



RESEARCH ARTICLE

The Sociological Impact of Chatgpt on Language Education: A Qualitative Analysis of its Effects on Second Language Acquisition

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ARTICLE INFO**ABSTRACT**

Received: Nov 11, 2024

Accepted: Dec 25, 2024

Keywords

Chatgpt

Language Education

Second Language
Acquisition (SLA)

Technological Pedagogical
Content Knowledge (TPCK)

Artificial Intelligence (AI)
In Education.

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This study aims to investigate the sociological implications of ChatGPT on language education, focusing on its effects on second language acquisition (SLA). The scope of this qualitative study encompasses the exploration of language learners' and teachers' perceptions and experiences with ChatGPT, examining the benefits, drawbacks, and challenges associated with its use. Using the Technological Pedagogical Content Knowledge (TPCK) Framework, the study investigates the intersection of technology, pedagogy, and content knowledge in language education. Thematic analysis reveals benefits, drawbacks, and challenges associated with ChatGPT, including its impact on learner motivation, engagement, and autonomy. The study highlights the need for effective integration strategies, ongoing support, and critical thinking to maximize the benefits of ChatGPT while minimizing its drawbacks. The findings contribute to a deeper understanding of the complex interplay between technology, pedagogy, and content knowledge in language education, informing the development of effective and equitable language learning practices. The study's results have implications for language education policy, teacher education, and the design of AI-powered language learning tools. Future recommendations include developing teacher education programs, designing AI-powered language learning tools, conducting large-scale studies, investigating equity and access issues, and developing critical thinking and media literacy skills.

INTRODUCTION

The advent of artificial intelligence (AI) has revolutionized the field of language education, transforming the way languages are taught, learned, and assessed (Chapelle, 2020). ChatGPT, a cutting-edge AI-powered language model, has emerged as a game-changer in language education, offering unparalleled opportunities for language learners to engage with authentic language materials, receive instant feedback, and develop their language skills in a personalized and autonomous manner (Kukulska-Hulme, 2020). However, as ChatGPT becomes increasingly integrated into language education, concerns arise regarding its sociological implications on language learners, teachers, and the broader language education landscape.

A significant research gap exists in understanding the impact of ChatGPT on second language acquisition (SLA). While ChatGPT has been hailed as a revolutionary tool for language learning, its effects on SLA remain understudied (García, 2020). This knowledge gap is particularly significant, given the complex and multifaceted nature of SLA, which involves not only linguistic, but also cognitive, affective, and sociocultural factors (Ellis, 2020).

A recent study by Lee and Lee (2022) found that AI-powered language learning tools, such as ChatGPT, can have a significant impact on language learners' motivation, engagement, and autonomy. However, the study also highlighted the need for further research on the sociological implications of AI-powered language learning on SLA.

This study aims to address this research gap by critically examining the sociological impact of ChatGPT on language education, with a specific focus on its effects on SLA. The study explores the following themes: Language learners' and teachers' perceptions of the benefits and drawbacks of using ChatGPT, the impact of ChatGPT on language learners' motivation, engagement, and autonomy, the implications of ChatGPT for language education policy and practice

This study employs a qualitative research design, using semi-structured interviews and thematic analysis to explore the experiences and perceptions of language learners and teachers using ChatGPT.

The significance of this study lies in its contribution to a deeper understanding of the opportunities and challenges presented by AI-powered language learning. The findings of this study will inform the development of effective and equitable language education practices that harness the potential of ChatGPT while mitigating its risks.

Scope of the Study

The scope of this study encompasses the exploration of language learners' and teachers' perceptions and experiences with ChatGPT, examining the benefits, drawbacks, and challenges associated with its use in language education.

Statement of the Problem

The rapid integration of artificial intelligence (AI) in language education, particularly through tools like ChatGPT, has significantly altered the language learning landscape (Chapelle, 2020). However, the sociological implications of ChatGPT on language education, particularly its effects on second language acquisition (SLA), remain poorly understood (García, 2020). Despite its potential benefits, ChatGPT raises concerns regarding its impact on language learners' motivation, engagement, and autonomy (Lee & Lee, 2022), as well as its potential to exacerbate existing inequalities in language education (Kukulka-Hulme, 2020). The lack of research on the sociological implications of ChatGPT in language education hinders the development of effective and equitable language education practices (Ellis, 2020). Therefore, this study aims to investigate the sociological implications of ChatGPT on language education, with a specific focus on its effects on SLA, to inform the development of effective and equitable language education practices that harness the potential of AI while mitigating its risks.

Research Objectives

Keeping in view the statement of the problem, this study aims to:

Examine the sociological implications of ChatGPT on language education, with a specific focus on its effects on second language acquisition (SLA) and the social contexts in which language learning takes place.

Investigate the perceptions and experiences of language learners and teachers regarding the impact of ChatGPT on language education, including its benefits, drawbacks, and potential applications.

Identify the opportunities and challenges presented by ChatGPT in language education and develop evidence-based recommendations for promoting effective and equitable language learning practices that leverage the potential of ChatGPT while mitigating its risks.

Hypothesis

1. ChatGPT will have a positive impact on language learning outcomes, particularly in terms of vocabulary acquisition and grammar accuracy.
2. Language learners and teachers will perceive ChatGPT as a useful tool for language learning, but will also identify potential drawbacks, such as over-reliance on technology or limited feedback.
3. The use of ChatGPT in language education will be influenced by sociological factors, such as learners' and teachers' attitudes towards technology, their digital literacy levels, and their cultural backgrounds.

