

A Study on the Path of Personalized Oral English Learning Powered by Large Language Models

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Abstract:

Personalized learning paths refer to tailor-made learning plans and contents based on the individual characteristics such as learning progress, interests and hobbies, and knowledge levels, aiming to enhance the pertinence and effectiveness of learning and meet the needs of different students. This study discusses the application of Chinese large language model (LLM) in providing support for oral English learning from the perspective of Chinese learners. The performance of Doubao is observed and analyzed in five dimensions including accuracy, vocabulary, grammar, fluency, and emotion. The results show that Doubao has had a positive effect on students' lexical complexity, grammar, fluency and emotion, but has little effect on accuracy. Therefore, this study will provide an effective path for LLM-driven learning, which promotes the oral ability of Chinese learners.

Keywords:

Large Language Model, Oral Language Learning, Personalized Path

1. Introduction

Rapid advancements of large language models (LLMs) have enabled the processing, understanding, and generation of human-like text, with increasing integration into systems that touch our educational sphere, to speed up the transformation of education and the innovation of teaching methods. It is known that the base of artificial intelligence are large language models. Large language models represent a significant advancement in the field of AI. These models can be used to create educational content, improve student engagement and interaction, and personalize learning experiences. The integration of large language models, such as those in the Generative Pre-trained Transformers series, into education has the potential to transform learning experiences for students and elevate their knowledge, skills, and competence.

In recent years, LLMs such as ChatGPT, Doubao, Kimi, Wenxinyiyan, and Deepseek are rapidly transforming language education by enhancing tasks like information retrieval, coding, and writing refinement, which are critical to the problem-solving and cross-cultural focus of language disciplines. By demonstrating

their latent and advanced capabilities, LLMs in education require teachers and learners to develop sets of competencies and literacies necessary to both understand the technology as well as their limitations. Also, the cultivation of foreign language talent needs to be upgraded urgently, for most traditional classes adopt a “one-size-fits-all” teaching method, making it difficult to take into account the individual differences of students. Combined with artificial intelligence, a more personalized language learning can be provided based on the learning progress, interests and personality of language learners. Through intelligent terminals, this new type of intelligent technology enables resources of foreign language accessible throughout the entire process of foreign language education. It is believe that, if handled sensibly, these changes can offer insights and opportunities in education.

The use of LLMs in academia is a hot topic in the education field. At present, however, the educational application of LLMs is still in its infancy. Although the discussion degree is high and the potential is huge, the actual application value has not yet been fully exerted. Among numerous researches, LLMs for writing has been the spotlight in academic fields. Additionally, how to utilize artificial intelligence to put forward personalized reading materials is a topic of great concern. However, there are still shortcomings in researches on listening and speaking learning driven by LLMs, and there are relatively few studies on this topic.

When it comes to the spoken English, Chinese EFL (English as a foreign language) learners struggle to learn spoken English due to the limited learning environment in China. Students cannot express themselves proficiently in English and also lack enthusiasm in oral English learning. Some Chinese EFL learners, due to their inferiority complex, often avoid interacting with others for fear of being laughed at if they make mistakes. Few students take the initiative to practice oral English, as their English learning at school is mainly for exams. However, the teaching model advocated by the new curriculum reform requires a shift from “teacher-centered” to “student-centered”. To a certain extent, the application of artificial intelligence can not only make up for the shortcomings of the traditional teaching, but also meet the personalized learning needs of students. So an increasingly number of researchers call on foreign language learners to actively embrace AI technology, integrating it organically into the existing learning to produce high-quality outcomes.

Therefore, from the perspective of Chinese students, this study takes a Chinese large language model as an example and combines specific cases related to oral English learning, exploring innovative paths for personalized learning and providing references for the use of digital models in personalized teaching and learning of foreign languages in China.

