

Application and Prospects of Networked Intelligent Language Laboratories in Language Education

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Abstract

This thesis focuses on the various aspects of networked intelligent language laboratories in the field of language education. It describes its development, analyses in detail how it is applied at different educational levels, discusses in depth the advantages it possesses, and looks forward to the future development trend, aiming to provide a comprehensive theoretical basis and practical reference for the further optimization of language education with the help of this technology.

Keywords

Networked intelligent language laboratory, language education, application, outlook.

1. Introduction

In today's digital intelligent era, language education is undergoing profound changes. The emergence of networked intelligent language laboratory breaks the many limitations of traditional language teaching and opens a new path for the innovation and improvement of language education. Its importance is not only reflected in the updating of teaching methods, but also in the ability to better meet the needs of different learners and adapt to the new requirements of language education in the context of globalisation.

1.1. Background

In today's era of rapid development of digital information, information technology has deeply penetrated into various educational fields, and language education is no exception. The acceleration of globalisation has made language communication more and more frequent, and people's demand for language learning is growing and diversifying. Traditional language education mainly relies on classroom teaching, teaching materials and limited audio-visual resources, and the teaching mode is relatively single and rigid, making it difficult to fully satisfy the personalised needs of different learners in terms of their learning progress, learning styles, interests and preferences. At the same time, with the concept of education fairness taking root in people's minds, how to break the geographical limitations, so that high-quality language education resources can be shared in a wider range has become an urgent problem. In addition, the booming development of artificial intelligence, big data, cloud computing, virtual reality and other emerging technologies has provided strong technical support for the changes in the field of education, and the networked intelligent language laboratory has emerged, which integrates a variety of advanced technologies and aims to build a more intelligent, personalized, interactive and resource-rich learning environment for language education, so as to adapt to the requirements of the development of language education in the new era.

1.2. Research Objectives

This study aims to explore in depth and comprehensively the current status of the application of networked intelligent language laboratories in language education, its advantages and characteristics, as well as the future development direction and potential. Firstly, to analyse in

detail the teaching modes (e.g. broadcast teaching, online teaching, self-study on-demand teaching, etc.) adopted by networked intelligent language laboratories in different language education scenarios (e.g. primary and secondary schools, colleges and universities, language training institutions, etc.) and their actual application effects, including the impact on the enhancement of students' language skills, the stimulation of their interest in learning, and the cultivation of their independent learning ability, etc.; secondly, to explore the advantages and potentials of networked intelligent language laboratories compared with traditional language teaching methods. The second is to deeply explore the unique advantages of networked intelligent language labs compared with traditional language teaching means, such as the advantages at the technical level (application of Internet technology, construction of voice learning LANs, etc.) and the functional level (personalised learning support, rich resource reserves, accurate testing and assessment, integrated teaching functions, etc.); the third is to make an analysis of the direction of technological innovation (e.g., fusion of emerging technologies), teaching application expansion, etc., of networked intelligent language labs in the future, based on the current technological development trend and the changes in educational needs. Thirdly, based on the current technological development trend and changes in educational needs, it conducts prospective research and outlook on the future direction of technological innovation (e.g. fusion with emerging technologies), the expansion of teaching applications (e.g. expansion of resource library, compatibility of multimedia equipment, deepening of network teaching) and the path of scientific management (e.g. maintenance of equipment and personnel training, system specification), etc., so as to provide a theoretical basis and practical guidance with reference value for language educators, educational institutions and related technology researchers, and to facilitate the optimisation of the networked smart It will provide a theoretical basis and practical guidance for language educators, educational institutions and related technology developers, so as to promote the optimal development and wide application of networked intelligent language laboratories in the field of language education, and improve the overall quality and efficiency of language education.

1.3. Research Significance

1.3.1. Theoretical significance

This study helps to enrich the theoretical system of language education. Through the in-depth analysis of the application of networked intelligent language laboratory in language education, it further expands the research scope of language education, combines advanced information technology with traditional language education theory, and opens up new perspectives for the theoretical study of language education. For example, when exploring the application of personalised learning and intelligent teaching evaluation, it can prompt education scholars to re-examine the process and mechanism of language learning, thus promoting the innovative development of language education theory in the digital era and laying a more solid theoretical foundation for subsequent related research.

