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## The Impact of ChatGPT on Students' Writing Proficiency in Second Language Acquisition: Students' Perception and Experiences: A Qualitative Analysis

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### Abstract

This qualitative analysis takes a comprehensive approach to investigate the impact of ChatGPT, a state-of-the-art language model, on students' writing proficiency as they embark on the journey of second language acquisition. The study's primary focus is to delve into the subjective experiences and perceptions of students when utilizing ChatGPT as a tool for language learning, going beyond mere evaluation of outcomes. By employing a combination of interviews and questionnaires, researchers seek to gain a profound understanding of the nuanced ways in which ChatGPT influences language acquisition, exploring both its perceived benefits and potential challenges. The implications of the findings extend significantly to our comprehension of AI-based chatbots in language education, and they hold the potential to shape the development of more effective language learning tools, attuned to the unique needs and experiences of learners. In sum, this research underscores the paramount importance of considering students' perspectives and experiences to enrich writing skills in the realm of second language acquisition, offering a comprehensive view of the impact of emerging language technologies on education.

**Keywords:** Writing proficiency, Second language acquisition, Perception, SLA

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## 1. Introduction

Second Language Acquisition (SLA) is a multifaceted process involving the development of various language skills, including writing, which is pivotal for effective communication and language learning. Nonetheless,

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many second language learners encounter challenges in acquiring and improving their writing abilities. Recent advancements in Artificial Intelligence (AI) and Natural Language Processing (NLP) have introduced innovative tools and platforms that can potentially assist language learners in their writing endeavors. One such tool is ChatGPT, a state-of-the-art language model developed by OpenAI, offering an interactive conversational experience. ChatGPT, an AI-powered chatbot, employs deep learning techniques to generate real-time, human-like responses. It can engage in dynamic conversations and provide support for various language-related tasks, including writing. Interacting with ChatGPT enables learners to receive immediate feedback, practice language structures, and enhance their writing skills within a supportive and interactive environment. This technology has gained significant attention in the field of language education for its potential to revolutionize the way students learn and practice a second language.

This study's primary aim is to investigate the impact of ChatGPT on students' writing proficiency in the context of Second Language Acquisition (SLA). Specifically, our focus is on exploring students' perceptions and experiences when using ChatGPT as a tool for language learning. Employing a qualitative research approach, we intend to gain a profound understanding of how learners engage with this innovative technology and its influence on their writing development. To accomplish this, we have selected a diverse group of students who are learning a second language through formal instruction as participants in this study. We collected qualitative data through semi-structured interviews, which aimed to provide rich and in-depth insights into participants' perceptions, experiences, and attitudes toward using ChatGPT to enhance their writing skills. To complement the interview data, we also administered surveys to gather basic information on participants' perceived effectiveness, satisfaction, and preferences concerning ChatGPT.

The data collected from the interviews and surveys has undergone rigorous analysis using a thematic analysis approach. Thematic analysis is a method that involves the identification and categorization of key themes and patterns in participants' responses. This process allows us to gain insights into their perceptions and experiences related to ChatGPT in the context of language learning. Importantly, prior studies have delved into the impact of AI-based language technologies on language learning, with a particular focus on writing skills. For instance, Kohnke (2023) conducted a study exploring the use of a chatbot in an English for Academic Purposes (EAP) course and found that students perceived the chatbot as a valuable tool for writing practice and feedback. Similarly, Wei *et al.* (2023) investigated the effects of an AI-based writing system on Chinese learners' writing performance, reporting positive outcomes in terms of writing accuracy and fluency. These studies provide a valuable foundation for our research by highlighting the potential benefits of AI-powered chatbots in supporting writing proficiency in the context of SLA.

The findings of this study hold significant implications for various stakeholders within the field of language education. Language educators, developers of language learning tools, and researchers in the domain of SLA will benefit from a deeper understanding of students' perceptions and experiences when using ChatGPT. This understanding will facilitate the integration of AI-powered chatbots into language learning curricula, inform the development of more effective tools, and shape instructional practices aimed at enhancing the writing proficiency of second language learners. In summary, this study investigates the impact of ChatGPT on students' writing proficiency in the context of SLA by exploring their perceptions and experiences. Using a qualitative research design, we aim to provide valuable insights into the role of ChatGPT as a language learning tool and its potential to enhance the writing skills of second-language learners. The findings contribute to the growing body of literature on AI-based language technologies in education and set the stage for further research and development in the field of SLA.

