Spanish Language Teaching Enabled by ChatGPT: Applications, Challenges and Strategies

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Abstract: This study explores the application and potential of conversational artificial intelligence ChatGPT in Spanish teaching, including assisted teaching, interactive learning, personalized learning, cross-cultural experience and intelligent assessment. Through analysis, this paper points out that ChatGPT can significantly improve the efficiency and quality of Spanish learning, provide learners with a coherent, natural and targeted language practice environment, while at the same time, overcoming geographical and time constraints, as well as enhancing the accessibility and flexibility of teaching. However, with the widespread use of ChatGPT, challenges such as data privacy, content accuracy, cultural sensitivity, learning dependency, and academic integrity rise. Based on these challenges, this paper proposes a series of solution strategies to ensure the effectiveness and impartiality of ChatGPT in Spanish language teaching.

Keywords: ChatGPT; Spanish learning; Personalized learning; Artificial intelligence applications; Educational strategies

1. Introduction

As one of the official languages of the United Nations and the second most spoken mother tongue in the world, Spanish plays an important role and influence in the fields of economy and culture. With the continuous deepening of the Belt and Road Initiative, China has increasingly close exchanges with Spain and Latin America in various fields. Latin America is becoming the second largest region for China's overseas investment, as the concept of the land and New Silk Road with Eurasia at its core has been further expanded [1]. The Spanish language has gradually become an indispensable tool in China's diplomatic and cultural exchanges. However, compared with other foreign languages such as English and Japanese, which are highly popular and have a complete teaching system, the current situation of Spanish teaching in China is far from matching its important international status, which also leads to the shortage of Spanish-speaking talents in many fields. In addition, the current teaching mode of Spanish in China is also relatively traditional, which is still dominated by imitation and mechanical practice, immersive teaching method, task-based teaching method, flipped classrooms, etc., which lacks efficient targeted training and personalized training [2]. Therefore, ways of letting more language

learners learn Spanish well and carry out Spanish teaching in a more scientific and targeted way are very worthy of discussion.

At present, artificial intelligence (AI) technology has found its important role in the field of language learning and has been integrated into various practices of college foreign language teaching. ChatGPT, a conversational artificial intelligence released by OpenAI, is a notable example of such technology. By analyzing large amounts of text data, AI technology can learn language patterns and relationships to generate human-like text feedback [3]. It can simulate real conversations, which has a positive impact on students' language skills.

As an advanced AI technology, ChatGPT can provide Spanish learners with coherent, natural and specific language exercises, thus significantly improving the efficiency and quality of Spanish learning. ChatGPT not only simulates a real communication environment to improve understanding and expression skills but can also be customized to help guide and solve specific problems in learning. In addition, the application of ChatGPT can overcome geographical and time constraints, allowing learners to learn anytime, anywhere, which is of great significance for improving the accessibility and flexibility of Spanish teaching [4]. However, with the application of ChatGPT in Spanish teaching, problems such as data privacy, content accuracy, cultural sensitivity, learning dependence, academic integrity, etc. have emerged, which requires educators to adopt effective coping strategies to ensure the effectiveness and impartiality of using ChatGPT in Spanish teaching. Therefore, in-depth research on the application of ChatGPT in Spanish teaching and the challenges and solutions brought by ChatGPT are of great practical and theoretical significance for optimizing teaching methods, improving teaching quality and promoting educational equity.

The purpose of this study is to deeply explore the specific application of ChatGPT in Spanish teaching. By analyzing ChatGPT's ability to improve teaching efficiency, promote student interaction, and offer personalized learning, the research question of how to effectively use conversational artificial intelligence technology to promote Spanish learning is answered. At the same time, it will also focus on the challenges that may be encountered during the introduction of this technology, and propose corresponding solutions.

2. The use of ChatGPT in Spanish language teaching

As a powerful conversational artificial intelligence tool, ChatGPT's diversified application in Spanish teaching has greatly enriched the teaching content and methods. This not only enhances personalized, interactive and cross-cultural learning experiences but also enhances classroom flexibility and teaching efficiency.

