

FRIEND OR FOE: CONSIDERING WHAT PRONUNCIATION TEACHERS CAN DO THAT CHATGPT CANNOT

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Just as pronunciation teaching was emerging as a prominent focus in language education, the rapid advancement of artificial intelligence (AI) has raised questions about the potential redundancy of human educators. ChatGPT, a sophisticated large language model designed for conversational responses, has seen a surge in popularity. This tool can efficiently generate lesson plans and activities customized to students' levels and preferred topics, offering significant time-saving benefits and serving as a valuable teaching assistant. It also boasts capabilities in audio and speech recognition, which some learners are already utilizing for conversational practice. Despite these advancements, this paper argues for the unique and irreplaceable role of human teachers, particularly in identifying and addressing individual pronunciation challenges and fostering confidence through empathy and personal connection—qualities yet beyond the reach of AI.

INTRODUCTION

Pronunciation teaching has gained significant attention in the last two decades and is often at the forefront of language education discussions, as evidenced by Derwing's 2018 PSLLT talk in which she declared that pronunciation had gone from unappreciated Cinderella to “The Belle of the Ball” (p. 27). This period signaled a significant revival and heightened focus on pronunciation, highlighting its critical role in effective language learning and communication. However, the simultaneous explosive growth of AI technology, particularly in language applications, has introduced uncertainties among educators about their future roles.

One widely available generative AI model is ChatGPT 3.5. Developed by OpenAI and pre-trained on large amounts of text data, ChatGPT “can follow complex instructions in natural language and solve difficult problems” (OpenAI, 2023). A product of decades of research and development, ChatGPT represents a significant leap in generative AI models and “is the fastest-growing internet service ever, reaching 100 million users in January [2023], just two months after launch” (Heaven, 2023). It has also been the subject of scientific research in a variety of fields (Liu et al., 2023).

ChatGPT and its ability to understand and respond to complex instructions in natural language has made it a revolutionary tool in various domains, including language teaching. Its rapid adoption and growth, as noted by Heaven (2023), highlight its potential impact. Early adopters and language learners are increasingly integrating ChatGPT into their routines in innovative ways. For example, they utilize the voice-to-text feature available on iPhone apps, as well as the ChatGPT app for Android and iPhone, which provides conversational AI capabilities.

Additionally, Registre's (2023) work highlights the use of Chrome plugins like 'Voice Control for ChatGPT' and 'Talk-to-ChatGPT' to enhance interaction with the technology.

While ChatGPT 3.5 cannot correct users' pronunciation, it can offer feedback on grammar and vocabulary accuracy as well as answer related questions (D. Sams, personal communication, July 5, 2023; Walesiak, 2023). At the time of writing, ChatGPT is unable to design and deliver a pronunciation course with needed audio. Instead, the user is of central importance since prompting ChatGPT effectively plays a key role in the quality and type of output generated by the AI. Prompting must be specific and to the point, and if possible, examples must be provided for optimal results.

For instance, asking ChatGPT to “divide the following text into thought groups” will be unlikely to generate the output one requires. Instead, this more specific and refined prompt is more likely to yield the desired output:

“Please rewrite the following message with pauses in speech that may come naturally to an American speaker. An example is provided to help you out:

Dearest mother,/
Where do I begin to express/the depths of my love for you?/
From the moment I entered this world,/
you have been my guiding light,/...”

Figure 1 shows a flowchart of how users should interact with the tool. ‘Expert users’ can be teachers or language learners; the key point is to know how to interact with and prompt ChatGPT for effective output. The next section addresses how ChatGPT can be used in pronunciation instruction.