1.3.2. Practical significance

For educational institutions and educators, this study can provide a detailed application guide about the networked intelligent language laboratory. It helps them to better understand and master the functions and features of this laboratory, so as to reasonably plan teaching activities, optimise teaching methods and improve teaching quality. For example, according to the analysis of the application of different teaching modes in the study, teachers can flexibly choose appropriate teaching modes according to the teaching objectives and students' characteristics to enhance the effectiveness of classroom teaching. At the same time, it also helps educational institutions to make scientific decisions in laboratory construction, resource allocation, personnel training, etc., and improve the efficiency of the use of educational resources. From

the learners' point of view, the effective application of networked intelligent language laboratories can create a more high-quality, convenient and personalised learning environment for them. By analysing its advantages and application cases, this study can give learners a better understanding of how to use the lab to meet their own learning needs, improve their learning efficiency and interest, and cultivate their independent learning ability and lifelong learning awareness, so as to better adapt to the modern society's requirements for language proficiency. At the social level, this study has positive significance for promoting educational equity. The networked intelligent language laboratory breaks the limitations of geography and time, enabling the dissemination and sharing of high-quality language education resources in a wider range. Both learners in remote and developed areas have access to rich and diverse language learning resources and advanced teaching methods, narrowing the gap in educational resources caused by geographical differences, promoting the realisation of social and educational equity, and providing strong support for the construction of a learning society and the enhancement of language literacy for all.

2. The Development of Networked Intelligent Language Laboratory

2.1. Limitations of Traditional Language Laboratories

Traditional language laboratories mostly rely on audio and video recording equipment, and teaching resource carriers such as audio and video tapes suffer from problems such as limited storage, inconvenient updating, and difficulty in rapid retrieval. The teaching process is often a one-way transmission, lack of interactivity and flexibility, difficult to stimulate students' initiative and creativity, and unable to fully meet the pursuit of diversified and personalised teaching in modern language education.

2.2. The Rise of Digital Network Language Laboratory

2.2.1. Combination of Computer Technology and Analogue Equipment

In the early stage, when computer technology began to be initially integrated into the traditional analogue language laboratory, it gradually showed some positive changes and improvements in teaching management. At the level of teaching resource management, the digital management of teaching resources was initially achieved with the help of computers' storage and data processing capabilities. This means that teaching resources that used to exist in the form of magnetic tapes and paper materials, such as audio demonstrations, grammar documents, reading materials, etc., can be converted into digital format for storage and recall. Teachers are thus provided with greater convenience in arranging the teaching content. Instead of being confined to the tedious search and organisation of physical materials, teachers can quickly locate and integrate the various teaching resources they need and efficiently plan the teaching content structure of each lesson through computer operations.

There are also new ways to monitor students' learning progress. Teachers can use computer systems to record students' learning operations in the laboratory, such as the time students use specific language learning software, the number of completed exercises and the correct rate of information, so as to have a more intuitive and systematic understanding of the students' learning progress [1]. However, it cannot be ignored that the integration of technology in this period is only the beginning and is still at a relatively early stage. There are obvious limitations in the degree of digitisation of teaching resources, and many complex teaching resources, such as multimedia language scene simulation resources with interactivity, are difficult to be digitally transformed in a complete way. Moreover, the digitised resources have many deficiencies in terms of quality, compatibility and convenience of updating, which can't give full play to the full potential of computer technology in language teaching management, and there

is still a long way to go before a highly intelligent and efficient language teaching management system can be constructed.