2.1. Assisted teaching

In China, the number of traditional Spanish teaching materials is small, the content is relatively fixed, and the update speed is slow, which cannot keep pace with the development of this era. The original resource-based course platform which mainly provides materials, exercises, courseware and materials cannot meet the needs of learners [5]. The powerful capability of ChatGPT allows teachers to generate rich teaching content and materials according to their needs, including highly customized teaching plans, comprehensive grammar exercises, rich reading comprehension materials, etc. For beginners, ChatGPT can combine current hot topics to generate introductory learning materials covering basic grammar and common vocabulary that students are interested in. For advanced learners, more complex literary readings and domain-specific language exercises can be provided. This ability greatly frees the teacher to have more time and energy to focus on the students and the teaching itself [6].

For example, in the teaching process of the subject "Comprehensive Spanish" in our school, the teacher combined the important key points of this course and used ChatGPT to quickly generate a series of teaching

materials integrating different scenarios and topics, including interesting interactive grammar games, reading materials with cultural background, and sentences examples containing hot social topics. In this way, students can master the core key points of Spanish by learning what they are interested in. This not only improves students' interest in learning but also significantly improves their language mastery efficiency. Teachers and students both reported that ChatGPT adds flexibility and variety to the curriculum, making the learning process more personalized and efficient.

2.2. Interactive learning

In the process of learning Spanish, frequent communication and practice are essential to improve the efficiency of learning. In traditional Spanish teaching, it is difficult to make every student actively participate in the teacher-student interaction within the limited class time, and the teacher cannot guide each group of students in an interactive and timely manner. ChatGPT, by creating an interactive conversation environment, enables students to practice conversations with them at any time, simulates real communication scenarios, and helps students correct mistakes in the practice process. This kind of interaction can not only enhance students' practical language ability but also effectively improve students' learning motivation and engagement. With this, the problem of students having insufficient time for language acquisition in class and after class can be solved [7]. Through customized dialogues and simulated scenarios, ChatGPT can also help students master the specific usage and cultural context of Spanish, thereby improving their language skills more comprehensively.

For example, Microsoft Edge, Google Chrome and other browsers come with application extensions such as "Voice control for ChatGPT", which enables learners to have real-time voice conversations with ChatGPT. On the one hand, the written interaction practice is further extended to the field of oral training. On the other hand, it also enables introverted students who are reluctant to speak in class to have their own private oral training space, which can be carried out anytime and anywhere.

2.3 Personalized learning

In recent years, the scale of primary and secondary school Spanish courses and Spanish training for social personnel has been expanding, which makes the diversified student groups require Spanish education to provide differentiated curriculum concepts to achieve individualized teaching [8]. This is difficult to fully achieve under the traditional Spanish teaching model. While a significant advantage of ChatGPT is the ability to provide a personalized learning experience, ChatGPT makes sure that each learner can learn at their own pace and interests by analyzing the learner's learning preferences, ability level and progress by customizing personalized learning plans and materials.

For example, a learner can write a prompt to ChatGPT: "I would like to learn Spanish literature on my own, through some interesting articles, can you provide me with a study plan?"

ChatGPT will reply with the following feedback:

"Reading articles is a very good way to learn Spanish literature, especially if you have an interest in literature. Here is an example of a personalized study plan based on your interests and Spanish learning goals:

(1) Phase 1: Foundation building (1-2 months)

    (a) Goals: Build a basic vocabulary and understand simple sentence structures.

    (b) Recommended resources: Use apps like Duolingo, Babbel and others to learn basic vocabulary and grammar. Read short Spanish articles or children's stories (those on the "Cuentos Infantiles Cortos" website).

    (c) Activities: Spend at least 30 minutes a day studying basic vocabulary and grammar rules. Choose 2-3

short articles or stories each week and try to summarize the main points of the story.

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(4) Phase 4: Literary deep exploration (7 months and above)

    (a) Goal: Complete immersion in Spanish literature to improve critical thinking and deep analytical skills.

