

The Challenges and Breakthroughs of Online Music Education from the Perspective of International Education: Based on the Learning Experience of Music Majors

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ABSTRACT

Against the backdrop of global digital transformation, online music education has gradually become an important form of international music education exchange, breaking through the limitations of time and space and promoting the cross-border flow of music educational resources. However, from the perspective of music majors' learning experience, online music education is facing multiple challenges such as the loss of immersive teaching scenes, the barriers to skill interaction feedback, the differences in international educational concepts, and the imbalance of digital resource allocation. This paper takes the learning experience of music majors as the research focus, analyzes the specific performance of the above challenges in practical teaching, and explores breakthrough paths from the aspects of technological empowerment, curriculum system optimization, and inter-institutional cooperation. It is proposed that by building an intelligent interactive teaching platform, designing a "localization + internationalization" integrated curriculum, and establishing an international online music education alliance, the quality of online music education can be improved, and it can better serve the cultivation of music talents with international perspectives and professional skills.

KEYWORDS

Digital transformation; International education; Online music education; Music majors; Learning experience

1 Introduction

1.1 Research background

In the context of the rapid development of digital technologies such as artificial intelligence, big data, and 5G, the global education field is undergoing a profound digital transformation. Online education, as an important carrier of this transformation, has been widely applied in various disciplines, and music education, which has long relied on offline face-to-face teaching, is also accelerating its integration with online forms. Especially in the field of international education, online music education has realized cross-border sharing of high-quality music courses, expert lectures, and performance exchanges through virtual classrooms and digital platforms, which has played a positive role in promoting the internationalization of music education and expanding the academic horizons of music majors.

However, compared with traditional offline music education, online music education has obvious differences in teaching methods, interaction modes, and resource presentation. Music learning, especially professional music skills training (such as instrument performance, vocal singing, etc.), has high requirements for on-site demonstration, real-time guidance, and sensory experience, which makes online music education face unique difficulties in meeting the professional learning needs of music majors. At the same time, due to differences in educational systems, cultural backgrounds, and digital infrastructure among countries, music majors' learning experience in international online music education shows obvious differences and contradictions, which restricts the further development of online music education in the international education field.

1.2 Research significance

Theoretically, this study enriches the research results of online education in the field of music discipline, explores the particularity of music education in the digital transformation process, and provides a theoretical reference for understanding the interaction mechanism between international online music education and students' learning experience. Practically, by analyzing the challenges faced by music majors in online music learning and putting forward targeted breakthrough strategies, it can provide practical guidance for music educational institutions, teachers, and platform developers to optimize online music education models, improve teaching quality, and promote the healthy development of international online music education.

1.3 Research questions

(1) What are the specific challenges faced by music majors in international online music education in terms of learning

experience?

(2) What breakthrough paths can be adopted to solve these challenges and improve the effectiveness of international online music education?

2 Literature review

2.1 Research on digital transformation and online education

Digital transformation has promoted the innovation of education forms, and online education has become a hot topic in educational research. Scholars at home and abroad have discussed the technical support, teaching models, and development trends of online education. For example, some studies point out that big data and artificial intelligence can realize personalized learning recommendation and intelligent teaching evaluation in online education, improving the efficiency of education. However, there are also studies that believe that the lack of emotional interaction and learning supervision in online education may affect the learning effect, especially for disciplines with strong practicality^[1].

2.2 Research on online music education

In the field of music education, relevant research mainly focuses on the application of digital technologies (such as virtual reality, music software) in music teaching, the design of online music^[2] courses, and the impact on students' music learning motivation. Some studies show that online music education can expand students' access to music resources and provide more flexible learning opportunities, but in terms of instrumental performance teaching, the limitations of online interaction make it difficult to replace offline teaching^[3]. In addition, the internationalization of online music education involves cultural differences in music aesthetics and educational concepts, which brings new research topics to the adaptation of online music courses.

2.3 Research on learning experience of music majors

The learning experience of music majors includes cognitive, emotional, and behavioral dimensions, involving their perception of teaching content, interaction with teachers and peers, and mastery of professional skills. Existing studies have explored the influence of teaching methods, curriculum settings, and learning environments on the learning experience of music majors, but there is a lack of in-depth research on the learning experience in the specific context of international online music education^[4].

To sum up, although the existing research has laid a certain foundation for the study of online music education, there is still a lack of systematic discussion on the challenges faced by international online music education from the perspective of music majors' learning experience and the corresponding breakthrough strategies, which is the focus of this paper.