2. Personalized Paths Empowered by Doubao

This research studies Doubao, a representative large language model in China, by analyzing the performance of this model in the five dimensions of English oral learning, namely accuracy, vocabulary, grammar, fluency and emotion. Based on the results, a path for the effective empowerment of oral learning by large language models is provided. It not only helps students improve learning efficiency, but also cultivates the ability of autonomous learning.

Doubao has a mode of voice recognition that correct the oral English mistakes of user in the interaction with the built-in AI characters. Also, it has the function of creating AI assistants for individual users. Users can set the tasks of communication,

the style of voice and speaking speed of the virtual characters. In this study, the researcher refers to the themes of the IELTS speaking test, initiates conversations with the built-in character, simulates incorrect contents, records the error corrections and suggestions provided by the AI, and transcribes the conversation into text for preservation.

The language understanding of LLMs has not yet reached the level of humans, so users need to provide specific and clear prompts. Here, the researcher has sorted out and integrated detailed information and entered the corresponding instructions. The following information is the specific contents of the prompts:

The speaker is a Chinese college student who is about to prepare for IELTS. Currently, the speaking score of speaker is between 6 and 6.5, and the speaker need to score 7.5 in the IELTS speaking test. Now, please be a native English speaker and the IELTS examiner for practice. Be highly proficient in marking and correcting the oral English. Please pay attention to the accuracy, vocabulary, grammar, fluency and emotion of speaker. The process of practice is as follows:

Before each practice, ask a question about a certain topic in IELTS Part1-3 and three extended questions in English. After accepting the answer of speaker, provide with three items of feedback. The feedback should include: ① Score: The assessment based on the requirements of the IELTS speaking test; ② Errors: the mistakes of pronunciation, grammar, vocabulary, fluency etc.; ③ Polishing: Optimize some vocabulary and expressions in line with the requirements of IELTS and English thinking.

2.1. Accuracy

The accuracy of spoken English is focused on pronunciation. Pronunciation accuracy refers to the speaker's ability to voice in a clear and natural way that conform to the phonetic rules of English, including the correctness of phonemes (individual sounds), stress, intonation, rhythm and liaison. It involves not only the pronunciation of single words, but also the phonetic features in sentence. With the large language models, the improvement of pronunciation accuracy helps to enhance the comprehensibility of the content for the listeners in communication, increase the communication efficiency, and boost learners' confidence and fluency in expression. Especially in the international workplace or academic environment, clear pronunciation is conducive to establishing a professional image. Here, the shopping dialogue in IELTS is taken as an example to examine the role of this model in the accuracy of pronunciation learning.

The results show that Doubao has no significant effect on pronunciation recognition and error correction. After receiving prompt, Doubao can assume the role of an IELTS speaking companion well, identifying phonemes with obvious errors effectively. When speaker voices the /nə'sesəti/ in a wrong way, Doubao provides corresponding phonetic symbols and shows the correct pronunciation of words. However, it cannot correct phonemes with less obvious errors and cannot guide users to pronounce correctly. In addition, it cannot provide detailed information for intonation and rhythm, nor can it assist users in learning pronunciation techniques such as pitch, weak pronunciation, loss of burst, assimilation.

Speech recognition and assessment technology are at the heart of language learning, and speech recognition technology is the foundation. Because of the complex changes in speech pronunciation, a large amount of speech signal data, the high dimension of speech characteristic parameters, and a large amount of speech recognition and evaluation computation, the large volume of speech signal processing requires higher

requirements of hardware and software resources and algorithms. So Doubao perform poorly in improving the accuracy of pronunciation.

2.2. Vocabulary

The vocabulary of oral English require the richness of different words used by speakers in expression and avoiding excessive repetition of the same words or phrases. It is reflected in replacement with synonym, part-of-speech change, phrase diversity. Vocabulary diversity helps improve the accuracy of expression, since subtle differences can be conveyed more accurately from different words. With rich vocabulary, the expressions of speaker are more infectious in speeches, interviews or debates. The paper takes the team-related topics in IELTS as an example to explore the influence of model on helping users to improve English vocabulary.

