The Predicament and Solution of Piano Performance Teaching in Universities under the Background of "Internet"

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Abstract: This article analyzes the traditional teaching modes of piano performance in universities and their characteristics, and reveals the shortcomings of these modes in the era of "internet plus". Based on this, the article deeply discusses how to reform and innovate the piano playing teaching in universities under the background of "internet plus". By investigating the application of "internet plus" technology in educational practice, this article discusses the ways to improve the teaching effect of piano performance by means of online teaching platform and virtual reality technology, and discusses the application of intelligent teaching AIDS in piano skill training and repertoire analysis. On this basis, this article puts forward a new mode of integrating online and offline teaching, aiming at improving the interaction between educators and learners and students' practical ability. Through the integration of online and offline teaching modes, the flexibility and interactivity of teaching can be improved. Meanwhile, teachers need to adjust their roles and teaching strategies to adapt to the new teaching environment. In the future, teaching will be more diversified and personalized, and teachers should actively explore and practice new teaching modes and methods, so as to contribute to cultivating more piano players with innovative spirit and practical ability.

1. Introduction

Nowadays, "internet plus" has become a familiar concept. It represents the deep integration of Internet and traditional industries [1]. Through the innovative application of information technology, this combination helps all industries to achieve transformation and upgrading, and improve efficiency and service level. From medical care and education to transportation and finance, the tentacles of the Internet are everywhere, bringing unprecedented convenience and richness to people's lives [2]. In the field of education, the application of "internet plus" technology triggered the revolution of teaching mode [3]. Online teaching, distance education, intelligent tutoring and other emerging ways have developed rapidly, breaking the time and space constraints of learning and improving the interactive and personalized level of teaching [4].

Piano performance teaching in universities is a part of music education. It has always followed the relatively traditional teaching mode. This model is usually based on one-on-one or small class teaching, focusing on the teaching of skills and the rehearsal of tracks, emphasizing the demonstration of teachers and the imitation of students [5]. Although this model plays an irreplaceable role in cultivating students' basic skills and musical literacy, it also exposes some limitations [6]. The current education system has problems such as uneven distribution of teaching resources, insufficient cultivation of students' practical abilities, and a single way of interaction between educators and learners.

The arrival of the "internet plus" era has brought new development opportunities and challenges to piano playing teaching in universities. On the one hand, "internet plus" technology provides a more diverse and convenient means for teaching [7]. These means can greatly enrich the teaching methods and improve the teaching effect. On the other hand, the traditional teaching mode also needs to be constantly updated to meet the learning needs of students in the new era [8]. Therefore, it is very important to promote the teaching reform of piano performance in universities under the background of "internet plus".

The purpose of this article is to explore the difficulties and solutions of piano performance teaching in universities under the background of "internet plus". The purpose of this study is to analyze the current situation and problems of piano performance teaching in universities, and combine the characteristics and advantages of "internet plus" technology to put forward practical teaching reform plans and suggestions.

2. The dilemma of piano performance teaching in universities

Under the wave of "internet plus", the inadaptability of the traditional teaching mode of piano performance has become increasingly prominent. This model mainly relies on offline face-to-face teaching. Although this ensures the real-time interaction of teaching, it is subject to time and space factors. The widespread popularity of the Internet and technological progress make students more inclined to acquire knowledge through the Internet and pursue more flexible learning methods. Traditional piano teaching is insufficient in this respect, and it is difficult to meet the diverse learning needs of students.

In the teaching of piano performance in universities, the uneven distribution of resources and the limitations of teacher-student interaction have become significant problems. In some universities, due to the limited faculty, excellent piano teacher resources are concentrated in a few classes or students. This makes it difficult for other students to obtain high-quality teaching guidance. The traditional classroom teaching mode also makes the interaction between educators and learners limited by time and space. It is difficult for students to get timely feedback and help from teachers after class. This unbalanced distribution of teaching resources and the limited interaction between educators and learners have seriously affected students' learning effect.

The lack of technical application and teaching innovation are also the difficulties faced by piano performance teaching in universities. Although information technology has been widely used in the field of education, its application in piano performance teaching is still limited. Some universities fail to make full use of modern teaching equipment due to financial and technical reasons, resulting in single and outdated teaching methods. Some teachers are also unable to innovate in teaching. They lack understanding and mastery of new technology, and it is difficult to effectively combine it with piano teaching.