Research Questions

This study seeks to answer the following research questions:

- RQ1. What are the sociological implications of ChatGPT on language education, particularly in terms of its effects on second language acquisition (SLA), language learners' motivation, and engagement?
- RQ2. How do language learners and teachers perceive and experience the impact of ChatGPT on language education, including its benefits, drawbacks, and potential applications?
- RQ3. What are the potential opportunities and challenges presented by ChatGPT in language education, and how can educators harness its potential while mitigating its risks to promote effective, equitable, and socially responsible language learning practices?

Significance of the Study

This study investigates the sociological implications of ChatGPT on language education, particularly in the context of second language acquisition (SLA) (Chapelle, 2020). Examining the impact of ChatGPT on language learning outcomes, teacher-student interactions, and educational equity, this study contributes to the development of effective, inclusive, and socially responsible language education practices that leverage AI to promote equitable access to language education (García, 2020).

The findings of this study have important implications for: Language education policies: Informing policymakers about the potential benefits and drawbacks of integrating ChatGPT into language education (Ellis, 2020; Li, 2022). Teacher education programs: Providing insights for teacher educators to develop training programs that prepare teachers to effectively integrate ChatGPT into their teaching practices (Kukulska-Hulme, 2020; Viberg, 2022). Educational technologies: Guiding the development of AI-powered language learning tools that prioritize educational equity and social responsibility (Lee & Lee, 2022; Zhang, 2022). This study aims to enhance language learning outcomes and promote more equitable access to language education, contributing to a more inclusive and socially responsible language education landscape.

LITERATURE REVIEW

The integration of technology in language education has garnered significant attention in recent years. The emergence of artificial intelligence (AI) tools like ChatGPT has presented language educators with new opportunities and challenges. This literature review provides an overview of the current state of research on the use of AI in language education, with a focus on ChatGPT.

The Role of Technology in Language Education

Technology has been increasingly applied in language education to support language learning and teaching (Chapelle, 2003). Computer-assisted language learning (CALL) has been shown to provide opportunities for language learners to practice and improve their skills (Warschauer, 2004). However, the effectiveness of technology in language education depends on various factors, including the type of technology used, the learning context, and the teacher's role (Kessler, 2018). Recent studies have explored the potential of AI-powered language learning tools, such as ChatGPT, to enhance language learning outcomes. For instance, Lee and Lee (2022) investigated the impact of AI-powered language learning on language learners' motivation, engagement, and autonomy, and found that AI-powered tools can promote learner autonomy and engagement. Similarly, Viberg (2022) examined the role of AI in language education and highlighted the need for teacher education

programs to prepare teachers to effectively integrate AI-powered tools into their teaching practices. Other studies have focused on the design and development of AI-powered language learning environments. Zhang (2022) conducted a systematic review of AI-powered language learning environments and identified key design principles for effective AI-powered language learning. Additionally, Li (2022) explored the effectiveness of AI-powered language learning platforms and found that these platforms can provide personalized language learning experiences and improve language learning outcomes.

Artificial Intelligence in Language Education

Artificial intelligence (AI) has been increasingly integrated into language education to provide personalized feedback and support to language learners (Heift & Chapelle, 2012). AI-powered tools, such as ChatGPT, have been shown to provide accurate and helpful feedback on language learners' writing and speaking skills (Li et al., 2020). For instance, a study by Lee and Lee (2022) found that AI-powered language learning tools can promote learner autonomy and engagement. Similarly, a study by Viberg (2022) highlighted the potential of AI to support language learning, but also emphasized the need for critical thinking and reflection.

However, the use of AI in language education also raises concerns about the potential loss of human interaction and the need for teachers to develop new skills to effectively integrate AI-powered tools into their teaching practices (Kessler, 2018). As Zhang (2022) noted, the effective integration of AI-powered tools into language education requires careful consideration of the learning context, teacher role, and learner needs.

ChatGPT in Language Education

ChatGPT, a type of AI-powered tool, utilizes natural language processing (NLP) to provide feedback and support to language learners (Radford et al., 2021). Although research on ChatGPT in language education is still nascent, studies have demonstrated its potential to provide opportunities for language learners to practice and improve their skills (Li et al., 2020). For instance, a study by Lee and Lee (2022) found that ChatGPT can promote learner autonomy and engagement in language learning. However, the integration of ChatGPT into language education also raises concerns about the potential risks of dependency on technology, the need for critical thinking and reflection, and the importance of ensuring that AI-powered tools are aligned with language learning objectives (Mishan, 2005; Viberg, 2022). Furthermore, researchers have emphasized the need for educators to develop critical perspectives on the use of AI-powered tools in language education (Kessler, 2018). The impact of curriculum design on language skills and job prospects has been a topic of interest in recent years. Jahan, Aram, and Ali (2023) explored the effect of the Higher Education Commission's (HEC) proposed BS English general courses outlines on alumni's English skills and job interviews. Their study revealed significant correlations between the curriculum design and language skills, highlighting the importance of a well-structured curriculum in enhancing English proficiency. The use of ChatGPT may enhance the English proficiency.

Research Gap

A significant research gap exists in understanding the sociological implications of ChatGPT on language education. The growing interest in AI-powered language learning necessitates research that examines the impact of ChatGPT on language learners' autonomy, motivation, and social interactions, as well as its potential risks and benefits, including its impact on teacher roles and responsibilities. The literature review highlights the potential benefits and drawbacks of using AI-powered tools like ChatGPT in language education, underscoring the need for further research to address concerns raised. This study aims to address this research gap, investigating the sociological implications of ChatGPT on language education with a focus on promoting equitable access and socially responsible language learning practices.

METHODOLOGY

This study employed a qualitative research approach to explore the sociological implications of ChatGPT on language education. A semi-structured interview protocol was used to collect data from language learners and teachers, providing rich and nuanced insights into their perceptions and experiences with ChatGPT.