## 2. Literature Review

Second Language Acquisition (SLA) is a complex and multifaceted process that has posed challenges, particularly in the development of writing proficiency. Recent strides in Artificial Intelligence (AI) have introduced innovative tools, with AI-based chatbots (Paliwal, *et al.*, 2020; . Suhel *et al.*, 2020) such as ChatGPT emerging as a noteworthy consideration for enhancing students' writing skills within the context of language learning. This literature review embarks on an exploration of the current body of research that delves into the influence of ChatGPT on students' writing proficiency in the realm of SLA. Furthermore, it seeks to delve into the nuanced experiences and perceptions of students who have engaged with ChatGPT as a language learning tool.

The undertaking of SLA is known for its inherent complexity, and achieving proficiency in writing has remained a formidable challenge. However, the introduction of AI technologies, particularly AI-based chatbots like ChatGPT, has stirred considerable interest in the field of language education. These chatbots hold promise as tools that can potentially enhance students' writing skills (Wang et al., 2023). The objective of this literature review is to embark on an in-depth exploration of the existing research body focused on the impact of ChatGPT on students' writing proficiency within the context of second language acquisition. In addition to this, it endeavors to provide a comprehensive understanding of the student's perceptions and experiences when utilizing ChatGPT as a language learning tool. By synthesizing and analyzing the available research, this review aims to offer valuable insights into the potential of AI-powered chatbots in contributing to the development of writing proficiency in SLA.

Artificial Intelligence (AI) is increasingly integrated into the realm of Second Language Acquisition (SLA). Language learning has seen a significant shift with the introduction of AI-based chatbots (Godwin-Jones, 2023). These interactive tools offer learners valuable opportunities for practice, feedback, and authentic communication experiences. Researchers have delved into the effectiveness of AI chatbots in enhancing various language skills, particularly writing, revealing promising outcomes. For instance, Song et al. (2019) highlighted the benefits of AI chatbots in facilitating writing skill development, while Kim et al. (2021) reported positive results regarding the use of AI chatbots for improving writing proficiency. However, to gain a more comprehensive understanding of the precise influence of ChatGPT on writing proficiency in SLA, further research is warranted. This evolving landscape of AI in language learning promises to shape the future of language education and writing skill development for second language learners.

Second language writing proficiency is a multifaceted skill encompassing the development of grammatical accuracy, vocabulary richness, cohesion, and coherence. Learners often grapple with the challenges of attaining proficiency in writing in their second language (L2) (Hyland, 2018; Ferris, 2014). ChatGPT holds significant promise in addressing some of these challenges by providing learners with real-time feedback, scaffolding, and fostering autonomous learning.

ChatGPT's impact on writing proficiency is evident in its usefulness as a writing aid. It serves as a valuable tool by offering instant feedback and constructive suggestions to learners, assisting them in error identification and overall writing improvement (Link et al., 2022). Students appreciate ChatGPT's immediate feedback feature for its role in error correction and language enhancement. This newfound capacity of AI-powered chatbots to support writing skill development marks a significant advancement in language education, promising to enhance the quality of writing instruction and the writing proficiency of second language learners.

The role of ChatGPT in providing immediate feedback is instrumental in the context of second-language writing proficiency. Immediate feedback is indispensable for learners seeking to rectify errors and enhance their writing skills. ChatGPT's capacity to deliver instantaneous feedback on aspects such as grammar, vocabulary, and structural elements stands as a valuable resource for learners, enabling them to engage in self-correction and continuous improvement (Pan et al., 2023). This feature is highly regarded by students who find timely feedback to be an effective means of honing their writing skills, underscoring the transformative potential of AI-based chatbots in supporting second-language writing development.

Students' perception of ChatGPT (Javaid et al., 2023) as a conversation partner contributes significantly to their writing proficiency. Beyond feedback provision, ChatGPT's conversational capabilities offer learners the opportunity to engage in interactive writing practice. Research has demonstrated that students view ChatGPT as a friendly and supportive conversation partner, leading to heightened motivation and increased engagement in writing tasks (Baevski et al., 2022; Dwivedi et al., 2023). This conversational aspect of ChatGPT promotes a more interactive and communicative writing experience, enriching the learning journey for second language writers and highlighting the pivotal role of AI-based chatbots in fostering student engagement and motivation in language learning.