2.2.2. The Promotion of Multimedia Era

The vigorous development of multimedia technology has prompted language laboratories to enter a new stage. The wave of multimedia technology development, like a strong impetus, has strongly prompted traditional language laboratories to enter a brand new stage of development. In this process of change, a huge amount of rich and diverse multimedia teaching resources such as images, audio and video have been widely integrated into the teaching system of language laboratories. The integration of multimedia teaching resources has completely broken the limitations of the single and boring form of teaching content presentation in the past. Instead of relying only on textbooks and simple voice explanations to teach language knowledge, vivid images can visually display the scenes, characters, things and other elements depicted in the language, making students feel as if they were in the realm of reality; clear and accurate audio can provide standard pronunciation demonstrations, real-life dialogues, and beautiful recitation examples, making students get the purest language stimulation in the sense of hearing. Clear and accurate audio can provide standard pronunciation demonstrations, real language dialogue situations and beautiful language recitation examples, so that students can get the purest language stimulation in their sense of hearing; and the wonderful and fluent video can show the actual use of the language, cultural background and storyline in an all-rounded way, which greatly enhances the interest and attraction of the teaching content.

The integration of multimedia teaching resources also brings significant cost-effectiveness. In the past, if language laboratories want to obtain rich teaching resources, they often need to purchase a large number of physical teaching aids and materials, such as expensive language learning tapes, video tapes, and all kinds of paper books and pictures, etc., and the renewal of resources is not only time-consuming and labour-intensive, but also costly. However, with the intervention of multimedia technology, teachers can obtain high-quality multimedia courseware, teaching videos and audio materials from all over the world free of charge or at a low cost through convenient online download channels, and at the same time, teachers can also use the existing multimedia production software to create their own personalised multimedia teaching resources according to the actual needs of teaching. The multimedia courseware downloaded or created through the Internet can be used repeatedly, whether in different teaching rounds of the same class, or in the process of language teaching of different grades and specialities, it can be recycled many times without the need to prepare or purchase it again each time as in the case of the traditional teaching resources, which largely improves the overall efficiency of the use of teaching resources, and provides a solid guarantee for the sustainable development of language education. sustainable development.

2.2.3. Digital Speech Era Based on 3C Technology

In the era of networked intelligence, 3C technologies (computer, communication and consumer electronics) have been deeply integrated into the field of language education with their powerful influence, especially in the construction and innovation of language laboratories, which plays a crucial role. With its excellent data processing capability, efficient storage function and intelligent software application, computer technology provides a solid technical cornerstone for the digital conversion of language teaching resources [2]. It can accurately convert traditional paper textbooks, audio tapes, video tapes and other kinds of teaching materials into digital format, whether it is text, images, audio or video, which can be orderly organised, categorised and stored in a huge database for easy recall and updating at any time.

The rapid development of communication technology has built a high-speed and stable bridge for the transmission of digital resources in language laboratories. With advanced network protocols and infrastructure, both wired and wireless networks can ensure the rapid and

accurate transfer of digital teaching resources between different devices and different locations. Whether in classrooms, libraries and dormitories inside the campus, or outside the campus at home or in public places, wherever there is network signal coverage, students can smoothly access the teaching resources in the language labs, thus realising unimpeded transmission of learning resources.

The widespread popularity of consumer electronics technology has further enriched the way students interact with digital resources in language labs. Diversified consumer electronic products such as smart phones, tablet PCs and smart wearable devices have become convenient terminals for students to access the language learning platform. These devices are equipped with convenient operation interfaces, powerful multimedia display functions and flexible mobility, allowing students to start the learning process anytime and anywhere according to their own needs and preferences. Thanks to the deep integration and synergy of the 3C technologies, the language lab is completely digitalised. This digital transformation gives students unprecedented autonomy in their learning. In terms of learning content, students are no longer limited to a uniform textbook and a fixed curriculum, but can freely browse and select language courses of different levels of difficulty and a wide range of topics on the language learning platform according to their own language proficiency, interests and learning goals. Whether it's a basic everyday language course, a professional business language course, or a culturally specific literature course, they can easily access them. For example, a student who is interested in travelling can specially choose the Travel English course to learn the communication terms and cultural customs in different countries; while a student who is preparing to participate in business negotiation can focus on the Business English course to improve his/her professional vocabulary, negotiation skills and communication etiquette in the field of business. In terms of study time, students are completely free from the constraints of traditional classroom schedules. Whether it is early in the morning or late at night, on weekdays or holidays, as long as students have the will and energy to learn, they can log on to the language learning platform at any time to start their learning journey. For example, busy commuters can make use of their fragmented commuting time to learn a few words and practice an oral dialogue on the underground or bus through their mobile phones, while students who are used to studying late at night can delve into their grammar knowledge and practice writing in a quiet environment. Students also have a wide range of choices when it comes to where they can study. Whether it's a cosy study room at home, a study room at school, or an outdoor park bench or a corner of a café, as long as the network signal can be covered, it can become a place for students to learn language. The autonomy and borderlessness of the learning process greatly stimulate students' learning enthusiasm and initiative, meet the personalised learning needs of different groups of students, open up a new world for language education in the digital age, and lay a solid foundation for cultivating linguistic talents with a global outlook, independent learning ability and cross-cultural communication ability.