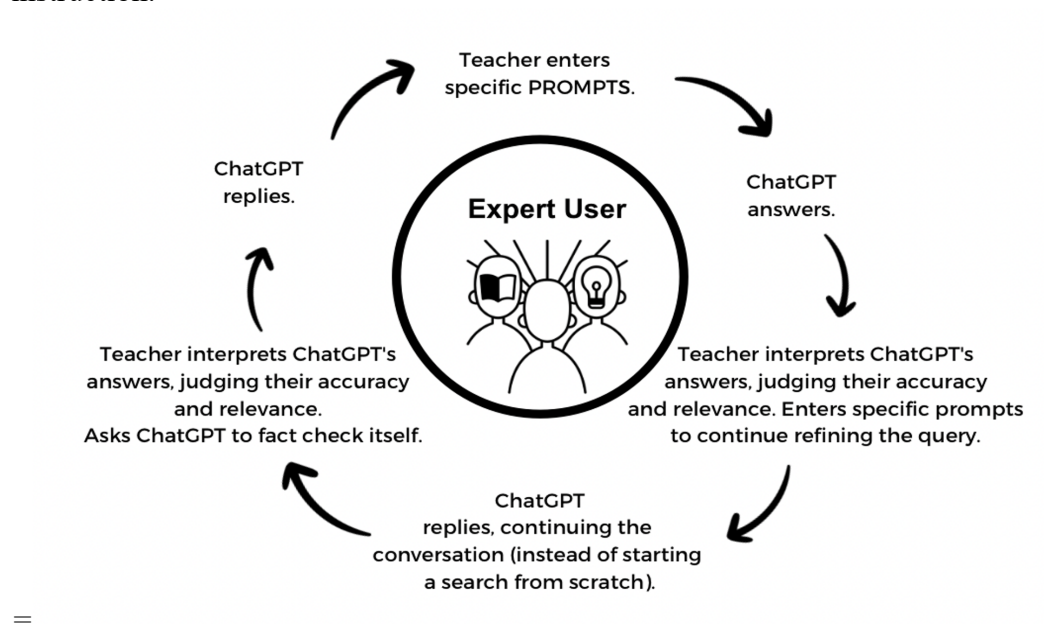


Figure 1. Lima and Wallace's Flowchart for ChatGPT User-As-Expert Interaction

CHATGPT'S USE IN PRONUNCIATION INSTRUCTION

In the realm of language education, particularly pronunciation instruction, ChatGPT emerges as a versatile tool, capable of significantly enhancing the teaching and learning experience. If utilized effectively, it can support a wide range of educational activities, from needs analyses and resource compilation to the creation of comprehensive lesson plans and interactive practice exercises. Following are some of our suggestions for how ChatGPT can be integrated into various aspects of pronunciation teaching.

While this paper focuses on ChatGPT 3.5, the free version, it is noteworthy that the Plus version (ChatGPT 4) has a more nuanced understanding and updated knowledge than 3.5 (April 2024 at the time of writing). ChatGPT 4 not only brings enhanced capabilities, including text-to-speech, image generation, and internet browsing, but also offers more accurate, contextually relevant responses and the potential for continuous learning and customization to meet specific user needs or applications.

Brainstorming Partner and Resource Provider

As a conversational, text-based AI, ChatGPT excels as a brainstorming partner for educators. Its ability to generate a plethora of materials makes it an invaluable resource in the planning phase of instruction. Teachers can engage with ChatGPT to develop lesson plans, activities, and exercises tailored to target specific pronunciation challenges. For instance, it can suggest tongue twisters, word lists, stories, and role-play scenarios that focus on particular sounds or intonation patterns. Furthermore, ChatGPT can recommend pre-2021 songs and provide lyrics for karaoke-style exercises, allowing for a fun and engaging way to practice pronunciation. The model's extensive database and conversational nature make it an ideal tool for creative lesson planning.

Content Creation and Customization

Transitioning from brainstorming to content creation, educators can collaborate with ChatGPT to produce custom exercises and materials. It can generate a variety of instructional aids, including handouts, dialogues, role-play cards, feedback rubrics, and assessments. These resources can be tailored to fit specific learner profiles, such as their Common European Framework of Reference (CEFR) level, interests, and the desired length and complexity of the lesson. For instance, for international teaching assistants (ITAs) taking a Microteaching Workshop Series, Wallace (this paper's second author) engineered a prompt for ITAs to create personalized rubrics for peer feedback on their micro-teaching demonstrations, which saved in-class time and allowed for a personalized focus on the ITAs' individual learning targets in classroom communication (See Figure 2). While ChatGPT is a powerful tool for content creation, educators should use their expertise to review and refine the materials, ensuring accuracy and appropriateness for the students' needs.