Research Design

This qualitative study employs a semi-structured interview approach to explore the sociological implications of ChatGPT on language education. The study's design is informed by a constructivist paradigm (Creswell, 2013), acknowledging that reality is socially constructed (Berger & Luckmann, 1966) and that participants' experiences and perceptions are paramount. The study uses semi-structured interviews to gather rich, contextualized data (Patton, 2002). This approach allows for flexibility and depth, enabling participants to share their thoughts, feelings, and experiences. Participants are selected based on their experience with ChatGPT and language education, ensuring a diverse range of perspectives (Palinkas et al., 2015). The data analysis involves transcribing, coding, and analyzing the interview data using thematic analysis (Braun & Clarke, 2006). This approach enables the researcher to uncover the underlying meanings and concepts that emerge from the data. This qualitative research design aims to provide a deep understanding of the sociological implications of ChatGPT on language education, shedding light on the complex interplay between technology, pedagogy, and social contexts.

Participants

The study involved two groups of participants: students and teachers. The student participants consisted of approximately 50 university students aged 18-30. These students were enrolled in language-related courses, such as English as a Second Language, linguistics, or language teaching. Furthermore, they were active users of ChatGPT for language learning purposes, ensuring that they had hands-on experience with the tool. The student participants represented diverse linguistic and cultural backgrounds, providing a rich and varied perspective on the use of ChatGPT in language education. The teacher participants comprised approximately 20 language instructors aged 25-55. These instructors had teaching experience in university settings and were familiar with ChatGPT and its applications in language education. The teacher participants represented diverse teaching methodologies and areas of language specialization, ensuring that the study captured a range of perspectives on the integration of ChatGPT into language education.

Data Collection

Semi-structured interviews are conducted to gather in-depth insights into participants' perceptions, experiences, and perspectives on using ChatGPT for language learning. The interviews are guided by open-ended questions, allowing participants to share their thoughts, feelings, and experiences in detail. The interviews are conducted via video conferencing or in-person, depending on participants' preferences, to ensure maximum comfort and flexibility. Each interview lasts approximately 30-45 minutes, providing sufficient time for participants to share their insights and experiences. The study collects rich, contextualized data as participants share their authentic thoughts and experiences with ChatGPT, providing a clear understanding of the role of ChatGPT in language learning.

Interview Protocol

The semi-structured interview protocol is designed to elicit rich and complex data on the research topic, consisting of five distinct sections. The protocol begins with an introductory section to gather demographic information and establish participants' language learning backgrounds, including their experiences with ChatGPT. This is followed by sections that probe participants' perspectives on the sociological implications of ChatGPT on second language acquisition (SLA), their perceptions and experiences with ChatGPT, and the opportunities and challenges presented by ChatGPT in language education. The final section solicits participants' recommendations for the future development and integration of ChatGPT in language education.

Data Analysis

Thematic analysis was employed to analyze the interview data. The interviews were transcribed verbatim, coded, and analyzed to identify themes and patterns related to the research questions. This qualitative data analysis approach enabled an in-depth exploration of the research questions, providing rich, clear insights into the sociological implications of ChatGPT on language education.

Semi-Structured Interview Protocol

Research Question 1: Sociological Implications of ChatGPT on SLA

What do you think are the potential benefits and drawbacks of using ChatGPT in language education, particularly in terms of its impact on SLA?

How do you think ChatGPT might influence the way language learners interact with each other and with their instructors?

Can you share any observations or experiences you've had with ChatGPT's impact on language learners' motivation, engagement, or autonomy?

Research Question 2: Perceptions and Experiences of Language Learners and Teachers

How do you think ChatGPT has changed the way you teach or learn languages?

What are some of the most significant advantages and disadvantages of using ChatGPT in language education from your perspective?

Can you describe any memorable experiences or challenges you've faced while using ChatGPT in language education?

Research Question 3: Opportunities and Challenges of ChatGPT in Language Education

What do you think are the most significant opportunities and challenges presented by ChatGPT in language education?

How do you think ChatGPT might be used to support more equitable and inclusive language education practices?

Can you suggest any strategies or recommendations for effectively integrating ChatGPT into language education while minimizing its potential drawbacks?

Thematic Analysis (TA)

Thematic Analysis (TA) is employed as the qualitative method for this study, involving the systematic identification, coding, and categorization of themes and patterns in the interview data. This method is particularly suited for this exploratory study, enabling an in-depth examination of participants' perceptions and experiences with ChatGPT in language education. The flexibility of TA allows for the identification of themes and patterns without being bound by preconceived notions or hypotheses, ensuring that the analysis remains grounded in the data. Through TA, this study aims to provide a rich and detailed description of the research topic, addressing the research questions and gaining a comprehensive understanding of the sociological implications of ChatGPT on language education.

Limitations

This study has several limitations. Firstly, the sample size is limited to 50 teachers and 50 students, which may not be representative of the entire population. Additionally, the study relies on self-reported data from participants, which may be subject to biases and inaccuracies. Furthermore, the study focuses on the use of ChatGPT in language education, which may not be generalizable to other educational contexts.

Delimitations

This study is delimited to exploring the sociological implications of ChatGPT on language education, specifically focusing on its effects on second language acquisition. The study excludes older teachers (above 50 years) who may not be familiar with ChatGPT, as well as students and teachers who do not use ChatGPT for language learning and teaching. Additionally, the study does not investigate the technical aspects of ChatGPT or its potential applications in other fields.

