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Application of Network Technology in English Interpretation Classes: Pathways and Effectiveness Research

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Abstract: In recent years, the integration of network technology into English interpretation classes has significantly transformed traditional pedagogical methods. This paper delves into the pathways and effectiveness of incorporating network technology to enhance the learning outcomes of English interpretation in universities. It provides a comprehensive overview of how various technologies, such as AI-aided translation tools, online collaboration platforms, and real-time feedback systems, are reshaping students' learning habits and the modern educational environment. The study concludes with practical recommendations for educators on effectively integrating these technologies into their curriculum to optimize student engagement and learning outcomes. By adopting these practices, educators can enhance student engagement, facilitate a more interactive learning experience, and ultimately improve learning outcomes in English interpretation classes.

1. Introduction

The rapid advancement of network technology has significantly impacted various fields, including education. English interpretation, a critical skill in global communication, has particularly benefited from these technological advancements. Traditional classroom settings have evolved into dynamic, interactive learning environments that leverage the power of the internet and digital tools. This paper aims to examine the application of network technology, such as Text-to-Speech (TTS) technology and Chatbot, in English interpretation classes, focusing on practical implementations, challenges, and future directions to assess its effectiveness.

2. The Evolution of Interpretation Education

Historically, interpretation education relied heavily on face-to-face interactions, in-person training sessions, and manual practice methods. With the advent of network technology, there has been a paradigm shift towards more flexible, accessible, and efficient modes of teaching and learning. Network technology encompasses a wide range of tools and platforms, including machine translation, video conferencing, AI-aided technologies and educational software. Machine translation, including Youdao and Baidu, is widely used among students before and after classes, and has become an indispensable tool for independent learning. Video conferencing emerged during the epidemic period, bringing both opportunities and challenges to teachers and students. However,

study conducted by Han found out that teaching quality and learning effectiveness are not significantly affected by online interpreting.[1] AI-aided technologies encompass a wide range of tools and systems that leverage artificial intelligence to assist, enhance, or automate tasks across various domains. Chatbots and virtual assistants can understand and respond to queries, while speech recognition and synthesis technologies, such as voice-to-text and text-to-speech, make information transfer more seamless. AI-aided technologies are useful tools for supporting teaching and learning in Chinese universities, while user-friendly features and adequate electronic devices needed to be improved. [2] These network technologies facilitate real-time communication, resource sharing, and interactive learning, making them ideal for language education and interpretation training.

Current trends in interpretation training emphasize blended learning approaches, combining traditional methods with online resources and tools. This hybrid model allows for greater flexibility, accommodating diverse learning styles and schedules. A number of studies have incorporated network technologies in their English classes and ideal results have shown that students are willing to use these novel tools and platforms in their study and their performance are greatly improved. For example, students in Korea experienced increased English proficiency by adopting chatbots in their English learning. [3] Virtual classes (VCs) make up a significant component of blended learning model, as what is said in Biernacka and Agnieszka's study. Although VCs can hardly replace face-to-face training, they provide both professional and pedagogical opportunities for both the trainees and trainers. [4]

3. Pathways to Implementing Network Technology in Interpretation Classes

3.1. Technological Infrastructure

The foundation of integrating network technology into interpretation classes is a robust technological infrastructure. This includes reliable internet access, modern hardware (computers, tablets, smartphones), and appropriate software applications designed for language learning and interpretation practice. Although 77.5% of the Chinese population have access to the Internet, limitations still exist in some remote areas, where stable connection and strong signal are hard to remain. [5] While not all learners possess electronic devices, and the possible incompatibility of software in different operation systems, all of which pose obstacles when attempting to integrate network technology. Therefore, several factors should be considered in achieving a reliable technological infrastructure.

3.2. Online Learning Platforms

Platforms such as Chaoxing Xuexi Tong offer comprehensive solutions for managing course content, facilitating communication, and tracking student progress. It is a popular online learning platform in China, primarily used in educational institutions like universities and schools. It offers a variety of resources and tools to facilitate learning, including access to e-books, online courses, video lectures, and interactive activities. The platform also supports classroom management features, allowing teachers to assign tasks, monitor student progress, and engage with students in a virtual environment. Teachers can create quizzes, assignments, and discussion forums to engage students, ensuring an interactive classroom. Moreover, both students and teachers can track learning progress and performance and the platform is accessible through a mobile app, allowing users to learn on the go.

3.3. Video Conferencing Tools

Tools like Tencent Meeting and DingTalk are indispensable for fostering real-time interaction between instructors and students in an online learning environment. These platforms enable seamless live interpretation practice, where students can engage in real-time language exercises, receive immediate feedback, and improve their skills in a dynamic setting. Additionally, they provide a platform for virtual tutoring sessions during winter and summer breaks, allowing students to ask questions, seek clarification, and have one-on-one discussions with their instructors, thereby enhancing the accessibility and personalization of the learning experience. Furthermore, these tools support collaborative projects, enabling students to work together in real-time, share resources, and communicate effectively, closely replicating the interactive and cooperative nature of in-person classes. This ensures that the learning experience remains engaging and effective, even in a virtual format.

3.4. Digital Resources and AI-aided Technology

A wide range of digital resources, including online dictionaries, translation software, and specialized interpretation training apps (e.g., Interprefy, Speechlogger), provides students with valuable practice materials and instant feedback on their performance. Additionally, AI-aided translation technologies, such as voice translation tools like iFlytek Translator, Baidu Translator, and Youdao Translator, play a crucial role in language learning. These tools utilize technologies such as Automatic Speech Recognition (ASR), Neural Machine Translation (NMT), and Text-to-Speech Synthesis (TTS) to offer real-time interactions and immediate responses in interpretation training. For example, Al-Jarf proposes integrating text-to-speech (TTS) software into interpreting training, emphasizing its benefits, usage, and the instructor's facilitative role. [6] Furthermore, other AI-aided technologies, such as chatbots including ChatGPT, Doubao, and Amazon Alexa, offer interactive communication for addressing students' queries. In both classroom settings and self-study, these platforms provide personalized feedback on grammar and output accuracy, thereby enhancing the overall learning experience.