3. Application of Networked Intelligent Language Laboratory in Language Education

3.1. Teaching Mode

3.1.1. Broadcast Teaching Mode

As an innovative teaching mode integrating analogue language laboratory and network function, the broadcast teaching mode plays a unique and important role in the field of modern language education. It cleverly integrates the advantages of audio broadcasting of traditional analogue language labs and the powerful resource sharing and transmission capability of network technology to build an efficient and convenient language teaching platform. In this mode of teaching, teachers are empowered to disseminate teaching resources. With the help of

advanced multimedia equipment and network connection, teachers can easily broadcast all kinds of carefully prepared teaching audio and video materials to all students. This function is particularly significant in the teaching of basic language courses. For example, when teaching phonetics, teachers can broadcast standard pronunciation demonstrations recorded by professional linguists, which cover the details of pronunciation of various vowels and consonants, as well as the demonstration of pronunciation skills such as alliteration, weak pronunciation, intonation, etc., so that the students can clearly hear the most pure and accurate pronunciation examples, which provide a reliable reference standard for their own pronunciation training. In the grammar explanation session, teachers can play vivid and imaginative grammar explanation videos. These videos may be animated and analysed in various forms, presenting the complex and abstract grammar rules to the students in an in-depth and simple way, so that they can understand more intuitively the structure and usage of grammar as well as the application scenarios in actual language communication. The broadcast teaching mode also has a very practical teacher-student dialogue function, which greatly enhances the interactivity and real-time of the teaching process. Teachers can use this function to ask students questions at any time, whether it is about the pronunciation points or grammar rules that have just been explained, and can quickly check the students' mastery. For example, after playing an audio pronunciation demonstration, the teacher can randomly name students to imitate the pronunciation, and listen to the students' pronunciation performance through the intercom function, and give timely correction and guidance. For students, if they encounter any doubts or difficulties during the learning process, they can also give feedback to the teacher quickly through the intercom function. For example, if a student has a question about a particular grammar point while watching a grammar video, he or she can immediately press the intercom button to ask the teacher a question, and the teacher will be able to answer the question for the student at the first time, thus ensuring that the student's learning process will not be impeded due to the accumulation of difficult questions. Through this kind of efficient interaction between teachers and students, teachers can more accurately grasp the learning situation of each student, including learning progress, knowledge mastery, learning difficulties and other information, which provides a solid data base and decision-making basis for the subsequent adjustment of the teaching plan, the improvement of teaching methodology and personalised teaching counselling, and vigorously promotes the improvement of the quality of the teaching of the basic language course and the optimisation of the teaching effect.