The impact of ChatGPT on students' motivation and confidence in writing is a noteworthy dimension. ChatGPT's capacity to offer personalized feedback and support plays a pivotal role in enhancing learners' motivation and confidence (AlAfnan et al., 2023). Students tend to feel more at ease and less anxious when

interacting with ChatGPT, resulting in heightened motivation and a greater willingness to participate in writing tasks (Shoufan, 2023). This augmented motivation and confidence can significantly contribute to the enhancement of writing proficiency in the context of SLA, underscoring the potential of AI-based chatbots in transforming the learning experience for language learners.

In examining students' perceptions and experiences with ChatGPT, it becomes evident that this AI-based chatbot has made a positive impact on writing proficiency within the field of SLA. The perceived effectiveness of ChatGPT in improving writing proficiency is a prominent theme in existing research (Dwivedi et al., 2023; AlAfnan et al., 2023; Kohnke, 2023). Students highly value the personalized feedback, guidance, and the convenience of having ChatGPT as a readily available writing resource at their disposal.

Moreover, research findings indicate a substantial degree of satisfaction among students regarding ChatGPT as a language learning tool (Cai et al., 2023; Liu et al., 2023; Wu and Yu, 2023). The user-friendly interface, accessibility, and interactive nature of ChatGPT contribute significantly to students' overall satisfaction, underlining its potential as an effective educational resource.

Furthermore, students' preferences in using ChatGPT have been investigated in the literature, shedding light on diverse viewpoints. Some learners prefer ChatGPT as their primary writing aid, while others see it as a complementary tool to be used alongside human feedback (Muñoz et al., 2023; Eloundou et al., 2023). Understanding these preferences is invaluable as it informs the design and implementation of ChatGPT in various language learning environments, catering to the distinct needs and preferences of different students.

The synthesis of this literature review underscores the considerable potential of ChatGPT in enhancing students' writing proficiency in the context of Second Language Acquisition. ChatGPT's utility as a writing aid, offering immediate feedback and promoting interactive writing practice, has garnered positive feedback from students. Their perception of ChatGPT as an effective tool is reinforced by their high levels of satisfaction with its use. However, the need for further research is apparent to explore the long-term effects, optimal integration strategies, and the symbiotic role of human feedback in conjunction with ChatGPT. An in-depth understanding of students' perspectives and experiences with ChatGPT stands to inform the development of more effective language learning tools and instructional practices, with the ultimate goal of elevating writing proficiency in the sphere of second language acquisition.

### 3. Methodology

#### 3.1. Research Design

This study utilizes a qualitative research design to explore the impact of ChatGPT on students' writing proficiency in second language acquisition (Figure 1). Qualitative research allows for an in-depth exploration of participants' perceptions and experiences, providing rich and nuanced data. The research design involves conducting interviews and surveys to gather data from the participants.