The decline of students' interest in learning and the lack of practical ability can not be ignored. Single and boring teaching methods can easily lead to the decline of students' interest. Due to the lack of sufficient practical opportunities and platforms, it is difficult for students to effectively improve their practical ability. Therefore, under the background of "internet plus", the teaching of piano performance in universities is in urgent need of reform and innovation to adapt to the development of the times and the needs of students.

3. Exploration on the application of "internet plus" technology in piano performance teaching in universities

The application of technology "internet plus" in the field of education has been fruitful, which has brought revolutionary changes to the teaching mode. In the tide of educational informatization, many universities began to try to integrate Internet technology into classroom teaching. In this way, the sharing of teaching resources, the diversification of teaching methods and the intelligence of teaching management are realized. The effect of integrating Internet technology into classroom teaching in universities is shown in Table 1. The successful examples in Table 1 provide valuable reference for the application of network technology in piano teaching.

As an important tool of "internet plus" technology, online teaching platform. It opens a new chapter for piano teaching. It allows teachers to upload teaching videos and courseware, so that students can review and teach themselves at any time, breaking the time-space boundary of learning. The platform also provides real-time interactive function. Educators and learners can communicate remotely through video and voice, so as to solve the problems encountered by students in learning in time. In addition, the introduction of virtual reality technology has also brought a brand-new

experience to piano playing teaching. Through virtual reality equipment, students seem to be in the performance scene. This enhances the attraction and fun of learning.

Table 1 Effectiveness of Integrating Internet Technology into Classroom Teaching in Higher Education

Item	Overview of Effectiveness	Specific Application Cases
Sharing of Teaching Resources	Enabling cross-time and space dissemination of resources, enhancing resource utilization efficiency	Online course platforms, such as MOOCs, providing global sharing of teaching resources
Diversification of Teaching Methods	Integrating online and offline teaching, enhancing teaching interactivity and flexibility	Blended teaching modes, combining live lectures, online discussions, and offline practices
Intelligentization of Teaching Management	Utilizing data analysis to optimize teaching management, improving decision-making efficiency and accuracy	Intelligent teaching management systems, providing decision support for teaching management through data analysis

Intelligent teaching AIDS also play an important role in piano skill training and repertoire analysis. Some intelligent piano practice software can give targeted feedback and suggestions according to the students' performance, so as to help students master playing skills better. These softwares can also provide the function of track analysis, help students to deeply understand the structure and connotation of tracks and improve the expressive force of performance. In order to make the best use of internet plus technology, we can create an online and offline teaching model. On-line, teachers can use online teaching platform and intelligent teaching AIDS for distance teaching and counseling. Online, teachers can organize students to practice and communicate face to face, and enhance students' practical ability and teamwork ability.

4. Strategies and suggestions on piano playing teaching reform in universities under the background of "internet plus"

After discussing many difficult problems in piano performance teaching in universities under the environment of "internet plus" in the last section, this section puts forward a series of teaching reform schemes aimed at solving the problems. The first strategy is to give full play to the advantages of internet technology, realize the deep integration of online and offline teaching, and build a flexible and diverse teaching structure. The online teaching platform should provide sufficient teaching resources and interactive tools to facilitate students to carry out self-study and practice at any time. Offline teaching should focus on practical guidance and in-depth discussion in order to improve the teaching effect in an all-round way. Through the online teaching platform, students can study and practice independently anytime and anywhere; The offline class focuses on practical guidance and in-depth communication, and comprehensively improves the teaching effect.
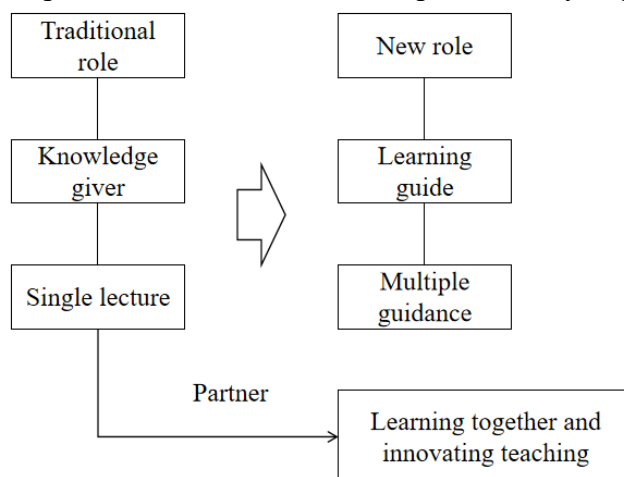

Figure 1 Schematic diagram of teacher's teaching role transformation

In the teaching reform, the change of teachers' role is very important. Teachers need to change from traditional knowledge givers to guides and collaborators in students' learning. The teacher's teaching role changes as shown in Figure 1.