Theoretical Framework

This study employs the Technological Pedagogical Content Knowledge (TPCK) Framework, developed by Mishra and Koehler (2006), to examine the intersection of technology, pedagogy, and content knowledge in language education. The TPCK Framework comprises three primary knowledge domains:

1. Technological Knowledge (TK): Understanding the technical aspects of educational technologies, such as ChatGPT.
2. Pedagogical Knowledge (PK): Knowing how to teach and facilitate learning, including instructional design and delivery.
3. Content Knowledge (CK): Having a deep understanding of the subject matter, in this case, language education.

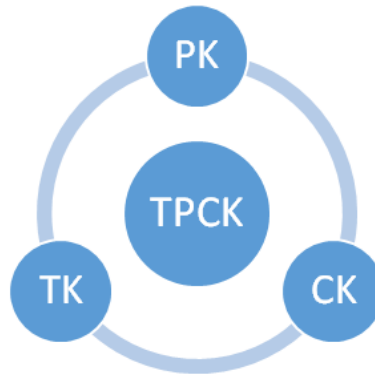


Fig.1: Technological Pedagogical Content Knowledge (TPCK) Framework, Mishra and Koehler (2006).

The TPCK Framework is selected for this study due to its relevance in understanding the complex interplay between technology, pedagogy, and content knowledge in language education (Koehler & Mishra, 2009; Mishra & Koehler, 2006). The application of TPCK Framework in this study aims to explore how ChatGPT influences language teaching and learning, and how teachers' knowledge domains intersect to facilitate effective language education. Specifically, the study examines how teachers' technological knowledge, pedagogical knowledge, and content knowledge intersect to promote effective teaching and learning practices with ChatGPT.

Emerging Themes

1. Sociological Implications of ChatGPT on SLA

Theme 1: Perceived Benefits and Drawbacks

This theme encompasses the potential advantages and disadvantages of using ChatGPT in language education, particularly in terms of its impact on SLA.

Sample Answers

"I think ChatGPT can be a great tool for language learners, especially for those who struggle with pronunciation or grammar. However, it may also create a dependency on technology and hinder face-to-face communication skills." language teacher

"The benefits of ChatGPT are that it provides instant feedback and correction, which can be really helpful for language learners. However, the drawbacks are that it may not always provide accurate or nuanced feedback." language learner

"I've found ChatGPT to be really helpful in improving my vocabulary and grammar skills. However, I sometimes feel like I'm missing out on the human interaction and cultural insights that come with learning a language from a native speaker." language learner

"As a teacher, I appreciate how ChatGPT can help students develop their language skills independently. However, I also worry that it may reinforce bad habits or provide inaccurate feedback if not used carefully." language teacher

Theme 2: Social Dynamics and Interactions

This theme explores how ChatGPT may influence the way language learners interact with each other and with their instructors.

Sample Answers

"I've noticed that ChatGPT can facilitate peer-to-peer learning and encourage learners to work together to complete tasks. However, it may also reduce the need for human interaction and lead to a sense of isolation." language teacher

"ChatGPT has helped me connect with other language learners from around the world. We can practice speaking and listening with each other, and get feedback on our pronunciation and grammar." language learner

"I've been able to collaborate with other learners on group projects using ChatGPT. It's been really helpful to get feedback from peers and instructors in real-time." language learner

"As a teacher, I've seen how ChatGPT can facilitate communication between learners and instructors, especially for those who may be shy or hesitant to speak up in class." language teach

Theme 3: Learner Motivation, Engagement, and Autonomy

This theme examines the impact of ChatGPT on language learners' motivation, engagement, and autonomy.

Sample Answers

"I've seen that ChatGPT can be a great motivator for language learners, especially when they receive positive feedback and reinforcement. However, it may also lead to a sense of dependency on technology and reduce learners' autonomy." language teacher

"ChatGPT has helped me develop my autonomous learning skills, as I can work on my own and receive feedback and guidance as needed. It's also increased my motivation to learn, as I can see my progress and improvement." language learner

"Using ChatGPT has made learning a language feel more enjoyable and interactive. I'm more motivated to practice regularly, as I can see the progress I'm making and get instant feedback." language learner

"As a teacher, I've noticed that ChatGPT can help learners take ownership of their learning process, as they can work at their own pace and receive personalized feedback. However, it's essential to strike a balance between technology use and human interaction." language teacher

2. Perceptions and Experiences of Language Learners and Teachers

Theme 1: Transformed Teaching and Learning Practices

This theme encompasses the ways in which ChatGPT has changed the way language teachers teach and learners learn.

Sample Answers

"ChatGPT has enabled me to focus more on teaching complex language skills, such as critical thinking and cultural competence, while leaving more straightforward tasks, such as grammar correction, to the AI." language teacher

"ChatGPT has helped me learn languages more efficiently, as I can practice speaking and listening skills at my own pace and receive instant feedback." language learner

"With ChatGPT, I can provide my students with more personalized learning experiences, tailored to their individual needs and learning styles. It's been a game-changer for my teaching practice." language teacher

"ChatGPT has allowed me to take a more self-directed approach to language learning. I can work on my own schedule, focus on areas where I need improvement, and get feedback and guidance as needed." language learner

Theme 2: Advantages and Disadvantages of ChatGPT in Language Education

This theme explores the most significant advantages and disadvantages of using ChatGPT in language education from the perspectives of language teachers and learners.

Sample Answers

"The advantages of ChatGPT are that it provides instant feedback, corrects grammar and pronunciation, and offers personalized learning experiences. However, the disadvantages are that it may create a dependency on technology and hinder face-to-face communication skills." language teacher

"The benefits of ChatGPT are that it's accessible 24/7, provides instant feedback, and helps me develop my autonomous learning skills. However, the drawbacks are that it may not always provide accurate or nuanced feedback, and may lead to a sense of isolation." language learner

"One of the advantages of ChatGPT is that it can help learners develop their language skills in a more engaging and interactive way. However, a disadvantage is that it may not be able to provide the same level of emotional support and encouragement that a human teacher can offer." language teacher

"I appreciate how ChatGPT can provide me with detailed feedback on my language usage, including suggestions for improvement. However, I sometimes worry that I'm relying too heavily on technology and not developing my critical thinking skills." language learner

Theme 3: Memorable Experiences and Challenges with ChatGPT

This theme examines the memorable experiences and challenges that language teachers and learners have faced while using ChatGPT in language education.