    (b) Recommended resources: Read some literary reviews (those found on the "Revista de Libros" website). Consider reading some Spanish literature history or literary theory books to get a fuller understanding of the literary context."

Then, through further interaction, ChatGPT can also provide students with more detailed and personalized learning services. This way of learning not only helps to improve learning efficiency but also greatly enhances learners' confidence and motivation.

2.4. Cross-cultural learning

As a widely used global language, Spanish has rich cultural connotations and language usage differences in different regions, especially between the American countries and the Spanish mainland. Such differences bring additional challenges to the teaching of Spanish but also provide a unique learning opportunity by understanding the socio-cultural background of the target language. Learners can better understand the meaning, expressions and usage scenarios of the language, stimulate their interest in learning and improve the effect of language learning [9].

The application of ChatGPT in Spanish teaching can effectively meet this cross-cultural learning demand. First of all, ChatGPT can generate corresponding learning materials and dialogue examples according to the cultural background and language habits of different regions, to help students understand and master the language characteristics of different regions. Secondly, by simulating communication with virtual characters from different cultural backgrounds, ChatGPT can enhance students' intercultural communication skills, allowing students to not only learn Spanish, but also gain an in-depth understanding of the multi-culture related to it.

For example, learners can ask ChatGPT to list how a certain Chinese word is expressed in different Spanish-speaking countries, the different meanings of the same gesture in different Spanish-speaking countries, even what kind of compliments are preferred by people in different Spanish-speaking countries, and what words should never be said in front of a Spanish-speaking person. This kind of cross-cultural learning experience is difficult for traditional teaching and most Spanish teachers to provide in a timely and accurate way.

2.5 Intelligent assessment

Traditional teaching evaluation methods often rely on paper-and-pencil tests and teachers' subjective evaluation, which not only occupies a lot of teaching time but also may lead to subjective evaluation results due to the inconsistency of evaluation standards. Compared with this, the intelligent teaching evaluation enabled by ChatGPT can provide a more diversified and process-based teaching evaluation in Spanish teaching [10].

For example, ChatGPT can track student progress and performance in real-time and continuously, while at the same time, providing targeted feedback and recommendations through data analysis. This instant feedback is very helpful for students to adjust their learning strategies on time. Secondly, using Natural Language Processing technology, ChatGPT can objectively assess students' language useability, including multiple dimensions such as grammar, vocabulary and expression ability. Compared with traditional assessments, this method is more comprehensive and objective. Finally, intelligent assessment can generate personalized

assessment reports for each student. These reports can not only reflect students' learning outcomes but also point out students' shortcomings and offer suggestions for improvement, thus promoting personalized learning.

3. Challenges and solutions

ChatGPT not only brings convenience and efficiency to foreign language teaching but also brings many challenges and problems. Foreign language educators should be aware of the challenges brought by language models to foreign language teaching and pay special attention to them.

3.1 Data privacy

When using ChatGPT for teaching purposes, the data provided by students and teachers may include sensitive personal information. If this data is not properly protected, it may expose you to privacy risks.

Suggested solutions:

(1) Strengthen data security measures, such as adopting end-to-end encryption technology to ensure the security of data transmission and storage processes.

(2) Conduct regular privacy compliance reviews of educational institutions and technology providers to ensure compliance with relevant data protection regulations.

(3) Increase data privacy awareness among teachers and students by providing clear privacy statements explaining how data is collected, used and protected.

3.2 Content accuracy

Content generated by ChatGPT may have accuracy issues, especially when involving specific cultural details or complex language structures. The training effect of the generative language model depends on the quantity and quality of the corpus used, and it can be seen from the GPT-3.5 training dataset that 92.099% of the corpus is used in English, while only 0.789% is used in Spanish, which results in a significant difference in the ability of the model to generate text in different languages [11].

Suggested solutions:

(1) Implement an expert review mechanism to ensure the accuracy and appropriateness of content generated by ChatGPT.

(2) Utilize a large number of high-quality, verified corpora to train and adjust the model to improve the accuracy of its output.