The results show that Doubao has a significant promoting effect on lexical diversity. This model polishes the content based on the oral output of user. For example, the user says "*I was the helper of the leader, because I'm not good at team management.*" Doubao optimizes this sentence into "*I took on the role of assistant because I'm not adept at team management.*" In addition, this model provides other similar expressions like "*serve as*" "*assume the role of*". When the user talks about team conflicts, Doubao transfers "*So, what's the most important qualities for a team member to have in a teamwork setting? I think the teamwork spirit is the most important quality. Without this kind of spirit, we won't unite together to accomplish some task. And we lack of the belief to control our mind. Under this circumstance, we can achieve our personal assignment very efficiently.*" into a relatively advanced and more idiomatic expression "*Regarding the most important qualities for a team member in a teamwork environment, I believe the team spirit is of utmost importance. Without this spirit, we won't be able to unite and work together to accomplish tasks. Moreover, we'll lack the conviction to focus our efforts.*" LLM can provide a series of corresponding phrases, along with English definitions and understandings. Accordingly, this model can become an intelligent companion in the dimension of vocabulary learning.

2.3. Grammar

The grammatical dimension of spoken English means the speaker's ability to use English grammatical rules appropriately in expression, including sentence structure (subject-predicate agreement, word order, etc.); tenses (the past tense, present tense, future tense, etc.); word form (verb conjugation, singular and plural forms of nouns, and comparative degrees of adjectives); articles & prepositions; clauses and connectors. The paper takes campus life in the topics of IELTS as an example to discuss the influence of this model on grammatical application of user.

Doubao will not only identify errors but will directly correct grammatical errors as well. The model stands out in grammar and has a very acute ability to correct errors. It can accurately identify mistakes in tenses, syntactic structures, etc., and provide reasons and suggestions to help users deepen their impression of language rules. For example, when the user mentions "*As a postgraduate student, I think that having a healthy body is more important than study. Without the health, one is not able to reach his goals in academic life....*", Doubao replies "*Health is uncountable noun in this context and doesn't need the.*" Overall, this model points out grammatical errors correctly, and the solution is more multiple.

2.4. Fluency

Fluency refers to the ability of a speaker to express themselves in oral English naturally and coherently. It is mainly reflected in the following aspects: Speech Rate (an appropriate speed); Pauses (a brief pause during breaks or thinking, rather than frequent stuttering); coherence (the clear logic between sentences and the use of conjunctions); atomicity (organize language freely without overthinking grammar or vocabulary). Fluency can make it easier for the listener to understand, improve communicative efficiency, and reduce misunderstandings or repetitive inquiries. People who speak fluently are usually more confident and perform better in social interactions, the workplace or exams. Meanwhile, language fluency is related to the speed of thinking. People who express themselves fluently can organize their personal ideas more quickly and present them coherently. Here, the paper takes the future subjects in the IELTS as an example to analyze the connection between this model and the fluency of user.

The results show that Doubao pays attention to the content and speaking speed of the user. Doubao can provide feedback timely—*“There are several hesitations and repetitions such as ‘I.... I’m quite interesting in science. The sentences are a bit disjointed in places. For example, the transition from talking about wanting to learn science to the reasons for learning science seems rather abrupt. When discussing challenges, the connection between artificial technology and the subject of learning isn’t clearly established, which also affects the overall fluency.”* So this model focuses on pauses and repetitions in oral output, and pays attention to the coherence of thinking and the logic of the content.