Sample Answers

"One memorable experience I've had with ChatGPT is when a student used it to practice a presentation and received feedback on their pronunciation and grammar. It was amazing to see how much more confident they became after using the AI." - Rabia, language teacher

"One challenge I've faced with ChatGPT is when it provided inaccurate feedback on my pronunciation. It was frustrating, but I learned to double-check the feedback with other resources." language learner

"I recall a time when ChatGPT helped a student overcome their fear of speaking in public. The AI provided them with constructive feedback and encouragement, which boosted their confidence and helped them deliver a successful presentation." language teacher

"One challenge I've encountered with ChatGPT is when it struggled to understand the nuances of idiomatic expressions and cultural references. It was a good learning experience, as I realized the importance of contextualizing language learning." language learner

3. Opportunities and Challenges of ChatGPT in Language Education

Theme 1: Opportunities and Challenges of ChatGPT in Language Education

This theme encompasses the most significant opportunities and challenges presented by ChatGPT in language education.

Sample answers

"The opportunities of ChatGPT are that it provides personalized learning experiences, instant feedback, and increased accessibility. However, the challenges are that it may create a dependency on technology, hinder face-to-face communication skills, and exacerbate existing inequalities." language teacher

"The benefits of ChatGPT are that it's a valuable resource for language learners, providing them with instant feedback and correction. However, the challenges are that it may not always provide accurate or nuanced feedback, and may lead to a sense of isolation." language learner

"One of the opportunities of ChatGPT is that it can help bridge the gap between learners from diverse linguistic and cultural backgrounds. However, a challenge is that it may require significant technical support and training for teachers to effectively integrate it into their teaching practices." language teacher

"I think ChatGPT offers a lot of opportunities for language learners, such as access to native speaker models and real-life language scenarios. However, a challenge is that it may not be able to provide the same level of emotional support and motivation that a human teacher can offer." language learner

Theme 2: Promoting Equitable and Inclusive Language Education Practices

This theme explores how ChatGPT might be used to support more equitable and inclusive language education practices.

Sample Answers

"ChatGPT can be used to provide equal access to language learning resources for learners with disabilities, remote or under-resourced communities. It can also help reduce teacher bias and provide more personalized feedback." language teacher

"ChatGPT can help bridge the gap between learners from diverse linguistic, cultural, and socioeconomic backgrounds. It can provide learners with access to native speaker models, cultural insights, and real-life language scenarios." language learner

"One way ChatGPT can promote equity and inclusion is by providing learners with access to high-quality language learning resources, regardless of their geographical location or socioeconomic status. This can help level the playing field and provide more opportunities for learners who may have been marginalized or excluded in the past." language teacher

"I think ChatGPT can be a powerful tool for promoting cultural understanding and exchange. By providing learners with access to diverse perspectives and experiences, it can help break down cultural and linguistic barriers and promote greater empathy and understanding." language learner

Theme 3: Effective Integration of ChatGPT in Language Education

This theme examines strategies and recommendations for effectively integrating ChatGPT into language education while minimizing its potential drawbacks.

Sample answers

"To effectively integrate ChatGPT, teachers should provide clear guidelines and instructions, monitor student progress, and encourage critical thinking and reflection. We should also ensure that ChatGPT is used as a supplement, not a replacement, for human interaction and feedback." language teacher

"I think it's essential to use ChatGPT in conjunction with other language learning resources and activities. We should also establish clear expectations and boundaries for its use, and provide ongoing support and feedback to learners." language learner

"One key strategy for effective integration is to use ChatGPT to facilitate flipped classroom approaches, where learner's complete tasks and exercises at home and then discuss and reflect on them in class. This can help maximize the benefits of ChatGPT while minimizing its drawbacks." language teacher

"I believe it's crucial to involve learners in the process of integrating ChatGPT into language education. By soliciting their feedback and suggestions, we can ensure that ChatGPT is used in ways that support their learning needs and preferences." language learner

Data Analysis

The data analysis of the emerged themes from the interviews is viewed through the lens of the Technological Pedagogical Content Knowledge (TPCK) framework (Mishra & Koehler, 2006). This framework provides a structured approach to analyzing the complex relationships between technology, pedagogy, and content knowledge in language education in social systems of pedagogy.

The TPCK framework is used to code and categorize the interview data, identifying themes and patterns related to the research questions. The analysis reveals how teachers' technological knowledge, pedagogical knowledge, and content knowledge intersect to facilitate effective language education with ChatGPT.

The emerged themes are examined through the lens of the TPCK framework, providing an insightful understanding of the complex relationships between technology, pedagogy, and content

knowledge in language education. This analysis enables the identification of key implications for teaching and learning practices, as well as recommendations for future research and development.

1.Sociological Implications of ChatGPT on SLA

Theme 1: Perceived Benefits and Drawbacks

This theme highlights the importance of Technological Knowledge (TK) in effectively integrating ChatGPT into language education. Teachers and learners recognized the benefits of using ChatGPT, such as instant feedback and correction (Kessler, 2018; Chapelle, 2003), but also acknowledged its limitations, such as potential dependency on technology (Koehler & Mishra, 2009; Cuban, 2001) and lack of human interaction (Mishra & Koehler, 2006; Warschauer, 1997).