Here's how to create your rubric (feedback form):

1. Create an account for ChatGPT. The free version (3.5) is good. Here's the link: <https://chat.openai.com>
2. Revise this engineering prompt **with your own criteria** (see the **highlighted** portion), then put it in ChatGPT's chat.
 1. Please create a rubric in table format for micro-teaching demonstrations.
Column 1 will list the criteria as follows: Clear pronunciation, Effective speaking rate, Engaging the class with the Signal, Ask, Wait process, Effective question answering using the 4-step process.
Column 2 will be Needs Improvement and a description for each criterion.
Column 3 will be Satisfactory and a description for each criterion.
Column 4 will be Outstanding and a description for each criterion.
3. Read through the rubric it generates. Read down each column—do these evaluations make sense? Read across each row—do these make sense? You can dialogue with ChatGPT telling it to revise it, or you can copy and paste the rubric into a document and revise it yourself. Tips:
 1. The rubric should be simple: one clear criterion per row. It should be easy for your classmates to use when giving you feedback on your micro-teaching demonstrations.
 2. The rubric should be easy for you to use when evaluating yourself since you will be recording micro-teaching demonstrations.
4. Test the rubric by using it to evaluate the first 3 to 5 minutes of the sample video below.
5. You and I will evaluate your rubric when we talk individually (before your micro-teaching demonstration).

Figure 2. Wallace's Directions to ITAs for Using ChatGPT to Create a Rubric

Conversation Partner and Practice Facilitator

ChatGPT's capabilities extend beyond planning and content creation to providing direct interaction with learners. It can serve as a customizable conversation partner, offering learners a unique opportunity to practice pronunciation in a dynamic setting. Educators can guide students in prompting ChatGPT for specific types of conversational practice, ranging from small talk to role playing complex discussions and debates. This interactive approach allows learners to focus on and put into practice their pronunciation targets within the context of real-life communication. Additionally, they can utilize the ChatGPT app on their mobile devices to interact with the tool, receiving immediate feedback on intelligibility. ChatGPT 3.5 can evaluate clarity, grammar, and coherence in speech. Web browsers with text-to-speech capabilities that support Speech Synthesis Markup Language even allow for a “read aloud” function of the output so that users can hear a realistic—if not entirely accurate—audio of the text. This real-time interaction not only aids in pronunciation practice but can also enhance overall language proficiency.

ChatGPT's multifaceted applications to pronunciation instruction offer a wide array of benefits. It acts as a brainstorming partner, a resource for content creation, and an interactive conversation facilitator. These capabilities, combined with the educator's expertise, create a powerful synergy that enhances the effectiveness of pronunciation teaching. However, it is essential to remember that while ChatGPT is a valuable tool, the teacher's role in guiding, customizing, and evaluating the learning experience remains irreplaceable. As we continue to explore and understand the potential of AI in education, the collaboration between human expertise and technological innovation promises to lead to more effective and engaging learning environments.

THE LIMITATIONS OF CHATGPT

While ChatGPT offers innovative approaches to language learning, it is not without significant limitations, particularly in the nuanced area of pronunciation instruction. One of the primary challenges of using ChatGPT 3.5 in pronunciation instruction is its tendency to provide inaccurate responses that appear plausible, or “hallucinations.” While it can offer a broad range of information, such as descriptions of segmentals and suprasegmentals, as well as suggest various activities, assessments, and resources, it sometimes presents misguided or incorrect

information. An example of this is its output for minimal pair practice. Even after careful prompting and specific instructions, ChatGPT 3.5 was not able to provide a fully accurate list of minimal pairs for practice (see Figure 3). These hallucinations can lead to confusion or the propagation of misconceptions among learners. Educators must remain vigilant and critically assess the accuracy and relevance of the information provided by AI.



act as a pronunciation teacher of American English; give me a list of 10 minimal pairs for /b/ and /v/ please



Certainly! Here's a list of 10 minimal pairs that can help you practice the pronunciation difference between /b/ and /v/ in American English:

1. Bat / Vet
2. Ban / Van
3. Cab / Vav
4. Bad / Vad
5. Rib / Riv
6. Robe / Vove
7. Rob / Vov
8. Bib / Viv
9. Bead / Veered
10. Big / Vig

In these pairs, the only difference between the two words is the initial sound: /b/ or /v/. Practice saying each word pair out loud, paying close attention to the vibration of your vocal cords for /b/ (voiced) and the absence of vibration for /v/ (voiceless).

