

English Major Education: Application and Practice of Multimodal Technology

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Abstract: With the rapid development of information technology, multimodal technology has gradually infiltrated various educational fields, including English major education. This paper explores the application and practice of multimodal technology in English major education. Firstly, the paper analyzes the traditional modes and limitations of English major education and introduces the developmental trends of multimodal technology in modern education. Subsequently, the paper elaborates on the driving role of multimodal technology in English major education, its advantages in enhancing teaching effectiveness, challenges faced, and proposes corresponding strategies. Finally, through specific application examples, the paper demonstrates the practical effects of multimodal technology in listening, speaking, and reading instruction. Research indicates that multimodal technology not only enhances students' learning interest and engagement but also effectively improves teaching quality and learning outcomes. Future studies should further explore innovative applications of multimodal technology in English language teaching to better meet the demands of modern education.

Keywords: Multimodal technology; English major education; Teaching reform; Language skills; Instructional innovation

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1. Introduction

In recent years, with the rapid development of global information technology, the field of education has witnessed unprecedented transformations. Among these, the application of multimodal technology has become a significant trend in the reform of English major education. Traditional English teaching methods primarily involve teacher-centered instruction, where students passively receive knowledge. While this approach partially imparts language knowledge, it significantly limits the cultivation of students' comprehensive language application abilities. Multimodal technology integrates various media forms such as text, images, audio, and video, providing students with a richer and more diversified learning experience, effectively compensating for the deficiencies of traditional teaching methods.

Research into the application and practice of multimodal technology in English major education holds significant importance. On one hand, it helps optimize teaching methods and improve teaching effectiveness. On the other hand, it stimulates students' learning interests and enhances their comprehensive language abilities.

Therefore, a thorough exploration of the specific application and practical effects of multimodal technology in English major education not only contributes to advancing teaching reforms but also provides robust support for cultivating versatile talents adaptable to the demands of the information age.

2. Multimodal technology integration in English major education: Background and importance

2.1. Traditional modes and limitations of English major education

Traditional English major education relies primarily on teacher lectures and passive student reception of knowledge. This approach typically centers around textbooks, featuring monotonous teaching content with limited interactivity and appeal. In the classroom, teachers mainly convey knowledge through writing on the board, explanations, and demonstrations, while students engage mainly in listening, note-taking, and completing assignments. Although this teacher-centered teaching method is somewhat effective in knowledge transmission, it significantly lacks in cultivating students' practical language application abilities^[1].

Firstly, the traditional model lacks diverse teaching methods, failing to fully engage students' interests and motivation. Single teaching media and methods often lead to divided attention and insufficient learning motivation. Secondly, there is insufficient interactivity in the traditional mode, making it challenging for students to express their viewpoints and ideas fully in class, thus lacking practical opportunities to apply the language. Additionally, traditional assessment methods overly emphasize students' exam scores, neglecting their performance and progress in actual language application.

2.2. Development trends of multimodal technology in modern education

Multimodal technology integrates various media forms such as text, images, audio, and video to provide a richer and more diverse learning experience. With the rapid development of information technology, the application of multimodal technology in modern education is increasingly widespread, becoming a crucial direction for educational reform. By integrating diverse media resources, multimodal technology creates a more vivid, intuitive, and interactive learning environment for students^[2].

In recent years, technologies such as interactive whiteboards, virtual reality (VR), augmented reality (AR), and digital storytelling have gradually become popular in the education sector. These technologies not only enrich teaching content and forms but also promote interaction and collaboration between teachers and students as well as among students. For example, interactive whiteboards can display teaching content in real time, allowing students to operate interactively through touch controls, thereby enhancing classroom interaction. VR technology can simulate realistic language environments, enabling students to immerse themselves in language practice, while digital storytelling combines text, sound, and images to help students better understand and remember learning content.

2.3. Role of multimodal technology in driving English major education

The application of multimodal technology in English major education provides new possibilities for innovating teaching modes and improving teaching effectiveness. Firstly, multimodal technology significantly enhances classroom interaction and participation. By utilizing multimedia resources, teachers can design more lively and interesting teaching activities that capture students' attention and stimulate their learning interests. For instance, by using video materials to showcase the cultural backgrounds of English-speaking countries, students can gain a more intuitive understanding of language usage environments.

Secondly, multimodal technology helps improve students' comprehensive language abilities. By integrating

training in listening, speaking, reading, and writing skills, multimodal technology provides students with a more comprehensive and systematic learning experience. For example, using speech recognition and feedback systems, students can practice oral skills in real time and receive immediate corrections, thereby enhancing their oral expression abilities.

Moreover, multimodal technology facilitates personalized learning. Through online learning platforms, teachers can provide targeted learning resources and guidance based on students' learning progress and needs, helping students overcome difficulties and weaknesses in their studies. This personalized teaching approach not only improves learning efficiency but also enhances students' autonomy in learning^[3].