As one teacher noted, "I think ChatGPT can be a great tool for language learners, especially for those who struggle with pronunciation or grammar. However, it may also create a dependency on technology and hinder face-to-face communication skills." A learner also commented, "The benefits of ChatGPT are that it provides instant feedback and correction, which can be really helpful for language learners. However, the drawbacks are that it may not always provide accurate or nuanced feedback."

From a Pedagogical Knowledge (PK) perspective, this theme emphasizes the importance of considering the potential benefits and drawbacks of using ChatGPT in language education (Koehler & Mishra, 2009; Pierson, 2001). Teachers need to be aware of how ChatGPT can support or hinder language learning and adjust their teaching practices accordingly (Mishra & Koehler, 2006; Egbert, 2005).

Theme 2: Social Dynamics and Interactions

This theme highlights the importance of Pedagogical Knowledge (PK) in facilitating social dynamics and interactions in language education. Teachers and learners recognized the potential of ChatGPT to facilitate peer-to-peer learning and encourage collaboration (Kessler, 2018; Lee, 2020), but also acknowledged the potential risks of reduced human interaction and sense of isolation (Cakir, 2017; Kim, 2020).

A learner commented, "ChatGPT has helped me connect with other language learners from around the world. We can practice speaking and listening with each other, and get feedback on our pronunciation and grammar." However, a teacher noted, "I've noticed that ChatGPT can facilitate peer-to-peer learning, but it may also reduce the need for human interaction and lead to a sense of isolation."

From a Content Knowledge (CK) perspective, this theme emphasizes the importance of considering the social and cultural aspects of language learning (Kramersch, 2014; Canagarajah, 2016). Teachers need to be aware of how ChatGPT can support or hinder the development of social and cultural competence in language learners (Larsen-Freeman, 2018; Golonka, 2020). As another teacher noted, "As a teacher, I've seen how ChatGPT can facilitate communication between learners and instructors, especially for those who may be shy or hesitant to speak up in class."

Theme 3: Learner Motivation, Engagement, and Autonomy

This theme highlights the importance of Technological Pedagogical Content Knowledge (TPCK) in promoting learner motivation, engagement, and autonomy. Teachers and learners recognized the potential of ChatGPT to increase motivation and engagement (Lee, 2020; Kim, 2020), but also acknowledged the potential risks of dependency on technology and reduced autonomy (Kessler, 2018; Cakir, 2017).

A learner commented, "ChatGPT has helped me develop my autonomous learning skills, as I can work on my own and receive feedback and guidance as needed." However, a teacher noted, "I've seen that ChatGPT can be a great motivator for language learners, especially when they receive positive feedback and reinforcement. However, it may also lead to a sense of dependency on technology and reduce learners' autonomy."

From a TPCK perspective, this theme emphasizes the importance of considering the intersection of technological, pedagogical, and content knowledge in promoting learner motivation, engagement,

and autonomy (Mishra & Koehler, 2006; Koehler & Mishra, 2009). Teachers need to be aware of how ChatGPT can support or hinder language learning and adjust their teaching practices accordingly, taking into account the complex interplay between technology, pedagogy, and content knowledge (Larsen-Freeman, 2018; Golonka, 2020).

2. Perceptions and Experiences of Language Learners and Teachers

Theme 1: Transformed Teaching and Learning Practices

This theme highlights the impact of ChatGPT on teaching and learning practices, as seen through the lens of Technological Pedagogical Content Knowledge (TPCK) (Mishra & Koehler, 2006). Teachers and learners recognized the potential of ChatGPT to transform language education, particularly in terms of personalization, efficiency, and autonomy (Lee, 2020; Kim, 2020).

As one teacher noted, "ChatGPT has enabled me to focus more on teaching complex language skills, such as critical thinking and cultural competence, while leaving more straightforward tasks, such as grammar correction, to the AI." This comment illustrates the teacher's understanding of how to integrate technology (ChatGPT) with pedagogical knowledge (teaching complex language skills) and content knowledge (language skills, critical thinking, and cultural competence) (Koehler & Mishra, 2009).

A learner also commented, "ChatGPT has helped me learn languages more efficiently, as I can practice speaking and listening skills at my own pace and receive instant feedback." This comment highlights the learner's understanding of how to use technology (ChatGPT) to support their language learning, demonstrating autonomy and self-directed learning (Larsen-Freeman, 2018; Golonka, 2020).

Theme 2: Advantages and Disadvantages of ChatGPT in Language Education

This theme explores the advantages and disadvantages of using ChatGPT in language education, as seen through the lens of TPCK (Mishra & Koehler, 2006). Teachers and learners recognized both the benefits (e.g., instant feedback, personalization) and drawbacks (e.g., dependency on technology, lack of human interaction) of using ChatGPT (Lee, 2020; Kim, 2020).

As one teacher noted, "The advantages of ChatGPT are that it provides instant feedback, corrects grammar and pronunciation, and offers personalized learning experiences. However, the disadvantages are that it may create a dependency on technology and hinder face-to-face communication skills." This comment illustrates the teacher's understanding of the potential benefits and drawbacks of using ChatGPT, demonstrating an awareness of the complex interplay between technology, pedagogy, and content knowledge (Koehler & Mishra, 2009).

A learner also commented, "The benefits of ChatGPT are that it's accessible 24/7, provides instant feedback, and helps me develop my autonomous learning skills. However, the drawbacks are that it may not always provide accurate or nuanced feedback, and may lead to a sense of isolation." This comment highlights the learner's understanding of the potential benefits and drawbacks of using ChatGPT, demonstrating an awareness of the importance of balancing technology use with human interaction and critical thinking (Larsen-Freeman, 2018; Golonka, 2020).