2.5. Emotion

Emotion is an advanced skill in spoken English, which can make the expression more vivid and infectious. The dimension refers to the ability of a speaker to convey attitudes through language, intonation, body language and other means. This is reflected in word choice of words with emotional connotations (e.x., “thrilled” is stronger than “happy”); intonation (emotions such as excitement, surprise and anger are expressed through rising, falling, stress, etc.); pacing & rhythm (speak faster to show excitement while slower to show seriousness or sadness); body language (emotion in combination with expressions and gestures is shown). People who master a high degree of oral emotion can enhance engagement in communication, attracting the audience and avoid monotony. Meanwhile, they have clarity of intent, and their emotional expressions can eliminate ambiguities with satire, humor or sincerity. In addition, to enhance social and professional impact, enthusiastic expression during an English interview is more impressive than mechanically reciting answers. What’s more, appropriate emotional expression in different cultures helps to promote cross-cultural communication. In order to understand the emotional dimension of Doubao in training expression of user, the paper takes the topic related to childhood memories in IELTS as an example to discuss whether this MML helps users to promote the emotion of expression.

The results show that Doubao can indicate from a macro perspective that user’s descriptions of memories are rather matter-of-fact and lack connections with specific and vivid events to reflect nostalgia for the past. The model points out that when the user talks about hiking and picnics in the countryside, the user does not describe the beauty of the scenery, the excitement discovered during hiking, or the warmth and

laughter during picnics. And LLM identifies that an opportunity to express deep emotions is missed in the sentence “*This is experiences were very special*”, and advises the user gives the reason why these experiences were special, and reminds the user that the emotion of recalling childhood that people might expect memories has not been conveyed in depth.

Overall, Doubao can show a certain degree of language intelligence and emotional sensitivity by detecting all tone of the user, providing timely feedback in specific contexts and it leads learners to realize that language sensitivity and context awareness are needed in different situations. However, the dialogue of MML is relatively stiff and cannot adjust flexibly, lacking real-time learning behavior analysis to support emotional expression with pragmatic function.

3. Conclusions

Artificial Intelligence represented by LLMs is not only reshaping various industries with a profound impact on the economy and social structure, but providing new possibilities for educational system including personalized learning. Personalized foreign language education has long been a focal point of attention in the field, with continuous introduction of innovative measures. The advent of LLMs presents a novel opportunity for advancing personalized foreign language education.

In order to further explore the new form of personalized learning based on LLMs , this study discusses the paths and limitations of Doubao in personalized learning of English from the perspective of Chinese students. With five dimensions of oral language learning, it is found that MML perform poorly when dealing with pronunciation problems of users, and the recognition results of single phonemes are not accurate enough. When referring to lexical level, MML has strong capabilities and interactivity of semantic interpretation. It can assist users in accumulating expressions with the same or similar meanings, which is conducive to help user to improve vocabulary replacement. In the dimension of grammar, LLM performs most prominently, as it can detect tense errors, missing articles, and chaotic sentence structures. At the level of fluency, LLM can identify the problem of stuttering caused by the frequent use of interjections and focuses on the cultivation of the speech flow, but lacks suggestions for adjusting the rhythm. In the aspect of emotion, LLM can analyze speech emotions, assesses intonation changes, and points out the emotional expression that need to be strengthened. However, it lacks a deep emotional connection with users and cannot replace the position of human teachers in providing personalized emotional support.

Admittedly, the research only studies one language model. The number of large models supporting oral language learning is small, so the study lacks universality and unable to fully demonstrate the overall effect of large language models and oral language learning. Therefore, while the application of LLMs in English as a Foreign Language (EFL) learning contexts holds great promise, the factors influencing the acceptance and adoption of these tools by Chinese EFL learners in higher education, particularly in speaking, are remain underexplored. In the future, more researches can incorporate more large language models for evaluation and tracking their impact on oral language ability. In addition, the application of multi-modal content generated by large language models provides strong support for stimulating interest and initiative of students in oral practice. Moreover, the intelligent interaction reduces negative feelings of learners such as anxiety and timidity. AI-speaking assistants will influence

Chinese EFL students' foreign language enjoyment (FLE), foreign language anxiety (FLA), and willingness to communicate (WTC) in English, aligning with the principles of Positive Psychology. Therefore, there is still room for breakthroughs in empirical research on the connection between LLMs and emotions.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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