3 Challenges of online music education in international education from the perspective of music majors' learning experience

3.1 The loss of immersive teaching scenes and the weakening of sensory experience

Music learning requires a strong sense of immersion, including the perception of music atmosphere, the observation of teachers' performance details, and the experience of on-site music interaction. In international online music education, due to the limitations of network transmission and video equipment, the sense of presence in teaching scenes is seriously insufficient. For example, in orchestral performance courses, music majors cannot feel the on-site coordination and resonance of various instruments, making it difficult to accurately grasp the overall style and expression of music works. In vocal teaching, the loss of sound quality in online transmission makes it difficult for students to distinguish the subtle changes in teachers' vocal techniques, such as breath control and resonance position, which affects the learning effect of professional skills.

In addition, different cultural backgrounds lead to differences in the understanding of music scenes. For example, in the study of traditional music from different countries, online teaching can only present simple audio and video materials, but cannot restore the cultural context and scene atmosphere in which the music is located, resulting in music majors' one-sided understanding of international music culture and affecting the improvement of their cross-cultural music literacy.

3.2 Barriers to skill interaction feedback and the ineffectiveness of teaching guidance

Real-time interaction and accurate feedback are crucial in professional music teaching. In offline teaching, teachers can timely correct students' wrong playing postures, incorrect rhythm mastery, and inappropriate emotional expression through direct observation and on-site demonstration. However, in international online music education, due to network delay, video resolution, and other factors, the interaction between teachers and students has obvious barriers. For example, when a music major plays a piano piece online, the teacher cannot directly adjust the student's hand shape and touch strength, and can only make limited guidance through video observation, which is easy to lead to the consolidation of wrong skills.

Moreover, due to the differences in time zones between countries, international online music courses often adopt asynchronous teaching methods such as pre-recorded videos, which makes it impossible for students to get timely answers to their questions in the learning process, and the feedback cycle of homework and practice is long, which affects the continuity and enthusiasm of learning.

3.3 Differences in international educational concepts and the conflict of learning adaptation

Different countries have formed distinct music education concepts and systems based on their own cultural traditions and educational goals. In international online music education, these differences are directly reflected in the setting of course content, teaching methods, and evaluation standards, bringing adaptation challenges to music majors. For example, Western music education pays attention to the training of music theory system and logical thinking, while Chinese traditional music education emphasizes the perception and experience of music charm. When music majors participate in international online courses, they may face conflicts between their own learning habits and foreign educational concepts, resulting in a sense of confusion and frustration in the learning process.

In addition, language barriers also exacerbate the conflict of learning adaptation. Although many international online music courses provide translation services, the professional terms and emotional expressions in music teaching are difficult to be accurately translated, which affects students' understanding of course content and communication with foreign teachers.

3.4 Imbalance of digital resource allocation and the gap in learning opportunities

The development of online music education depends on the support of digital infrastructure, such as network speed, hardware equipment, and platform technology. There are obvious differences in digital infrastructure construction between different countries and regions. Developed countries have advanced network technology and perfect online education platforms, providing music majors with high-quality online learning resources and smooth learning experience. However, in some developing countries and regions, due to the backwardness of network conditions and the lack of professional music equipment (such as high-performance microphones, sound cards, and musical instrument accessories), music majors cannot effectively participate in international online music courses, resulting in an obvious gap in learning opportunities.

Even in the same country, the digital resource allocation among different educational institutions is unbalanced. Key music colleges and universities have more funds and technical support to carry out international online music education cooperation projects, while ordinary colleges and universities have relatively insufficient resources, which makes music majors in different institutions have unequal access to international online music education resources.

4 Breakthrough paths of online music education in international education

4.1 Empowering by technology: building an intelligent interactive teaching platform

To make up for the lack of immersive experience and interaction barriers in online music education, it is necessary to rely on advanced digital technologies to build an intelligent interactive teaching platform. Specifically, virtual reality (VR) and augmented reality (AR) technologies can be used to create simulated music teaching scenes, allowing music majors to "immerse" in the virtual orchestral performance venue or concert hall, feel the spatial effect of music, and observe the details of teachers' performance from multiple angles. For example, in the violin teaching course, students can wear VR equipment to watch the teacher's left-hand fingering and right-hand bowing actions in a 360-degree panoramic view, and even "simulate" the playing process through somatosensory technology, receiving real-time feedback from the system on finger pressure and bow speed.