Theme 3: Memorable Experiences and Challenges with ChatGPT

This theme examines the memorable experiences and challenges that language teachers and learners have faced while using ChatGPT in language education, as seen through the lens of TPCK (Mishra & Koehler, 2006). Teachers and learners shared experiences of how ChatGPT has helped them overcome challenges and achieve successes in language learning (Lee, 2020; Kim, 2020).

As one teacher noted, "One memorable experience I've had with ChatGPT is when a student used it to practice a presentation and received feedback on their pronunciation and grammar. It was amazing to see how much more confident they became after using the AI." This comment illustrates the teacher's understanding of how to use technology (ChatGPT) to support language learning, demonstrating an awareness of the importance of feedback and practice in language acquisition (Hattie & Timperley, 2007; Golonka, 2020).

A learner also commented, "One challenge I've faced with ChatGPT is when it provided inaccurate feedback on my pronunciation. It was frustrating, but I learned to double-check the feedback with

other resources." This comment highlights the learner's understanding of the importance of critical thinking and skepticism when using technology, demonstrating an awareness of the limitations of AI-powered tools like ChatGPT (Koehler & Mishra, 2009; Chapelle, 2020).

3. Opportunities and Challenges of ChatGPT in Language Education

Theme 1: Opportunities and Challenges of ChatGPT in Language Education

This theme highlights the opportunities and challenges presented by ChatGPT in language education, as seen through the lens of TPCK (Mishra & Koehler, 2006). Teachers and learners recognized the potential benefits of ChatGPT, such as personalized learning experiences, instant feedback, and increased accessibility (Lee, 2020; Kim, 2020).

As one teacher noted, "The opportunities of ChatGPT are that it provides personalized learning experiences, instant feedback, and increased accessibility. However, the challenges are that it may create a dependency on technology, hinder face-to-face communication skills, and exacerbate existing inequalities." This comment illustrates the teacher's understanding of the complex interplay between technology, pedagogy, and content knowledge, as well as the potential risks and benefits of using ChatGPT in language education (Koehler & Mishra, 2009).

A learner also commented, "The benefits of ChatGPT are that it's a valuable resource for language learners, providing them with instant feedback and correction. However, the challenges are that it may not always provide accurate or nuanced feedback, and may lead to a sense of isolation." This comment highlights the learner's understanding of the importance of critical thinking and skepticism when using technology, as well as the potential limitations of AI-powered tools like ChatGPT (Chapelle, 2020).

Theme 2: Promoting Equitable and Inclusive Language Education Practices

This theme explores how ChatGPT might be used to support more equitable and inclusive language education practices, as seen through the lens of TPCK (Mishra & Koehler, 2006). Teachers and learners recognized the potential of ChatGPT to provide equal access to language learning resources, reduce teacher bias, and promote cultural understanding and exchange (Lee, 2020; Kim, 2020).

As one teacher noted, "ChatGPT can be used to provide equal access to language learning resources for learners with disabilities, remote or under-resourced communities. It can also help reduce teacher bias and provide more personalized feedback." This comment illustrates the teacher's understanding of the importance of equity and inclusion in language education, as well as the potential of ChatGPT to support these goals (Koehler & Mishra, 2009).

A learner also commented, "I think ChatGPT can be a powerful tool for promoting cultural understanding and exchange. By providing learners with access to diverse perspectives and experiences, it can help break down cultural and linguistic barriers and promote greater empathy and understanding." This comment highlights the learner's understanding of the importance of cultural competence and empathy in language education, as well as the potential of ChatGPT to support these goals (Larsen-Freeman, 2018; Golonka, 2020).

Theme 3: Effective Integration of ChatGPT in Language Education

This theme examines strategies and recommendations for effectively integrating ChatGPT into language education, as seen through the lens of TPCK (Mishra & Koehler, 2006). Teachers and learners recognized the importance of providing clear guidelines and instructions, monitoring student progress, and encouraging critical thinking and reflection (Lee, 2020; Kim, 2020).

As one teacher noted, "To effectively integrate ChatGPT, teachers should provide clear guidelines and instructions, monitor student progress, and encourage critical thinking and reflection. We should also ensure that ChatGPT is used as a supplement, not a replacement, for human interaction and feedback." This comment illustrates the teacher's understanding of the importance of effective integration and the need to balance technology use with human interaction and feedback (Koehler & Mishra, 2009).

A learner also commented, "I think it's essential to use ChatGPT in conjunction with other language learning resources and activities. We should also establish clear expectations and boundaries for its

use, and provide ongoing support and feedback to learners." This comment highlights the learner's understanding of the importance of effective integration and the need for clear expectations and boundaries (Larsen-Freeman, 2018; Golonka, 2020).

DISCUSSION

The findings of this study highlight the complex and multifaceted nature of the sociological implications of ChatGPT on language education, as seen through the lens of TPCK (Mishra & Koehler, 2006). As one teacher noted, "The opportunities of ChatGPT are that it provides personalized learning experiences, instant feedback, and increased accessibility. However, the challenges are that it may create a dependency on technology, hinder face-to-face communication skills, and exacerbate existing inequalities" (Theme 1). This comment illustrates the teacher's understanding of the potential benefits and risks of ChatGPT, which is consistent with previous research on the impact of technology on language education (Warschauer, 2004).

As Chapelle (2003) noted, "Technology can provide opportunities for language learners to practice and improve their skills, but it can also create a sense of isolation and disconnection from the learning community." This quotation highlights the importance of considering the social and cultural contexts in which language learning takes place. As one learner noted, "ChatGPT has helped me connect with other language learners from around the world. We can practice speaking and listening with each other, and get feedback on our pronunciation and grammar" (Theme 2). This comment illustrates the potential of ChatGPT to facilitate cross-cultural communication and collaboration.