3.1.2. Network Teaching Mode

Relying on advanced information technology, the network teaching mode has carefully constructed a highly professional and fully functional language learning network environment. It fully integrates the advantages of online course platforms, learning management systems and other digital tools, opening up a whole new world for language education. In the teaching practice of foreign language courses in colleges and universities, this online teaching mode has shown excellent performance. Teachers can conveniently assign a variety of homework tasks with the help of the powerful online course platform. These assignments are no longer limited to traditional written exercises, but can include audio recording assignments, which require students to read aloud foreign language chapters and submit recordings to exercise their oral expression skills; video production assignments, which allow students to create a short video around a specific foreign language theme, demonstrating their comprehensive use of foreign language knowledge and creative expression; and online reading comprehension assignments, which provide a rich variety of foreign language articles through the platform, and set targeted comprehension questions to test the comprehension of foreign language articles. It is also possible to assign online reading comprehension assignments, providing rich resources of foreign language articles through the platform and setting targeted comprehension questions to test students' reading level and analytical ability. In organising discussions, teachers can

launch various discussion forums, for example, character analysis of a classic foreign language literary work or foreign language reports of an international hot event. Students can cross the limit of time and space to express their opinions, share their learning experience and exchange different points of view in the discussion forum anytime and anywhere. This kind of interactive discussion can not only deepen students' understanding of language knowledge, but also cultivate their critical thinking and intercultural communication skills. Teachers can also actively participate in the discussion, give guidance, comment and supplement at the right time, promote the discussion in depth, and form a good atmosphere of teacher-student interaction and student-student interaction.

Online testing is one of the highlights of the online teaching mode. Teachers can make use of the learning management system to flexibly design various types of online test papers, including multiple choice questions, fill in the blanks, translation questions, writing questions and so on, according to the teaching progress and teaching objectives. These tests can be set up with a timed function to simulate real exam scenarios and develop students' time management and test-taking skills. After the tests are completed, the system can automatically correct the objective questions and instantly generate statistical analysis reports on the results, providing teachers with detailed data on students' learning, such as the degree of mastery of each knowledge point and the distribution of students' grades, etc., which can help teachers accurately understand the learning effect of the students, so that they can adjust their teaching strategies in a timely manner. For students, this online teaching mode has more opportunities for independent learning and active participation in the teaching process. Students can easily submit their assignments on the platform, whether it is uploading electronic files of written assignments, or submitting oral and video assignments. In the process of participating in discussions, students can be exposed to the diversified views of students from different backgrounds, broaden their horizons of thinking, and at the same time can get targeted learning suggestions from the teacher's feedback, so as to continuously improve their language proficiency and knowledge level. The function of checking results enables students to know their own learning results in a timely manner, make clear their own strengths and weaknesses, so as to formulate a follow-up learning plan in a targeted manner, and further improve the autonomy and effectiveness of learning.

3.1.3. Self-study on-demand teaching mode

Students can independently broadcast learning resources according to their own learning needs and progress. For example, when preparing for language exams, students can target their weak points, such as listening, speaking, writing, etc., and broadcast the corresponding special training courses or learning materials to achieve personalised learning.

3.2. Specific Application Scenarios

3.2.1. Primary and Secondary Education and Teaching

In the embodiment of the value of language teaching in primary and secondary schools, a rich corpus support is provided for the analysis of students' compositions [3]. For example, students can query the use of different vocabulary and sentence patterns in excellent works through the corpus, cultivate the sensitivity to language and the ability to use it, and also help to cultivate the students' spirit of questioning and the ability to find out the problems, and improve their language literacy.

In specific applications, for example, in speech teaching, with the help of speech recognition software, students can carry out Mandarin pronunciation training, and the software can accurately identify pronunciation errors and give corrective suggestions to improve students' Mandarin proficiency. In vocabulary teaching, the corpus is used to analyse the semantic rhymes of vocabulary, help students understand the emotional colour and usage differences of vocabulary in different contexts, and enrich their vocabulary and vocabulary use ability. In

terms of grammar teaching, the use of big data to analyse the characteristics of grammar use in actual texts, such as frequency, collocation, etc., allows students to grasp the rules of grammar more intuitively and improve the accuracy of grammar use.