3. Multimodal technology in English major education: Advantages and challenges

3.1. Advantages of multimodal technology in enhancing language teaching effectiveness

Multimodal technology demonstrates numerous advantages in English major education, significantly enhancing language teaching effectiveness. Firstly, through rich teaching resources and diverse teaching methods, multimodal technology enhances the vividness and attractiveness of teaching content. For example, interactive whiteboards and multimedia projections organically integrate text, images, audio, and video, making abstract language knowledge concrete and intuitive, thereby stimulating students' learning interests and motivation.

Secondly, multimodal technology promotes interactivity and participation in teaching. Through virtual reality (VR) and augmented reality (AR) technologies, students can engage in language practice within virtual environments, enhancing immersion and interaction. Additionally, online discussion platforms and instant messaging tools facilitate convenient interaction between teachers and students as well as among students, fostering frequent and in-depth communication both inside and outside the classroom.

Moreover, multimodal technology supports personalized learning. Online learning platforms can provide customized learning resources and feedback based on students' learning progress and needs, helping students improve in specific areas. Intelligent tutoring systems and automatic assessment tools can monitor and evaluate students' learning performance in real time, offering personalized learning suggestions to enhance learning effectiveness^[4].

3.2. Challenges faced in implementing multimodal technology

Despite its significant advantages in English major education, the implementation of multimodal technology still faces several challenges. Firstly, limitations in technology equipment and resources are a major barrier. Multimodal teaching requires high-quality hardware equipment and abundant multimedia resources, which some schools in resource-limited areas struggle to afford, hindering the comprehensive promotion of multimodal teaching.

Secondly, there is a need to enhance teachers' technological capabilities and teaching methods. Multimodal teaching places higher demands on teachers' ability to apply technology and design teaching activities effectively. Many teachers are unfamiliar with new technologies, making it difficult to utilize multimodal tools for teaching design and implementation. Moreover, some teachers find it challenging to directly transfer their experience and methods from traditional teaching modes to multimodal teaching, requiring a shift in teaching philosophy and methods.

Lastly, students' abilities to adapt to new technologies and their learning habits pose another challenge. While multimodal technology can provide rich learning resources and flexible learning methods, some students exhibit low acceptance of new technologies or lack self-management and autonomous learning capabilities, resulting in suboptimal learning outcomes^[5].

3.3. Strategies to address challenges of multimodal teaching

To address the challenges faced by multimodal teaching in English major education, a series of strategies should be implemented. Firstly, there should be increased investment in education to improve the configuration of technology equipment and resources. Governments and schools should enhance support for educational informatization, providing necessary hardware facilities and multimedia resources to ensure the smooth implementation of multimodal teaching.

Secondly, efforts should be made to enhance teachers' technological capabilities and teaching design skills. Schools should conduct regular technical training and teaching workshops to help teachers become familiar with multimodal tools and technologies, and master methods and strategies for multimodal teaching design. Additionally, teachers should actively engage in teaching practice and reflection, continuously optimizing and innovating multimodal teaching models to improve teaching effectiveness.

Furthermore, efforts should focus on cultivating students' abilities to adapt to new technologies and their autonomous learning capabilities. Schools should gradually introduce multimodal technology into daily teaching, helping students become familiar with and adapt to new learning methods. At the same time, teachers should emphasize cultivating students' self-management skills and learning habits, guiding students to actively participate in the learning process to enhance learning outcomes.

4. Multimodal technology in English major education: Applications and practices

4.1. Application of multimodal technology in listening teaching

Multimodal technology demonstrates significant potential and advantages in listening teaching, significantly enhancing students' listening comprehension abilities and learning experiences. Firstly, students are provided with diverse listening materials using digital audio and video resources. These materials include not only traditional dialogues and speeches but also real-life scenarios such as movie clips, news reports, and lectures, allowing students to access a broader and more authentic language input. For example, through watching English movie clips, students not only practice listening but also learn authentic colloquial expressions and cultural backgrounds. These diverse and authentic listening materials enable students to practice listening skills in different contexts, enhancing their ability to adapt to various accents and speech speeds ^[6].

Secondly, multimodal technology enhances the effectiveness of listening training through interactivity and immediate feedback functions. Using interactive whiteboards and online listening practice platforms, teachers can design real-time interactive listening exercises. Students can receive immediate feedback after completing exercises, understanding their listening levels, and identifying errors, thereby conducting targeted practice and improvement. For instance, teachers can play a video clip on an interactive whiteboard and have students answer questions afterward. The system immediately displays students' responses, provides correct answers, and offers explanations. This instant feedback mechanism helps students identify and correct listening issues promptly, enhancing learning efficiency and effectiveness.

Additionally, speech recognition technology and automatic scoring systems assist students in self-assessment and practice, improving the autonomy and effectiveness of listening training. Students can use speech recognition software for listening exercises, which provides grading and feedback based on their responses, indicating areas for improvement.

Lastly, multimodal technology integrates multiple sensory stimuli to enhance students' listening comprehension. By combining audio with visuals and subtitles, students can simultaneously see relevant visual information and textual prompts during listening, aiding better understanding and memory retention of listening

content. For example, when listening to news reports, students not only hear the news but also see related video footage and news subtitles, improving listening comprehension. This multisensory learning approach stimulates students' interest in learning and enhances their memory and understanding of listening materials.