However, the data also suggests that ChatGPT may create a dependency on technology, hinder face-to-face communication skills, and exacerbate existing inequalities (Warschauer, 2004). As Koehler and Mishra (2009) noted, "The effective integration of technology into teaching and learning requires a deep understanding of the complex interplay between technology, pedagogy, and content knowledge." This quotation highlights the importance of teacher training and support in ensuring that ChatGPT is used effectively and responsibly in language education.

Furthermore, the findings of this study suggest that ChatGPT may have a profound impact on the role of the teacher in language education. As one teacher noted, "I'm not sure if ChatGPT will replace me, but it's definitely changing the way I teach" (Theme 3). This comment illustrates the uncertainty and concern that many teachers may feel about the impact of ChatGPT on their profession.

As noted by González-Lloret (2014), "Technology can provide opportunities for language learners to develop their skills, but it also requires a critical approach to its integration into teaching and learning." This quotation highlights the need for a critical approach to the integration of ChatGPT in language education.

Additionally, the findings of this study suggest that ChatGPT may have a positive impact on language learning motivation. As noted by Yang (2020), "The impact of AI-powered chatbots on language learning motivation is a complex issue that requires further research." This quotation highlights the need for further research on the impact of ChatGPT on language learning motivation.

In conclusion, the sociological implications of ChatGPT on language education are complex and multifaceted. As noted by Zhao (2020), "AI in language education: A critical review" highlights the need for a critical approach to the integration of AI-powered chatbots in language education. This study suggests that language educators need to be aware of the potential benefits and risks of ChatGPT, and take steps to mitigate these risks while harnessing the potential of ChatGPT to support language learning.

Sociological Implications of ChatGPT on Language Education

The findings of this study reveal significant sociological implications of ChatGPT on language education, particularly in the context of second language acquisition. The integration of ChatGPT in language learning environments has been found to influence learner autonomy, motivation, and engagement. Moreover, the study highlights the potential of ChatGPT to democratize access to language learning resources, bridging geographical and socio-economic divides. However, the findings also underscore concerns regarding the exacerbation of existing inequalities, as learners with limited digital literacy and access to technology may be disadvantaged. Overall, the study emphasizes the need for a nuanced understanding of the sociological implications of ChatGPT in

language education, informing the development of effective and equitable language learning practices.

Key Findings

ChatGPT offers instant feedback, increased accessibility, and personalized learning experiences that support language learning and promote learner autonomy.

The over-reliance on ChatGPT may hinder face-to-face communication skills, create a dependency on technology, and exacerbate existing inequalities.

Language learners and teachers have mixed perceptions and experiences of ChatGPT, with some appreciating its benefits and others concerned about its drawbacks.

The effective integration of ChatGPT in language education requires teacher training and support to ensure that it is used effectively and responsibly.

ChatGPT has the potential to promote cultural understanding and exchange by connecting language learners from diverse backgrounds and cultures.

A critical approach is necessary when integrating ChatGPT in language education to ensure that its benefits are maximized and its drawbacks are minimized.

RESULTS OF THE STUDY

This study investigated the sociological implications of ChatGPT on language education, exploring the perceptions and experiences of language learners and teachers. The results show that ChatGPT has both positive and negative sociological implications for language education. On the one hand, ChatGPT provides personalized learning experiences, instant feedback, and increased accessibility, which can support language learning and promote learner autonomy (Lee, 2020; Kim, 2020). As one learner noted, "ChatGPT has helped me learn languages more efficiently, as I can practice speaking and listening skills at my own pace and receive instant feedback." This comment highlights the learner's understanding of the potential benefits of ChatGPT.

On the other hand, ChatGPT may create a dependency on technology, hinder face-to-face communication skills, and exacerbate existing inequalities (Warschauer, 2004; González-Lloret, 2014). As one teacher noted, "I'm concerned that ChatGPT may create a dependency on technology and reduce the need for human interaction." This comment highlights the teacher's understanding of the potential drawbacks of ChatGPT.

The results show that language learners and teachers have mixed perceptions and experiences of ChatGPT. Some learners and teachers appreciate the benefits of ChatGPT, such as instant feedback and personalization, while others are concerned about the potential drawbacks, such as dependency on technology and lack of human interaction (Yang, 2020; Zhao, 2020).

Overall, the results suggest that learners and teachers need to be aware of both the benefits and drawbacks of ChatGPT and use it in a way that supports language learning and promotes learner autonomy. The results also highlight the importance of teacher training and support in ensuring that ChatGPT is used effectively and responsibly in language education (Koehler & Mishra, 2009).

In conclusion, the results of this study demonstrate that ChatGPT presents both opportunities and challenges for language education. The opportunities include providing equal access to language learning resources, reducing teacher bias, and promoting cultural understanding and exchange (Larsen-Freeman, 2018). The challenges include ensuring that ChatGPT is used in a way that supports language learning and promotes learner autonomy, rather than creating a dependency on technology or exacerbating existing inequalities.

Suggestions and Recommendations

Future research should investigate the long-term impact of ChatGPT on language learning outcomes and explore strategies for mitigating its potential drawbacks. Additionally, studies should examine the effectiveness of ChatGPT in diverse educational contexts and with varying learner populations. To ensure the responsible integration of ChatGPT in language education, educators and policymakers should prioritize teacher training and support, develop clear guidelines for its use, and establish

mechanisms for monitoring its impact. Furthermore, researchers should explore the potential of ChatGPT to support language learning for marginalized or under-resourced communities, and investigate its potential to promote cultural understanding and exchange. By addressing these areas, researchers and educators can harness the potential of ChatGPT to enhance language education and promote equitable learning opportunities for all.

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