(3) Encourage students to think critically, help and guide students to identify the correctness and appropriateness of the text generated by ChatGPT by further checking and confirming the doubtful content [12].

3.3 Cultural sensitivity

When generating content, ChatGPT may sometimes fail to adequately take into account the cultural differences and details associated with a particular region or group. For example, art, historical events, religious beliefs, and social norms are represented and interpreted differently in different cultures. If ChatGPT fails to properly understand and address these nuances, it may inadvertently offend certain cultural mores or values by providing content.

Suggested solutions:

(1) Increase multicultural input: By providing diverse and extensive cultural data to the model, the model can learn and understand the differences and details of different cultures. This includes not only

linguistic differences, but also history, customs, beliefs, and so on.

(2) Cultural filtering mechanisms: Develop specific mechanisms for identifying and filtering content that may be culturally sensitive. When processing user queries, ChatGPT can adjust the answers and content according to the user's cultural background and preferences.

(3) Human supervision and feedback: Even the most advanced AI can make mistakes. Therefore, it is essential to conduct regular human reviews and gather user feedback. Based on this information, the model can be constantly adjusted and optimized to be more accurate and sensitive when dealing with culturally relevant content.

3.4 Learning dependencies

When Spanish learners rely overly on AI tools such as ChatGPT, they may lose sight of the advantages and importance of traditional learning methods in terms of human interaction, analytical and problem-solving skills, etc. This over-reliance can lead to limited development of student's abilities in areas such as communication skills and solving complex problems [13].

Suggested solutions:

(1) Position ChatGPT as a complementary teaching tool rather than a primary tool for language learning. Instead of allowing ChatGPT to dominate the entire learning process, different teaching activities can be designed to integrate CHATGPT into teaching.

(2) Teachers emphasize critical thinking and independent problem-solving in the classroom and use ChatGPT to promote rather than replace the development of these skills.

(3) Encourage interactive learning among students and reduce reliance on chatbots by organizing workshops and study groups.

3.5 Academic integrity

As AI tools such as ChatGPT become more accessible and usable, some students may utilize the query results, papers or reports generated by these tools to submit directly as their academic work without proper citation or acknowledgment that they are partially or wholly derived from AI. This results in the outcomes of study and research lacking in terms of authenticity and accuracy.

Suggested solutions:

(1) Establish an ethical review mechanism with the use of ChatGPT, provide timely and effective integrity supervision for its application and clearly define the reasonable scope and principles for the use of AI tools such as ChatGPT [14].

(2) Develop and adopt detection tools to assist in identifying possible plagiarism and improper citations in students' assignments.

(3) Strengthen academic integrity education, encourage students to "Learn to stand on the shoulders of ChatGPT to learn", actively explore and practice, pay attention to the learning process and original thinking, rather than just focus on the result [15].

4. Epilogue

According to the analysis and discussion, ChatGPT, as a conversational artificial intelligence technology, has great potential and application value in Spanish teaching. From assisted instruction, interactive learning, personalized learning, cross-cultural learning, to intelligent assessment, ChatGPT has begun to demonstrate its powerful ability to improve the efficiency and quality of learning. At the same time, by breaking the space and

time constraints of traditional teaching, ChatGPT can achieve a high degree of accessibility and flexibility in learning. However, as this technology becomes more widely used in education, educators must also confront and address the challenges it presents in terms of data privacy, content accuracy, cultural sensitivity, learning dependency, and academic integrity. The strategies proposed in this study, including strengthening data security measures, implementing expert review mechanisms, enhancing multicultural input, and setting appropriate user guidelines, are designed to ensure that ChatGPT can play its proper role in assisting Spanish language teaching while safeguarding the effectiveness and impartiality of teaching activities.

Looking forward to the future, with the continuous progress of AI technology and the deepening of teaching practice, the application of ChatGPT and other AI tools in language teaching will be richer and more refined. Through further research and practice, we look forward to finding more effective strategies to overcome challenges and maximize the potential of these advanced technologies, thereby revolutionizing the learning and teaching of Spanish and beyond.

Disclosure statement

The authors declare no conflict of interest.

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