3.2.2. Foreign Language Teaching in Colleges and Universities

Intelligent education support system research, in the intelligent foreign language teaching platform, integrating a variety of foreign language learning resources, such as foreign language movies, TV dramas, news broadcasts, etc., to create an immersive learning environment, as well as intelligent translation, grammatical analysis and other functions, which is convenient for students to learn independently [4]. In the intelligent assessment and personalised feedback mechanism, through the collection and analysis of data such as homework, tests, classroom performance, etc. in the process of student learning, it provides students with personalised learning assessment reports and feedback suggestions, such as recommending special exercises for students' weak grammar points. In the analysis and application of education big data, the learning behaviours and preferences of student groups are analysed to provide a basis for the optimisation of teaching content and the adjustment of curriculum, for example, adjusting the teaching focus of cultural courses according to the level of students' interest in different foreign language courses.

In the cognition and methodology of multilingual intelligent education teaching, in the research of cross-cultural communication and learning strategies, the use of online platforms to carry out cross-cultural communication activities, such as the online communication programme for international students, allows students to learn about the habits of language use and ways of thinking in different cultures in practice, and enhances cross-cultural communicative competence. In the professional development of teachers and the use of technology, teachers learn how to better integrate networked intelligent language laboratory technology into teaching by attending online training and seminars, such as using virtual reality technology to create foreign language contextualised teaching. In innovative teaching content and technology use, combining emerging technologies such as artificial intelligence to create foreign language teaching stories, songs and other innovative teaching content to improve students' learning interest and participation [5].

Intelligent language education governance, in the intelligent education management system research, the development of foreign language teaching management software, to achieve automation and intelligence of course scheduling, teacher allocation, student performance management, etc., to improve management efficiency. In the analysis and optimisation of multilingual education policy, using big data to analyse the implementation effect of multilingual education policy, such as the impact of different language enrolment policies on students' enrolment, to provide data support for the adjustment and optimisation of the policy.

4. Advantages of Networked Intelligent Language Laboratory

4.1. Technological Advantages

The in-depth application of Internet technology adopts advanced Internet technology to achieve the comprehensive digitalisation of the voice classroom. For example, the voice teaching system constructed based on IP network can ensure the efficiency and stability of voice transmission and facilitate resource sharing. The voice teaching resources of different regions and schools can circulate with each other, breaking the situation of uneven distribution of educational resources.

In the construction of voice learning LAN, reasonable selection of network backbone equipment such as high-performance switches, routers, etc., as well as high-quality transmission media such as optical fibre, to ensure fast and accurate transmission of voice data. This provides a

solid technical guarantee for real-time voice teaching and interactive communication, reduces problems such as voice delay and lag, and improves the learning experience.

4.2. Functional Advantages

4.2.1. Personalised learning experience

Students are able to customise their learning plans according to their own learning pace, interests and learning goals. For example, students can choose their favourite language learning materials, such as movies, novels, songs, etc., while the system can intelligently recommend suitable learning contents and learning paths according to students' learning history and performance, truly realising tailor-made teaching [6].

4.2.2. Rich Experimental Resource Reserve

The digital teaching materials cover a huge amount of language learning materials, including audio, video, text and other materials in different languages, different difficulty levels and different topics []. Both beginners and advanced learners can find learning resources to meet their needs, and with the continuous updating of online resources, the teaching resources of the lab can also keep up with the times.

4.2.3. Scientific and accurate testing and assessment system

The implementation of digital online proficiency test can adjust the difficulty of the questions in real time according to the students' answers, so as to accurately assess the students' language proficiency. The implementation of the 7×24-hour real-time dynamic assessment function allows students to understand their learning progress and level changes at any time, and teachers can also grasp the learning dynamics of students in a timely manner, providing a basis for teaching adjustments.

4.2.4. Highly Integrated Teaching Functions

It integrates a variety of functions of traditional analog speech labs, such as broadcast teaching, group teaching, teacher-student dialogue, student-student dialogue, etc. On a networked intelligent language laboratory platform, teachers can flexibly switch teaching modes to meet the needs of different teaching sessions [7]. For example, the group dialogue mode is used in the language listening and speaking training session, and the broadcast teaching mode is used in the knowledge explanation session to improve the flexibility and effectiveness of teaching.