Remember, for /b/, the vocal cords vibrate and produce a voiced sound, while for /v/, the vocal cords do not vibrate, resulting in a voiceless sound.



according to your definition of minimal pairs, the only correct example is number 2.



Apologies for the confusion. You are correct, minimal pairs should have a difference in a single sound segment. Here's a revised list of minimal pairs for /b/ and /v/ in American English:

1. Bat / Vat
2. Bite / Vite
3. Bent / Vent
4. Bit / Vit
5. Bake / Vake
6. Bin / Vin
7. Boast / Voiced
8. Bog / Vague
9. Bell / Vel
10. Bill / Ville

In these revised pairs, there is a distinct difference in the initial sound, either /b/ or /v/. Practice saying each pair out loud, paying attention to the contrast between the voiced /b/ sound and the voiceless /v/ sound.

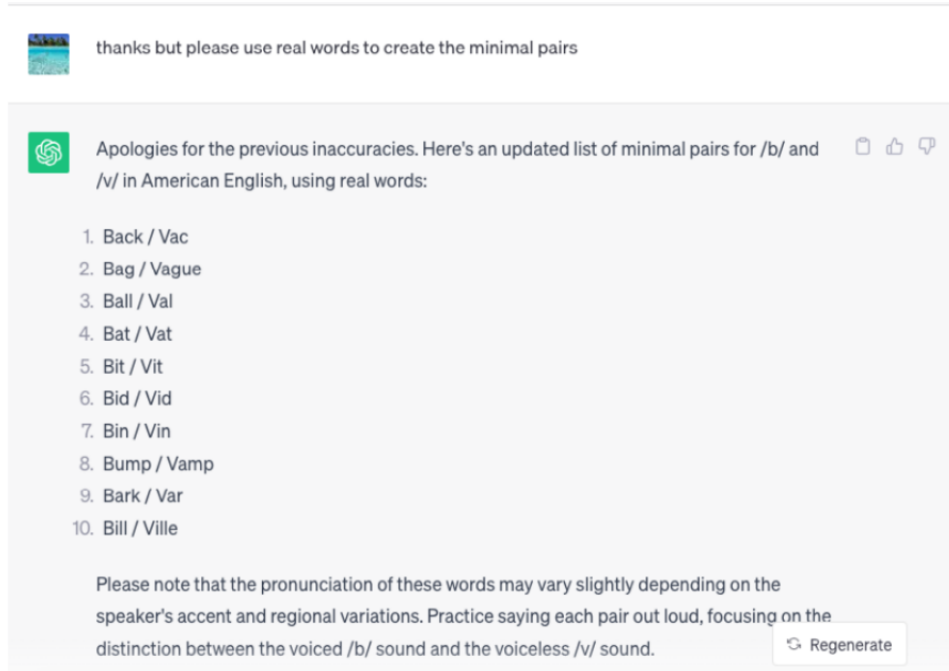


Figure 3. Lima's Interaction with ChatGPT for Generation of Minimal Pairs (September 2023)

Another challenge concerns the lack of nuanced feedback. As a text-based model, ChatGPT is unable to give feedback on pronunciation. While ChatGPT can suggest grammar and vocabulary corrections, it is unable to provide specific, nuanced feedback on intonation, stress, rhythm, and the quality of individual sounds. For instance, while the user's voice-to-text might indicate noncomprehension by typing something the user did not intend to say, ChatGPT cannot deduce the reasons behind the noncomprehension, nor can it offer the detailed, personalized feedback and corrective techniques that a human teacher can provide.

Setting aside its inability to give pronunciation-related feedback, ChatGPT is also unable to address individual learner variability. Each learner comes with a unique set of linguistic backgrounds, challenges, learning styles, and life experiences. Human teachers can adapt their teaching strategies to accommodate these individual differences, something that ChatGPT is currently limited in achieving. While users may share information about themselves with ChatGPT, it does not have the capability to deeply understand and adapt its responses to each learner's specific pronunciation difficulties, cultural background, or personal learning history. It also lacks the empathetic connection and the intuitive understanding that human teachers use to tailor their instruction and encouragement.