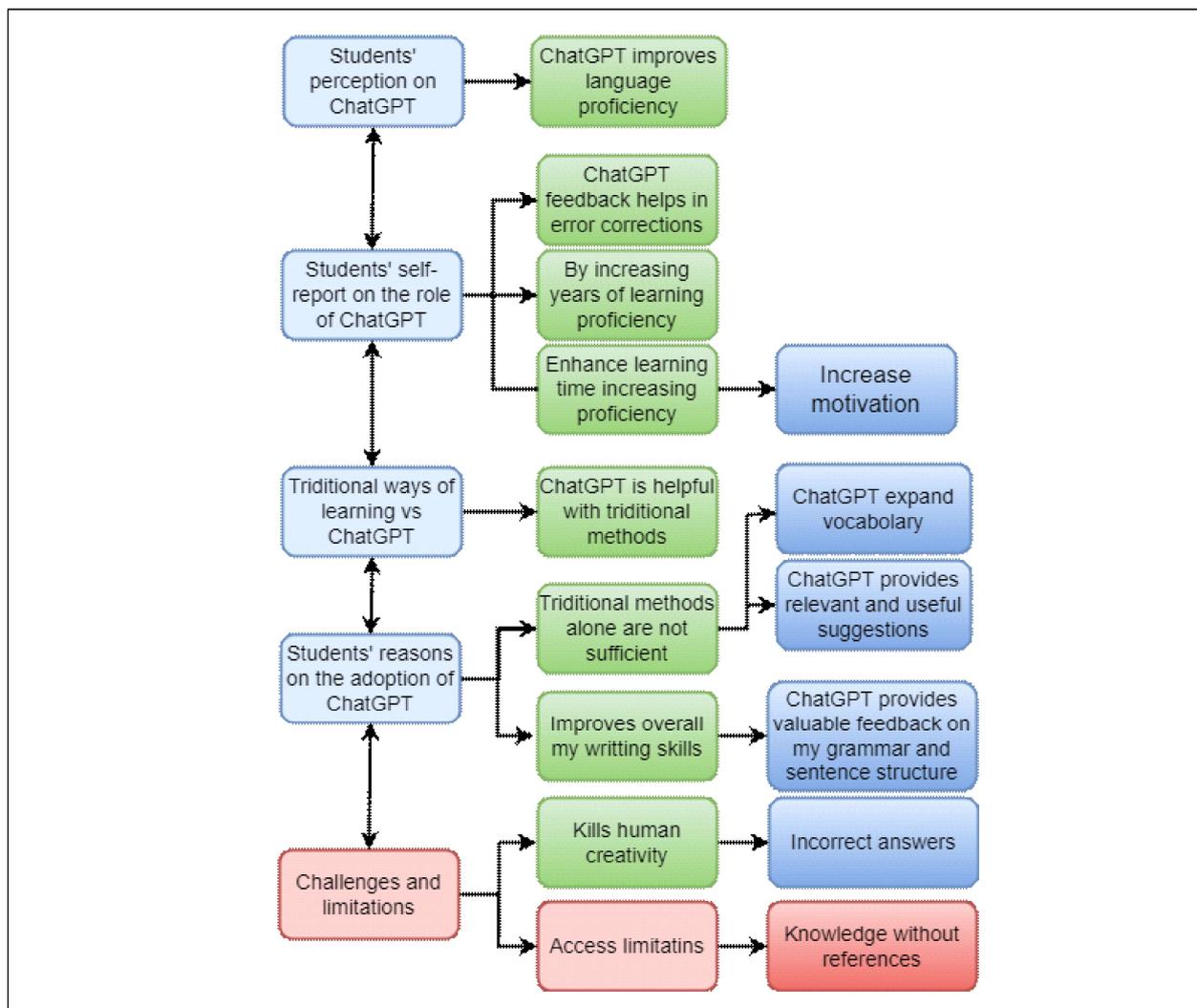
#### 3.2. Participant Selection

The participants in this study have been selected from a diverse group of students who are actively learning a second language (L2) through formal instruction. The selection considered factors such as language proficiency level, age, educational background, and cultural diversity to ensure a varied representation of participants.

#### 3.3. Data Collection

Semi-structured interviews have been conducted with the participants to gather in-depth insights into their perceptions, experiences, and attitudes regarding the use of ChatGPT for improving their writing skills. The interviews have been conducted in a one-on-one setting, allowing participants to express their thoughts freely and openly. The interviews were audio-recorded to ensure accurate data capture. The interview questions have been designed to cover various aspects related to the impact of ChatGPT on writing proficiency, including:

- Perceived usefulness of ChatGPT as a writing aid.
- Participants' experiences with using ChatGPT for writing practice.
- Attitudes toward ChatGPT as a conversation partner for improving writing skills.



**Figure 1: Thematic Analysis**

- Effects of ChatGPT on participants’ motivation and confidence in writing.
- Challenges and limitations encountered while using ChatGPT.

Surveys have been administered to complement the qualitative data obtained through interviews. The surveys will provide basic data on participants’ perceived effectiveness, satisfaction, and preferences regarding ChatGPT as a language learning tool. The survey questions have been designed to measure participants’ overall satisfaction with ChatGPT, perceived improvement in writing proficiency, and preferences for specific features or functionalities of the chatbot.

## 4. Data Analysis

### 4.1. Descriptive Analysis of Data

#### 4.1.1. Participants’ Demographics

In this qualitative analysis, the study comprised a diverse group of participants, with the majority (90.5%) falling within the age range of 20 to 30 years. Conversely, a smaller portion of the sample was aged between 30 and 40 years (Figure 2a). The gender distribution of the respondents revealed that the male participants accounted for a substantial number, total 13 individuals, whereas the female respondents constituted a comparatively lower count of 9 individuals (Figure 2b). The target languages of the study predominantly encompassed Chinese and English. participants reported varying durations of study, with a notable trend observed where most individuals had engaged in language learning for a period ranging from 3 to 4 years. This information sheds light on the linguistic background and learning experiences of the respondents.

