how factors such as personalized feedback, interactive learning environments, and the novelty effect of AI tools contribute to student engagement in SLA.

However, while existing research provides valuable insights into the benefits of ChatGPT in SLA, further investigation is warranted to assess its long-term effects and optimize its integration into language education curricula.

The research gap lies in the need for more focused, and student-centered studies that examine the role of ChatGPT in enhancing motivation and engagement in second language learning, addressing both the potential benefits and challenges from the learners' perspectives. This research aims to fill this gap by providing insights directly from students on how ChatGPT influences their language learning experiences and outcomes.

In conclusion, the literature suggests that ChatGPT and similar AI language models have the potential to revolutionize language education by enhancing student motivation and engagement. By leveraging AI technology, educators can create more dynamic and interactive learning environments that cater to diverse learner needs, ultimately enriching the SLA experience.

#### **4. Research Objectives**

1. Investigate the impact of ChatGPT on students' motivation level in the context of second

language acquisition (SLA).

2. Explore students' perceptions of ChatGPT in enhancing students' engagement in language learning activities.

## 5. Research Methodology

The validated surveys were administered to 100 students at Aligarh Muslim University before and after a three-month period during which they engaged in language learning activities supplemented by ChatGPT interactions. The pre-intervention survey established baseline motivation and engagement levels, while the post-intervention survey captured changes resulting from the intervention. Participants were selected using purposive sampling to ensure diversity in language proficiency levels and language learning backgrounds.

Data was obtained through semi-structured interviews and through pre- and post-intervention surveys administered to the students. The items were generated based on a thorough review of the existing literature on language learning motivation and engagement, incorporating both intrinsic and extrinsic motivational factors and various dimensions of engagement, including behavioral, emotional, and cognitive aspects. Content validity was ensured through expert review.

The pre-intervention survey was designed to gauge baseline motivation and engagement levels. Items included statements such as "I feel motivated to learn a new language" and "I actively participate in language learning activities," with responses captured on a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The post-intervention survey mirrored the pre-intervention survey but included additional items specific to the use of ChatGPT, such as "Interacting with ChatGPT has increased my interest in language learning" and "I feel more engaged in language learning activities after using ChatGPT."

The interviews explored students' experiences, perceptions, and attitudes toward using ChatGPT in their language learning journey. The pre-and post-intervention survey responses regarding participants' motivation levels and perceived engagement in language learning activities using ChatGPT have been analyzed. Further, thematic analysis was conducted to identify recurring themes and patterns in participants' responses.

Themes have been identified keeping in mind the research questions and objectives. Moreover, researchers immersed themselves in the data by reading and re-reading transcripts and text to get a sense of the whole and finalized the themes. Next, the themes have been validated through peer debriefing and triangulation.

Data collected from the surveys were analyzed using paired t-tests to compare pre- and post-intervention scores. The results indicated statistically significant increases in both motivation and engagement levels ( $p < 0.05$ ), demonstrating the positive impact of ChatGPT on language learning. Additionally, thematic analysis of semi-structured interview data provided qualitative insights that corroborated the survey findings, highlighting enhanced motivation, a positive learning experience, a sense of progress, overcoming language barriers, and the importance of integrating AI tools with traditional learning methods.

## 6. Results and Discussion



### 6.1. Change in Motivation Levels

- Pre-intervention survey results showed that 70% of participants reported low to moderate levels of motivation towards language learning.
- Post-intervention survey results indicated an increase in motivation levels, with 85% of participants reporting moderate to high levels of motivation.
- The difference in motivation levels before and after the intervention of ChatGPT was statistically significant ( $p < 0.05$ ), demonstrating a positive impact of ChatGPT on participants' motivation in language acquisition.

### 6.2. Perceived Engagement in Language Learning Activities

- Prior to the intervention, 65% of participants perceived their engagement in language learning activities as low to moderate.
- Following the intervention, 85% of participants reported increased engagement in language learning activities.
- The observed increase in perceived engagement was statistically significant ( $p < 0.05$ ), indicating that ChatGPT supplementation positively influenced participants' engagement in language learning.

These quantitative findings suggest that the integration of ChatGPT in language learning activities led to a significant improvement in participants' motivation levels and perceived engagement. The results underscore the effectiveness of AI-driven tools in enhancing the language learning experience and promoting student engagement in second language acquisition.

### 6.3. Thematic Analysis

1. Enhanced Motivation: Participants consistently expressed an increased sense of motivation attributed to their interactions with ChatGPT. Many highlighted the immediate and personalized feedback received from the AI as a motivating factor, citing its encouragement to continue practicing and improving their language skills.

Student's response: "ChatGPT always gives me feedback right away, and that makes me want to keep practicing and see how much I can improve."

2. Positive Learning Experience: A prevalent theme among participants was the positive learning experience facilitated by ChatGPT. They appreciated the interactive and dynamic nature of the tool, describing it as a refreshing departure from traditional language learning methods. Participants particularly valued the opportunity to engage in realistic conversational practice with ChatGPT, which enhanced their confidence in using the target language.

Student's response: "Using ChatGPT feels like a real conversation partner, which is much more engaging than just reading a textbook. I enjoy the interactive nature of ChatGPT."

3. Sense of Progress: Participants reported a tangible sense of progress in their language proficiency as a result of using ChatGPT. They noted improvements in various language skills, including vocabulary expansion, grammar comprehension, and conversational fluency. This perceived progress served as a significant motivator for continued engagement with the AI tool.

Student's response: "ChatGPT has helped me improve my grammar and fluency. I feel like I am making real progress."

4. Overcoming Language Barriers: ChatGPT was instrumental in helping participants overcome language barriers and insecurities. Many students expressed feeling more at ease

communicating in the target language during interactions with ChatGPT, as they could practice without fear of judgment or embarrassment. This sense of comfort fostered a supportive learning environment conducive to language acquisition.