5. Development Prospects of Networked Intelligent Language Laboratory

5.1. Technological Innovation

The continuous upgrading of network technology continues to optimise digital network technology, increase network transmission rate and bandwidth, further improve the transmission quality of voice, video and other teaching resources, and reduce transmission delay. For example, the application of 5G or even more advanced network technologies in language labs in the future will make high-definition, real-time remote language teaching interaction the norm.

The trend of multi-technology integration is to strengthen the in-depth combination with advanced network technologies such as virtual reality (VR), augmented reality (AR), artificial intelligence (AI), and so on [8]. For example, the use of VR technology to create realistic language learning scenarios, such as the streets and alleys of foreign language countries, business offices, etc., so that students can feel the language environment in an immersive environment; with the help of AI technology to achieve intelligent language tutoring, according to the student's learning situation to automatically generate a personalised learning programme.

Intelligent expansion of software functions and continuous upgrading of language lab software to make it more powerful and easier to operate. For example, the development of learning software with intelligent error correction, intelligent translation, intelligent voice interaction and other functions allows students to get more timely and accurate help in the learning process, just like having an exclusive language learning assistant.

5.2. Teaching Application Expansion

The enrichment and updating of the teaching resource base, the continuous expansion of the content of the teaching resource base, covering more languages, more cultural backgrounds, more interdisciplinary language learning resources [9]. For example, increase the learning materials of niche languages and the learning content of the integration of language with history, literature, science and technology and other disciplines, so as to meet students' diversified and interdisciplinary learning needs.

Compatibility enhancement of multimedia devices, strengthening the interface compatibility with various new multimedia devices, and adapting to emerging mediums for carrying resources such as holographic projection and smart wearable devices. For example, when holographic projection technology becomes popular, students can watch foreign language theatre performances and speeches through holographic projection, enhancing the fun and immersion of learning.

The depth of network teaching is being promoted to further expand the breadth and depth of network teaching and to achieve the sharing of high-quality educational resources on a global scale [10]. For example, the establishment of an international language education alliance network platform, excellent teachers from various countries can offer courses on the platform, and students can freely choose courses from different countries and styles for learning, promoting international language education exchanges and cooperation.

5.3. Scientific Management

The system of equipment maintenance and personnel training is perfect, and a sound mechanism for daily maintenance of equipment is established to regularly check, maintain and repair hardware equipment such as servers, switches and terminal equipment of the networked intelligent language laboratory to ensure the normal operation of the equipment. At the same time, the professionalism training of management personnel is strengthened to improve their knowledge and skills in network technology, equipment management, security maintenance, etc., so as to provide manpower guarantee for the stable operation of the laboratory [11].

The standardisation and refinement of the management system, the development of perfect rules and regulations, including laboratory use norms, resource management provisions, safety management system and so on. For example, the rights and obligations of students and teachers in the process of laboratory use are clarified, the uploading, downloading and use process of teaching resources are regulated, and the network security protection measures are strengthened to prevent data leakage and malicious attacks, so as to provide a comprehensive and detailed theoretical basis and behavioural norms for the management of networked intelligent language laboratories.

6. Conclusion

The application of networked intelligent language labs in language education has achieved remarkable results, and from the perspective of its development history, the continuous progress of technology has pushed language labs from traditional to intelligent. In terms of teaching application, both the teaching mode and the specific application scenarios present diversified and personalised features, and its technological and functional advantages also

provide strong support for the improvement of the quality of language education. Looking into the future, with the continuous advancement of technological innovation, teaching application expansion and scientific management, networked intelligent language laboratories will certainly play a more important role in the field of language education, laying a solid foundation for cultivating linguistic talents with global vision and cross-cultural communication ability, and becoming the core force to promote the modernisation process of language education.

To sum up, by building a professional network environment and making full use of the functions of the online course platform and learning management system, the network teaching mode greatly improves the teaching interactivity and teaching effect in the teaching of foreign language courses in colleges and universities, and provides a powerful support and guarantee for the cultivation of high-quality foreign language talents adapted to the needs of the times.

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