The teacher training system organizes professional training and teaching seminars to help teachers master modern teaching techniques and methods, enhance their ability to use online teaching platforms and intelligent auxiliary tools, and thus enhance the interactivity and personalization of teaching. The practice of teaching reform encourages teachers to continuously innovate teaching methods to meet the educational development needs of the "Internet plus" era.

In order to ensure the effectiveness and sustainability of teaching reform, it is imperative to reform the teaching evaluation system, as shown in Table 2. The evaluation system covers students' online learning performance, practical achievements, teamwork and other dimensions.

Table 2 Comprehensive Teaching Evaluation System Construction Table

Evaluation Dimension	Overview of Evaluation Content	Specific Evaluation Indicators
Online Learning Performance	Students' participation, progress, homework completion, interactive discussion performance, etc. in online courses	1. Login frequency and duration. 2. Course completion rate. 3. Homework submission rate and quality. 4. Activity and contribution in online discussions
Practical Outcomes	Quality, innovation, and practical application abilities of students' outcomes in experiments, projects, internships, etc.	1. Quality of experiment reports or project outcomes. 2. Embodiment of innovative points. 3. Effectiveness of practical application or problem-solving. 4. Attitude and effort during the practical process
Team Collaboration	Students' cooperation attitude, communication skills, team contribution, and collaboration effectiveness in team projects	1. Attitude and enthusiasm for team cooperation. 2. Communication skills and coordination. 3. Individual contribution within the team. 4. Overall team outcomes and collaboration effectiveness
Innovative Thinking	Innovative thinking, problem-solving abilities, and critical thinking demonstrated by students during the learning process	1. Ability to propose new viewpoints or solutions. 2. Problem analysis and solving abilities. 3. Demonstration of critical thinking and independent thinking. 4. Attempts and outcomes of innovative practices
Self-Management Ability	Students' performance in time management, learning plan formulation and execution, self-motivation, etc.	1. Time management and learning efficiency. 2. Formulation and execution of learning plans. 3. Self-motivation and self-discipline. 4. Goal setting and achievement status

The smooth implementation of teaching reform is inseparable from the support of external safeguard measures. The government and educational institutions should provide more policy support and resources: funds, equipment and technical support. In order to help the reform of piano performance teaching in universities. The deepening of school enterprise cooperation has injected new development momentum into teaching reform by introducing industry experts and enterprise resources. The implementation of these external safeguards can create favorable conditions and environment for the reform of piano playing teaching in universities. It can promote the smooth progress of teaching reform and cultivate more excellent piano players who can adapt to the development of "internet plus" era.

5. Conclusions

In the context of "internet plus", this study makes a comprehensive analysis of piano playing teaching in universities, and accordingly puts forward a series of specific reform measures and suggestions. It is found that "internet plus" technology brings new opportunities and challenges to piano playing teaching in universities. By integrating online and offline teaching modes, the flexibility and interactivity of teaching can be effectively improved to meet the diverse learning needs of students.

Looking forward to the future of "internet plus" era, piano playing teaching in universities is expected to move towards a more diversified and personalized road. With the continuous development of technology and the deepening of application scenarios, modern teaching tools such as online teaching platform and virtual reality technology will be more widely used in piano teaching. This provides more abundant and convenient teaching resources for educators and learners. Teachers' teaching roles and methods will also undergo fundamental changes. They will become guides and collaborators of students' learning, explore innovative teaching paths together, and stimulate students' interest and creativity. "internet plus" has brought unprecedented development opportunities for piano performance teaching in universities. We should actively embrace this change, constantly explore and practice new teaching modes and methods, and contribute to training more piano players with innovative spirit and practical ability.

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