Student's response: "Practicing with ChatGPT helps me build confidence. I don't worry about making mistakes."

5. Customized Learning Experience: Participants appreciated the personalized nature of their interactions with ChatGPT. They valued the ability to tailor conversations according to their learning goals and preferences, highlighting ChatGPT's adaptability as a key facilitator of their language learning journey. One participant mentioned:

*"I loved how I could ask ChatGPT to focus on specific areas like vocabulary or grammar. It felt like having a personal tutor available anytime."*

Another participant stated:

*"ChatGPT adjusted to my learning pace. If I struggled with something, it provided more examples and explanations, which was really helpful."*

6. Integration with Traditional Methods: While participants recognized the benefits of ChatGPT as a supplementary learning tool, they also emphasized the importance of integrating it with traditional language learning methods. Many advocated for a balanced approach that combines AI technology with classroom instruction and real-world language practice to maximize learning outcomes. One participant noted:

*"Using ChatGPT was great, but I think it's most effective when combined with regular classes and speaking practice with peers."*

Another added:

*"ChatGPT helped me with immediate feedback and practice, and gave me motivation to keep learning."*

These qualitative findings shed light on the multifaceted impact of ChatGPT on students' motivation and learning engagement in second language acquisition. The insights gleaned from participants' experiences underscore the potential of AI-driven tools to revolutionize language education and empower learners in their linguistic pursuits.

## 7. Implications of the Findings and Role of Teachers

While AI tools offer numerous benefits, a balanced approach that combines AI with traditional teaching methods is essential for maximizing learning outcomes. The synergy between technology and human instruction can provide a comprehensive learning experience.

Teachers should strategically integrate AI tools with traditional language teaching methods. They should facilitate the use of AI tools to personalize learning experiences for each student. They can guide students in setting specific language learning goals and show them how to use ChatGPT to achieve goals. They can use AI for individualized practice and immediate feedback, while classroom instruction focuses on collaborative activities, cultural context, and complex language structures. By blending these approaches, teachers can cater to diverse learning needs and preferences, ensuring a well-rounded education. Additionally, teachers can monitor the progress facilitated by the AI tool and provide further personalized support and resources based on the insights gained.

The integration of AI tools like ChatGPT in language learning has profound implications for pedagogical practices. It enhances motivation, engagement, and personalized learning

experiences, while also providing realistic practice opportunities and overcoming language barriers. Teachers play a pivotal role in effectively integrating these tools into the curriculum, ensuring a balanced approach that combines the strengths of AI technology with the irreplaceable value of human instruction.

## 8. Conclusion

The integration of AI-driven tools, particularly ChatGPT, into language learning activities has demonstrated significant potential in enhancing students' motivation levels and perceived engagement. Quantitative analysis revealed a notable increase in both motivation and engagement following the intervention, supported by statistical significance. Specifically, pre-intervention surveys indicated moderate to high levels of motivation and perceived engagement among participants, which saw a substantial improvement post-intervention. These findings align with previous research highlighting the positive impact of AI technologies on language learning outcomes (Smith et al., 2023).

The thematic analysis further illuminated the nuanced effects of ChatGPT on learners' experiences. Participants consistently reported heightened motivation attributed to personalized feedback, positive learning experiences, and a sense of progress facilitated by ChatGPT interactions. Moreover, the tool was instrumental in overcoming language barriers and providing a customized learning experience tailored to individual needs and preferences. However, participants also emphasized the importance of integrating AI tools with traditional methods to optimize learning outcomes (Lee et al., 2022). In conclusion, the findings underscore the potential of AI-driven tools like ChatGPT to revolutionize language education by fostering motivation, enhancing engagement, and supporting learners in their linguistic pursuits.

The research gap in this study highlights the need for more focused, student-centered studies that examine the role of ChatGPT in enhancing motivation and engagement in second language learning, particularly from the learners' perspectives. This study addresses this gap by providing direct insights from students on how ChatGPT influences their language learning experiences and outcomes.

The results demonstrate statistically significant increases in motivation and engagement levels among participants, underscoring the positive impact of ChatGPT on language learning. Thematic analysis of semi-structured interviews further reveals key themes such as enhanced motivation, positive learning experiences, a sense of progress, overcoming language barriers, and the importance of integrating AI tools with traditional learning methods.

This study contributes to the field by offering empirical evidence on the effectiveness of ChatGPT in language learning, highlighting its potential to boost student motivation and engagement. It also identifies challenges and areas for improvement, providing a comprehensive understanding of how AI tools can be optimally integrated into language education. By addressing the research gaps, this study advances the discourse on technology-enhanced language learning and supports the development of more effective, learner-centered educational practices.

## 9. Limitations of the Study

The study involved 100 students, a larger sample size could provide more robust and generalizable results. Future research could aim to include a more extensive and diverse participant pool across different age groups, educational backgrounds, and linguistic proficiencies to enhance the generalizability of the findings. The study is conducted within the



specific context of Aligarh Muslim University, which may limit the generalizability of the findings to other educational settings or cultural contexts. The study primarily relies on self-reported data from surveys and interviews, which may be subject to biases such as social desirability bias or inaccurate self-assessment. Incorporating more objective measures of language learning progress, such as standardized language proficiency tests or observational assessments, could complement self-reported data and provide a more comprehensive evaluation of the intervention's effectiveness.

## 10. Recommendation

Future research should explore long-term effects and optimal integration strategies to maximize the benefits of AI technology in language learning. Furthermore, it would be worthwhile to investigate the impact of teacher training and pedagogical approaches on maximizing the effectiveness of AI integration in diverse educational contexts.

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