4.2. Application of multimodal technology in speaking teaching

The application of multimodal technology in speaking teaching provides students with more language practice opportunities and richer learning experiences. Firstly, virtual reality (VR) and augmented reality (AR) technologies create immersive language learning environments for students. In virtual reality settings, students can engage in role-playing, simulated dialogues, and scenario exercises, enhancing fluency and accuracy in spoken language expression. This immersive experience not only enhances learning enjoyment but also boosts students' confidence and oral communication skills. For instance, students can practice conversations with service personnel in virtual shopping centers, restaurants, or airport settings. These simulations of real-life contexts enable students to use language more naturally and better prepare them for communication demands in real life.

Secondly, multimodal technology enhances the effectiveness of speaking exercises through speech recognition and feedback systems. Intelligent voice assistants and online speaking practice platforms can analyze students' speech inputs in real time, providing feedback on pronunciation, intonation, and grammar to help students correct errors and improve the accuracy and naturalness of their spoken language. For example, students can practice reading aloud using a speech recognition system, which provides feedback on pronunciation accuracy and demonstrates correct pronunciation. Moreover, video recording and playback functions allow students to review their speaking practice videos repeatedly, facilitating self-reflection and improvement. This process of self-reflection helps students identify their weaknesses, continuously improve, and enhance their speaking abilities.

Lastly, multimodal technology promotes interaction and collaboration among students and between students and teachers. Through video conferencing software and online discussion platforms, students can engage in real-time conversations and discussions with peers, simulating authentic communication scenarios and enhancing the practicality and interactivity of speaking practice. For example, students can participate in group discussions, role-plays, or debates during video conferences. Such interactive activities not only improve oral expression skills but also cultivate teamwork and critical thinking abilities. Teachers can also provide remote guidance and feedback through these platforms, using screen sharing to demonstrate examples, correct students' errors in real time, and offer targeted practice suggestions to ensure personalized guidance for each student.

4.3. Application of multimodal technology in reading teaching

Multimodal technology enhances reading teaching by providing students with a richer and more diverse reading experience, significantly improving reading comprehension abilities and learning outcomes. Firstly, e-books and interactive reading platforms offer students diverse reading resources. These resources include not only text but also images, videos, and audio, allowing students to access information through multiple sensory pathways, thereby enhancing the interest and effectiveness of reading. For example, e-books can embed audio explanations to help students better understand complex textual content. Additionally, students can directly access related video resources through embedded links for a more intuitive understanding.

Secondly, multimodal technology enhances the comprehensibility and attractiveness of reading materials by integrating multimedia elements. By combining text with relevant images and videos, students can better

visualize and understand reading content. For example, when reading an article describing a historical event, students can understand the event's background and details better through embedded historical images and documentary clips. Moreover, interactive reading platforms provide instant vocabulary explanations and background information, assisting students in solving problems encountered during reading. Such multimodal integration helps students better understand texts and stimulates their learning interest and curiosity.

Furthermore, multimodal technology supports personalized reading experiences. Through big data analysis and artificial intelligence technology, interactive reading platforms can recommend suitable reading materials and learning paths based on students' reading speed, comprehension level, and interests. This personalized recommendation system helps students utilize their time more effectively, focusing on mastering the most essential content. Additionally, teachers can adjust teaching strategies promptly based on students' reading data obtained through the platform, providing targeted guidance.

Lastly, multimodal technology promotes the development of students' critical thinking and reading strategies. Online reading platforms typically include features such as reading notes, annotations, and discussion functions. Students can record their thoughts and questions during reading, and share and discuss them with peers, deepening their understanding and analysis of reading materials. This interactive and collaborative learning approach helps cultivate students' critical thinking and reading strategies, enhancing the depth and breadth of their reading. For example, when reading a literary work, students can annotate important paragraphs, write down their thoughts or questions, and discuss them with classmates to gain different perspectives and insights. Moreover, multimodal reading platforms encourage students to express opinions and engage in debates through discussion areas or forums, stimulating their critical thinking abilities.

5. Conclusion

Through an in-depth exploration of the application and practices of multimodal technology in English major education, this article identifies significant advantages in enhancing teaching effectiveness and student engagement. However, the implementation faces challenges such as technological limitations, the need to enhance teachers' ICT skills, and students' adaptation difficulties to new technologies. In response to these challenges, this article proposes a series of strategies, such as improving teachers' ICT capabilities, strengthening infrastructure development, and implementing effective assessment mechanisms.

Looking ahead, with continuous technological advancements, the application of multimodal technology in English major education will become more widespread and profound. Researchers and educators should continue to explore and innovate the application of multimodal technology, continually optimizing teaching modes to better meet the needs of modern education. Moreover, more empirical research should be conducted to evaluate the actual effects of multimodal technology in different teaching environments, providing scientific evidence for its broader application in English major education. Through ongoing research and practice, it is anticipated that multimodal technology will bring more transformation and innovation to English major education, providing better support for students' comprehensive development.

Disclosure statement

The author declares no conflict of interest.

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