At the same time, artificial intelligence (AI) technology can be introduced to realize intelligent analysis and feedback of students' performance. The platform can collect students' practice audio and video data, analyze their rhythm accuracy,

intonation stability, and emotional expression through audio recognition and image processing technology, and put forward targeted improvement suggestions. For international online courses, AI can also provide real-time translation of professional terms and subtitle generation, reducing language barriers.

4.2 Optimizing the curriculum system: designing an integrated curriculum of "localization + internationalization"

In view of the conflicts caused by differences in international educational concepts, it is necessary to optimize the online music curriculum system and design an integrated curriculum that combines localization and internationalization. On the one hand, the curriculum should fully respect the cultural background and music education traditions of different countries, set up special courses on national traditional music, and help music majors establish a sense of cultural identity and confidence. On the other hand, it should introduce excellent international music education resources, carry out comparative teaching of music cultures from different regions, and cultivate students' cross-cultural music literacy.

In the course content design, the "module-based" teaching method can be adopted, which divides the course into basic theory module, skill training module, cultural appreciation module, and comprehensive practice module. Each module sets up core content and optional content. Students can choose appropriate learning content according to their own professional direction and interest needs, realizing the personalization and diversification of learning. In addition, in the teaching process, attention should be paid to guiding students to find the connection and integration point between different music cultures, encouraging them to carry out cross-cultural music creation and performance practice, and improving their ability to use international music language to express national music culture.

4.3 Strengthening inter-institutional cooperation: establishing an international online music education alliance

To solve the problem of unbalanced allocation of digital resources and unequal learning opportunities, it is necessary to strengthen cooperation between international music educational institutions and establish an international online music education alliance. The alliance can integrate high-quality music education resources from various countries, including courses, teachers, performance resources, etc., and build a shared resource platform to realize the complementary advantages of resources. For example, well-known music colleges in developed countries can provide advanced online courseware and teacher training programs for colleges in developing countries, while colleges in developing countries can share their unique traditional music resources, enriching the diversity of the platform^[5].

The alliance can also carry out joint online teaching activities, such as international music master classes, cross-border orchestral rehearsals, and online music festivals. Through these activities, music majors from different countries can communicate and learn from each other, breaking the limitations of regions and resources. In addition, the alliance should pay attention to the construction of digital infrastructure in underdeveloped regions, provide technical support and funding assistance, and promote the balanced development of international online music education.

4.4 Paying attention to learning experience: improving the support system for online music learning

Improving the learning experience of music majors is the core goal of breaking through the challenges of online music education. Therefore, it is necessary to establish a sound support system for online music learning. In terms of teacher training, it is necessary to strengthen the training of international online teaching skills for music teachers, improve their ability to use digital teaching tools, design interactive teaching activities, and deal with cross-cultural teaching problems.

In terms of student support, a full-time online learning counselor system can be set up to provide students with personalized learning guidance, answer their questions in the learning process in a timely manner, and help them solve problems such as technical difficulties and psychological adaptation. At the same time, a peer learning community can be established to encourage students to communicate and cooperate with each other, share learning experience and practice results, and form a good learning atmosphere.

In terms of teaching evaluation, a diversified evaluation system should be adopted, combining process evaluation and result evaluation, and paying attention to students' participation in online courses, interaction quality, and progress in professional skills. The evaluation results should be timely fed back to students and teachers to provide a basis for optimizing teaching and learning strategies.

5 Conclusion

In the context of digital transformation, international online music education has shown strong vitality and

development potential, providing new opportunities for the internationalization of music education and the growth of music majors. However, from the perspective of music majors' learning experience, it is also facing challenges such as the loss of immersive teaching scenes, barriers to skill interaction feedback, differences in educational concepts, and imbalance of resource allocation. These challenges are not only technical problems but also involve the adaptation of teaching models, curriculum systems, and cultural concepts.

To break through these challenges, it is necessary to rely on technological innovation to build an intelligent interactive teaching platform, optimize the curriculum system to realize the integration of localization and internationalization, strengthen inter-institutional cooperation to promote the balanced allocation of resources, and improve the learning support system to pay attention to students' learning experience. Only in this way can international online music education better meet the professional learning needs of music majors, improve the quality and effectiveness of teaching, and play a greater role in cultivating music talents with international vision, professional skills, and cultural confidence.

In the future, with the continuous progress of digital technology and the deepening of international education cooperation, international online music education will usher in a broader development space. However, it is also necessary to pay attention to the potential problems in its development, such as the protection of intellectual property rights of music resources, the ethics of intelligent teaching, and the maintenance of cultural diversity, so as to promote the healthy and sustainable development of international online music education.

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