Absence of real-time, adaptive interaction is another of ChatGPT's shortcomings. Human teachers can adjust their teaching strategies on the fly, responding to the immediate needs and reactions of their students. They can sense confusion, frustration, or excitement and adapt their instruction accordingly. ChatGPT, while conversational and interactive up to a point, cannot match the dynamic, real-time adaptation and emotional responsiveness of a human teacher. It cannot, for instance, detect subtle cues in a student's speech that might indicate their uncertainty

about what they are saying or provide immediate, tailored encouragement to boost a learner's confidence.

In a nutshell, while ChatGPT can support pronunciation instruction by providing resources and basic practice opportunities, it is limited in its ability to identify inaccuracies and to offer feedback on pronunciation. When offering corrections on word choice and grammar, it is, as of yet, unable to give nuanced, adaptive, and empathetic feedback and guidance that only human teachers provide. These limitations highlight the irreplaceable value of human instructors in the learning process, a topic discussed in more detail in the next section.

THE IRREPLACEABLE ROLE OF HUMAN TEACHERS

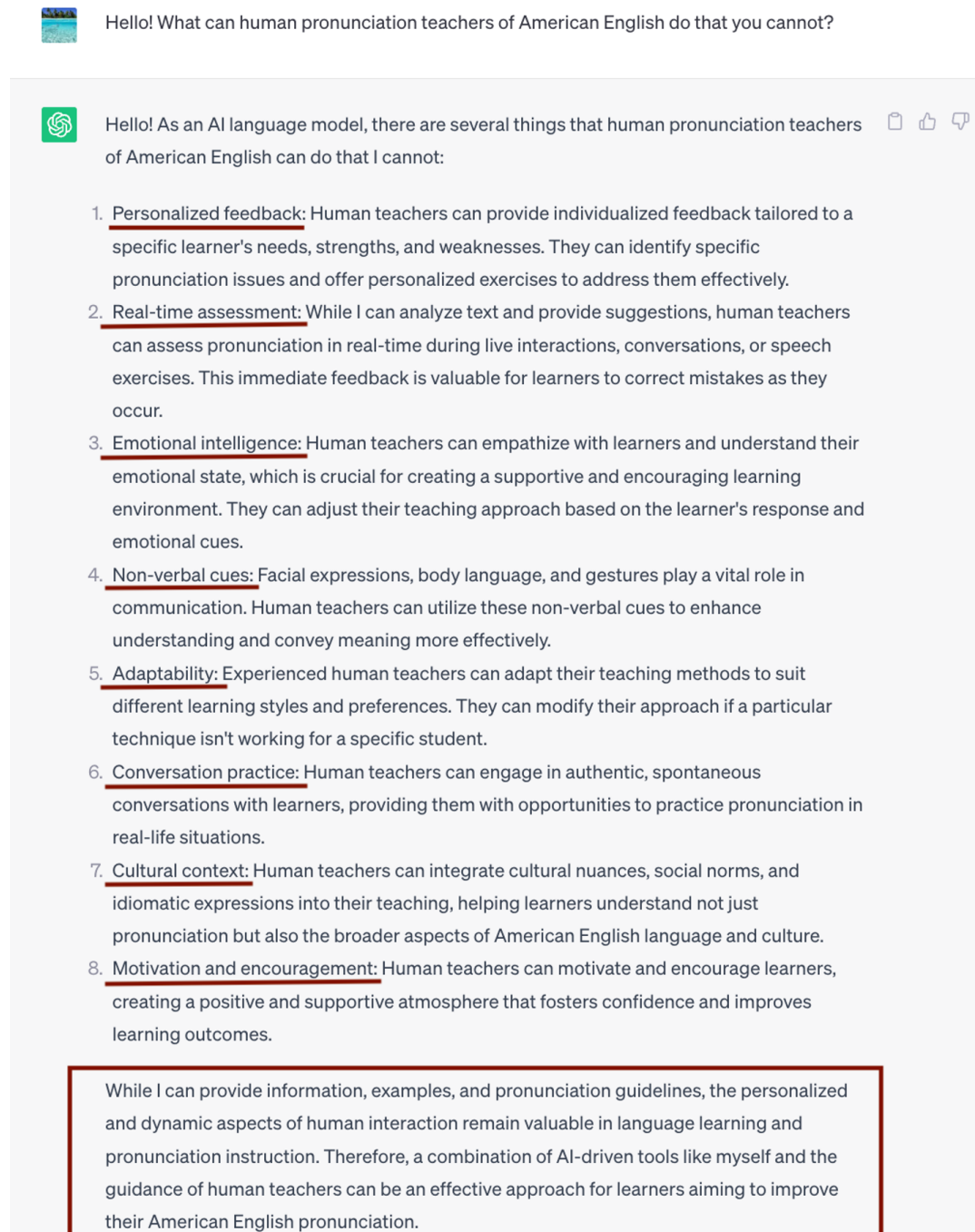
The central role of human teachers in pronunciation training is multifaceted, deeply nuanced, and crucially important. There are several unique aspects of human instruction that are indispensable to the learning process and cannot be replicated by AI. Of critical importance is personalized pronunciation feedback and tailored instruction. Human teachers excel in providing personalized feedback, a critical component to mastering pronunciation. They possess the ability to discern the subtle, individual challenges each student faces, from distinguishing minimal pairs to correcting intricate stress and intonation patterns. Unlike ChatGPT, human teachers can prioritize what is most needed for intelligibility and offer tailored exercises for those specific difficulties, unprompted and in the moment, thereby accelerating their progress in students' pronunciation mastery.