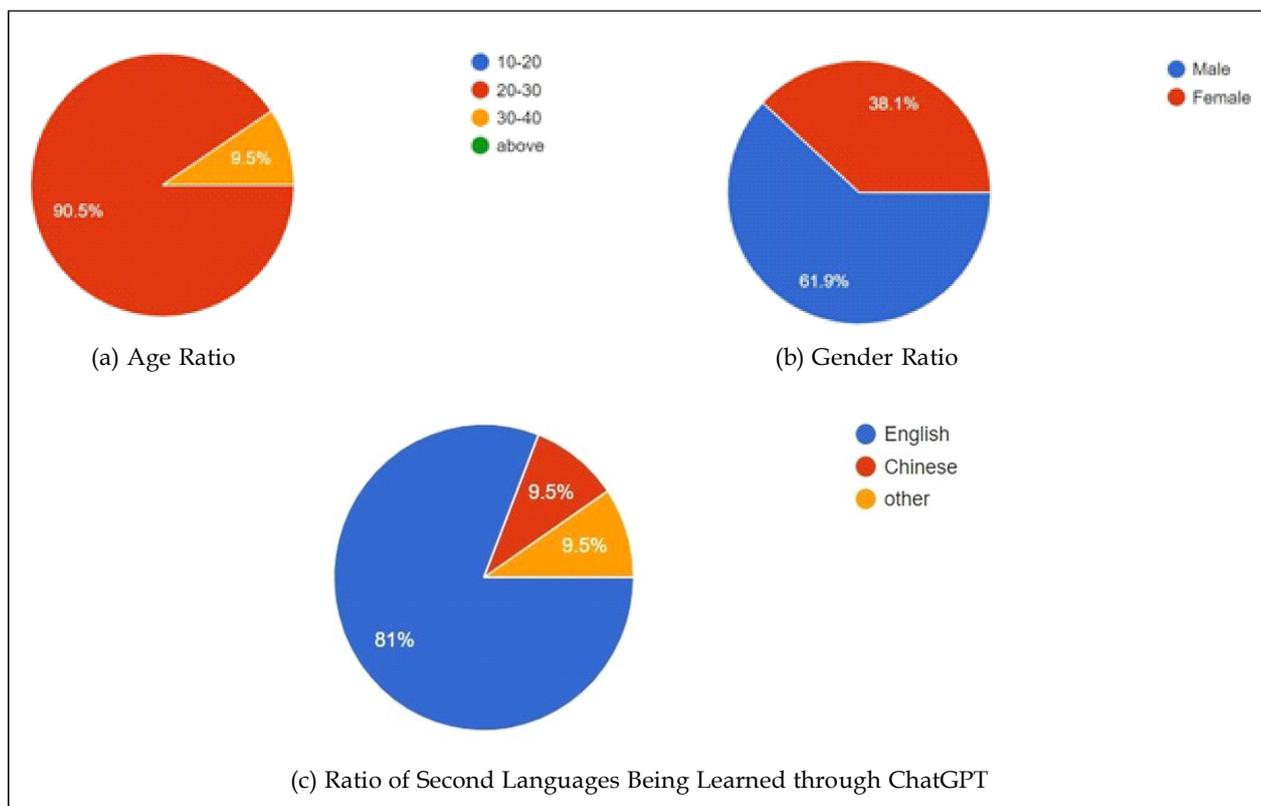
#### 4.1.2. Thematic Analysis of Data

Thematic analysis was manually conducted to derive meaningful patterns and themes from the data collected in this qualitative study. The process involved a systematic examination of the participants’ responses and narratives to identify recurring ideas and concepts. Through a rigorous and iterative process of coding, categorization, and interpretation, key themes emerged, providing a comprehensive understanding of the research topic. The thematic analysis provided a comprehensive and nuanced understanding of the participants’ language learning experiences, shedding light on the practical significance of language proficiency, the challenges encountered, the influence of study duration, and the impact of gender-related factors. These findings contribute to the existing knowledge base and offer valuable insights for future research and the development of targeted language learning interventions.