4. Practical Application of Network Technology in Xi'an Fanyi University

Xi'an Fanyi University is a private university specializing in English, Translation, and other foreign languages. Students majoring in English are required to take interpretation classes as compulsory courses during their junior year. The interpreting courses can be divided into several directions, including Chinese-to-English (C-E), English-to-Chinese (E-C), specialized interpreting, and sight interpreting. To illustrate the effectiveness of various network technology applications, two interpretation classes at Xi'an Fanyi University were compared.

4.1. Class A

A blended learning model was implemented, incorporating Chaoxing for course management along with other network technologies. The purpose was to assist teachers in monitoring students' learning progress and to save time on grading homework. Platforms like the Newclass system provided a convenient and clear communication channel between teachers and students during class. Utilizing tools such as Speechlogger or Doubao for real-time practice and feedback helped students self-correct mistakes they might not have been aware of. Additionally, employing TTS technology to create listening materials offered a more personalized training method, incorporating different accents to better reflect real-life scenarios. This approach increased student engagement, as the

varied accents were more relevant to real-world situations.

4.2. Class B

The traditional teaching methods focus on practicing with training materials primarily from textbooks, with the teacher providing feedback based on performance. Due to time constraints, each practice session allows for feedback to at most 2-3 students.

Observation Outcome: Compared to Class B, students in Class A were more eager to participate in training activities and displayed greater enthusiasm for exploring unfamiliar fields. While verbal encouragement was continuously needed, its effect was less promising in Class B. The students in Class A demonstrated increased engagement and improved performance, attributed to their flexible access to resources and interactive live sessions. In contrast, Class B students' participation gradually decreased over time, and the outdated learning materials led to less favorable learning outcomes.

5. Assessing Effectiveness of Network Technology in Interpretation Training

5.1. Student Engagement and Participation

Integrating network technology has shown to increase student engagement and participation in Class A. Interactive tools and real-time feedback mechanisms can make learning more dynamic and interactive, keeping students motivated and involved in their learning process.

5.2. Skill Development and Performance Improvement

The use of specialized software and real-time practice tools, such as Doubao, has significantly enhanced students' interpretation skills. Students benefit from immediate feedback and the ability to practice in a simulated real-world environment, which prepares them for professional scenarios.

5.3. Flexibility and Accessibility

Network technology provides flexibility in accessing learning materials and participating in classes. This accessibility accommodates diverse learning styles and schedules, allowing students to learn at their own pace and from any location.

6. Recommendations for Educators

6.1. Invest in Reliable Technology

To create a successful online learning environment, it is crucial to invest in reliable and up-to-date technology. This includes both hardware and software that can efficiently support the demands of online education. Reliable technology not only ensures smooth operation during classes but also minimizes disruptions, allowing both students and instructors to focus on the learning process. Regular updates and maintenance of these technological tools are essential to keep up with the latest advancements and to ensure compatibility with emerging educational platforms and resources.

6.2. Provide Training and Support

Proper training and support for both students and instructors are vital for the effective use of

technology in education. Training sessions should be designed to help users become familiar with the technological tools and platforms they will be using. This training should not only focus on the technical aspects but also on how to integrate these tools into the learning process effectively. Providing ongoing support ensures that any issues are quickly addressed, preventing them from becoming barriers to learning. Additionally, equipping students with technological skills prepares them for their future careers, aligning their education with the demands of the modern workplace.

6.3. Incorporate Interactive Elements

The use of interactive elements in online learning environments is key to maintaining student engagement and promoting active learning. Incorporating tools such as live discussions, interactive quizzes, and multimedia presentations can make learning more dynamic and participatory. Interactive elements encourage students to apply what they have learned in real-time, fostering a deeper understanding of the material. This approach also allows for immediate feedback, helping students to identify and correct misunderstandings as they occur. Online game websites, such as Kahoot! And Quizlet, are strongly recommended for engaging and interactive learning experiences.

6.4. Blend Traditional and Modern Methods

A well-rounded educational experience can be achieved by blending traditional teaching methods with modern technological tools. Traditional methods, such as lectures and textbook readings, provide a solid foundation of knowledge, while modern technologies, like online simulations and virtual classrooms, offer new ways to explore and apply that knowledge. This hybrid approach caters to different learning styles and helps to reinforce learning through multiple channels, making education more accessible and effective.

6.5. Monitor and Evaluate

Continuous monitoring and evaluation of the technological tools used in education are essential to ensure their effectiveness. By regularly collecting feedback from students and analyzing performance data, educators can identify areas where the technology is working well and where improvements are needed. This ongoing evaluation process allows for timely adjustments to be made, ensuring that the tools remain relevant and continue to meet the needs of both students and instructors. Effective monitoring and evaluation contribute to the overall success of the online learning environment, making it a dynamic and responsive system.

As technology continues to evolve, so will its application in education. Future research should focus on emerging technologies, such as artificial intelligence and virtual reality, and their potential to further enhance interpretation training. Additionally, longitudinal studies are needed to assess the long-term impact of network technology on students' interpretation skills and career outcomes.

7. Conclusion

The integration of network technology in English interpretation classes offers numerous benefits, including increased flexibility, enhanced engagement, and improved learning outcomes. By carefully selecting and implementing appropriate technological tools, educators can create a dynamic and effective learning environment that prepares students for the demands of real-world interpretation.

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