Another aspect of human instruction that cannot be replaced by AI is the human touch. While ChatGPT can perform politeness, as illustrated with the apologies it issued in Figure 3, these words alone cannot replace the human expression of tone and body language, which facilitates human teachers' connection with students on a personal level. By watching learners' body language and listening to their tone of voice, humans can sense frustration, recognize effort, and provide encouragement that is both timely and motivational. This empathetic engagement fosters a supportive learning environment, enabling students to take risks and push beyond their comfort zones, which is essential for improving pronunciation.

Adaptability and dynamic interaction are also unique to human teachers since they have the ability to adapt their classroom teaching strategies in real-time, responding to the dynamic flow of a lesson. They can adjust their methods to suit different learning styles and preferences, ensuring that students receive the most effective instruction. This adaptability extends to incorporating cultural nuances and social norms into their teaching, enriching the learning experience, and grounding pronunciation practice in a broader linguistic and cultural context.

While AI can provide a wealth of information, the shared lived experiences between teacher and student are foundational to language teaching. These experiences allow teachers to integrate real-world context into pronunciation exercises, making lessons more engaging and relevant. Such context cannot be fully replicated by AI, which lacks the personal history and cultural insights that human teachers bring to the classroom.

When asked what human teachers can do that it cannot, ChatGPT 3.5 itself provided the answer seen in Figure 4.



Hello! What can human pronunciation teachers of American English do that you cannot?

Hello! As an AI language model, there are several things that human pronunciation teachers of American English can do that I cannot:

1. Personalized feedback: Human teachers can provide individualized feedback tailored to a specific learner's needs, strengths, and weaknesses. They can identify specific pronunciation issues and offer personalized exercises to address them effectively.
2. Real-time assessment: While I can analyze text and provide suggestions, human teachers can assess pronunciation in real-time during live interactions, conversations, or speech exercises. This immediate feedback is valuable for learners to correct mistakes as they occur.
3. Emotional intelligence: Human teachers can empathize with learners and understand their emotional state, which is crucial for creating a supportive and encouraging learning environment. They can adjust their teaching approach based on the learner's response and emotional cues.
4. Non-verbal cues: Facial expressions, body language, and gestures play a vital role in communication. Human teachers can utilize these non-verbal cues to enhance understanding and convey meaning more effectively.
5. Adaptability: Experienced human teachers can adapt their teaching methods to suit different learning styles and preferences. They can modify their approach if a particular technique isn't working for a specific student.
6. Conversation practice: Human teachers can engage in authentic, spontaneous conversations with learners, providing them with opportunities to practice pronunciation in real-life situations.
7. Cultural context: Human teachers can integrate cultural nuances, social norms, and idiomatic expressions into their teaching, helping learners understand not just pronunciation but also the broader aspects of American English language and culture.
8. Motivation and encouragement: Human teachers can motivate and encourage learners, creating a positive and supportive atmosphere that fosters confidence and improves learning outcomes.