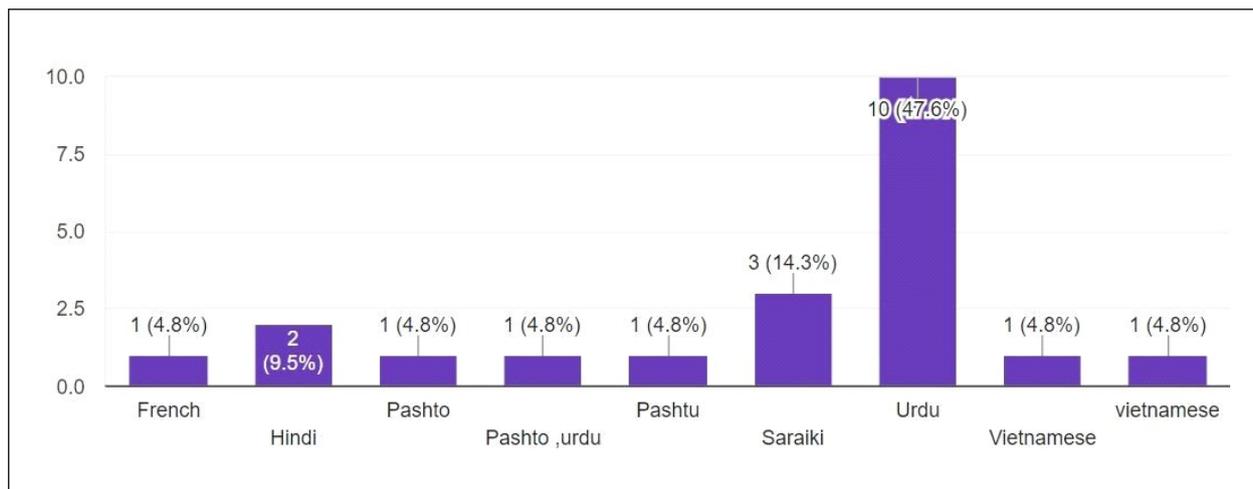
### 5. Discussion

In this section, we are presenting the findings derived from the qualitative analysis of data pertaining to students’ perceptions of the use of ChatGPT in language learning. The majority of students expressed positive views regarding the integration of ChatGPT in their Second Language Acquisition (SLA) process (Figure 2c). They acknowledged several benefits, including the facilitation of error correction, heightened motivation, extended learning duration, and enhanced language proficiency. Another noteworthy aspect highlighted by the participants was the amalgamation of traditional learning methods with ChatGPT, which was considered to yield more favorable outcomes. By incorporating ChatGPT into traditional language learning approaches, students reported experiencing increased effectiveness in their language learning endeavors. Furthermore, students provided insights into their reasons for adopting and utilizing ChatGPT in their SLA journey. The most prevalent factors included the perceived time-saving aspect, its usefulness in improving basic writing skills, its contribution to expanding vocabulary, and its provision of constructive feedback. Moreover, the impact of ChatGPT on language learning progress was evident through the participants’ feedback, which highlighted its role in providing feedback and pinpointing errors in language usage.

Despite the numerous advantages reported, several challenges and limitations of ChatGPT usage in language learning were also identified. Participants noted instances where ChatGPT failed to recognize certain



**Figure 2: Students’ Perception and Experiences**



**Figure 3: Native Languages Ratio**

commands, generated fake references and produced erroneous results. Additionally, concerns were raised regarding its potential adverse effects on creativity and the tendency to foster laziness in learners. These findings collectively shed light on the multifaceted nature of integrating ChatGPT into language learning and offer valuable insights into its perceived benefits, challenges, and implications. Understanding the students’ perspectives is essential for developing effective strategies to harness the potential of ChatGPT while addressing its limitations in language education settings.

Ethical guidelines have been followed throughout the research process. Informed consent was obtained from all participants, ensuring they understood the purpose of the study, their voluntary participation, and the confidentiality of their responses. Participants have the right to withdraw from the study at any time without consequences. The research adhered to data protection and privacy regulations, ensuring the anonymity and confidentiality of participants.

## 6. Conclusion

In conclusion, while this study has provided valuable insights into the impact of ChatGPT on students’ writing proficiency in the context of Second Language Acquisition, it is essential to acknowledge its limitations. The findings should be interpreted within the specific sample size and language learning context, warranting caution when generalizing the results. To build upon this research, future investigations should encompass more diverse participant pools, encompassing multiple languages, to attain a more comprehensive understanding of ChatGPT’s impact. Furthermore, to gain a holistic assessment of ChatGPT’s influence, it is crucial to delve into its long-term effects on writing proficiency and explore its implications for other language skills beyond writing. By addressing these considerations, future research can further unravel the potential of AI-based chatbots like ChatGPT in enhancing language learning, offering a broader perspective on their educational utility.

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