While I can provide information, examples, and pronunciation guidelines, the personalized and dynamic aspects of human interaction remain valuable in language learning and pronunciation instruction. Therefore, a combination of AI-driven tools like myself and the guidance of human teachers can be an effective approach for learners aiming to improve their American English pronunciation.

Figure 4. ChatGPT 3.5's answer when asked about human teachers' advantages over it (September 2023)

It is interesting to note that Lima asked the same question to ChatGPT Plus (the paid version), and while the answer was a bit more elaborated, ChatGPT emphasized the same overall issues as compared to a human teacher: personal interaction, contextual understanding, adaptability,

accent and nuance, cultural insights, and motivation and encouragement. As such, while ChatGPT and technology can be powerful tools for language learning, offering consistent practice and a wide range of resources, they currently lack the personal touch, adaptability, and deep cultural understanding that human teachers provide. AI serves best as a supplement to human instruction, not a replacement.

FINAL THOUGHTS AND FUTURE DIRECTIONS

In the evolving landscape of language education, the symbiosis between human expertise and ChatGPT's capabilities has become increasingly prominent. The unique qualities of human teachers—personalized feedback, emotional intelligence, non-verbal cues, adaptability, authentic practice, cultural insights, and motivational support—are foundational elements that create a nurturing environment for language and pronunciation acquisition. These intrinsic human attributes foster a positive atmosphere that facilitates deeper learning, an aspect that ChatGPT, even in its advanced current state, cannot emulate.

As such, while a remarkable tool in its own right, ChatGPT functions optimally under the direction of skilled educators. It offers time-saving benefits and a diverse array of practice opportunities, yet it requires the discerning eye of teachers to navigate its output and ensure the accuracy and relevance of instructional content. The human teacher's ability to provide targeted instruction, coupled with the empathy stemming from lived experiences, remains unmatched. Looking forward, the integration of ChatGPT in language education presents an opportunity for innovative teaching paradigms. With OpenAI's API broadly available to app developers for integrating ChatGPT into other apps and platforms, there are several potential future directions and applications. For instance, ChatGPT can be used in hybrid learning environments to combine its tools with human instruction, leading to more personalized and flexible learning experiences and allowing for adaptive learning paths that cater to individual student needs.

Another possible productive use for ChatGPT is with teacher training and professional development. In this domain, ChatGPT can serve as a potent tool to enhance the skill set of novice teachers. Its ability to simulate a wide array of teaching scenarios provides emerging educators with invaluable opportunities to refine their teaching methods. This is particularly beneficial in resource-limited settings where access to diverse classroom experiences and mentoring may be constrained. ChatGPT can be used to generate and provide a repository of resources, including lesson plans, classroom activities, and assessment tools, which novice teachers can customize and employ in their practice. This access to a plethora of materials helps in building their resourcefulness and adaptability, key traits for successful educators.

ChatGPT may even be able to create realistic and diverse linguistic challenges that teachers may face in the classroom, offering a safe and controlled environment for practice. Novice teachers can interact with it to experiment with different teaching strategies, receive instant feedback, and adjust their approaches accordingly. Also, developers could use ChatGPT through OpenAI's API to create a platform for continuous professional development by keeping educators abreast of the latest research and methodologies in language teaching. Through curated content and interactive learning modules, teachers can stay updated on innovative practices and theoretical frameworks within the field of language education.

Additionally, developers can create an app that facilitates peer collaboration by connecting teachers across the globe, fostering a community of practice where they can share insights, strategies, and experiences. This global network can provide support and inspiration, encouraging a collaborative approach to professional growth.

By integrating ChatGPT into teacher training programs, educational institutions can ensure that novice teachers receive a comprehensive, modern, and supportive introduction to the teaching profession. This integration not only aids in developing their practical skills but also encourages a mindset of lifelong learning, which is essential in the ever-evolving landscape of education. ChatGPT thus acts not only as a facilitator of knowledge and skills but also as a catalyst for innovation and continuous improvement in teaching practices.

In conclusion, while ChatGPT is reshaping the contours of language instruction, the essence of teaching—rooted in humanity—remains indispensable. The future of language education lies not in choosing between ChatGPT and human teachers but in leveraging the strengths of both to enrich the learning experience. The goal is a harmonious blend where technology enhances human teaching, not one where it seeks to replace the irreplaceable.

ABOUT THE AUTHORS

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