Education Insights

Review

Strategies for Improving the Teaching Abilities of Primary School Music Teachers in the Context of Digital Education

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Abstract: This study explores ways to enhance the teaching abilities of primary school music teachers in the context of educational digitalization. Literature analysis reveals that many teachers currently use digital teaching methods infrequently and lack sufficient digital literacy to effectively address teaching challenges, highlighting significant potential for improvement. Recent policy reviews show that formal guidelines increasingly emphasize digital competence for primary school music teachers. Research findings indicate that adopting digital teaching methods can significantly improve teaching quality and efficiency. This paper consolidates existing research on digital education for music teachers and offers optimization strategies across three areas. First, teachers can enhance their understanding of digital concepts by watching relevant videos or reading articles, engaging in peer discussions, and attending regular training sessions. Second, they can develop digital application skills by participating in practical training, increasing hands-on practice, and reflecting on lessons. Finally, teachers can improve their ability to search and process digital resources by focusing on targeted resource collection and learning music editing software. These strategies aim to equip music teachers with the skills needed to thrive in a digital educational environment and improve their teaching effectiveness.

Keywords: education digitization; primary education; music teacher; teaching ability

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1. Introduction

The digital transformation of education refers to the comprehensive reform and innovation of educational processes, resources, and management through the application of modern information technologies, aiming to improve the quality of education, promote educational equity, and cultivate innovative talent [1]. Currently, with the deep integration of information technology and education, the field is continually evolving under the influence of network technologies such as 5G, IPv6, and AIGC. However, as educational reforms progress vigorously, new challenges have begun to emerge. Tong conducted a survey on the digital literacy of 568 teachers from ten primary schools in Shandong Province through questionnaires. The survey report revealed that 62.32% of the teachers scored low in their ability to use digital technologies, and 65.49% had low scores in digital teaching capabilities. This indicates that teachers face considerable difficulties in applying digital teaching technologies [2]. Similarly, Shen's survey of 678 primary school teachers showed that 31% of them felt they could not fully understand the value of digital technologies in educational development, 25.3% of teachers had a vague understanding of the opportunities and challenges that digital technology brings to education, while 35% believed they lacked effective methods to address the difficulties encountered in educational digitalization practices [3]. These findings highlight the multifaceted challenges primary school teachers face in digital education. Even though some primary school teachers have

acquired a certain level of digital literacy, there remains a pressing need for further improvement.

Furthermore, some researchers have proposed suggestions regarding the application of digital education in teachers' instructional practices. Ning's research indicates that the appropriate use of information technologies, such as multimedia presentations, in classroom teaching can effectively improve traditional teaching models and enhance the diversity of classroom content. Additionally, teachers can utilize online platforms to implement group-based collaborative learning, which promotes efficient student learning while fostering innovation and teamwork skills [4]. After class, Wang's study highlights the use of digital education platforms to provide students with post-class information technology services. These platforms facilitate timely feedback and real-time communication through home-school interactions [5]. Teachers can offer personalized learning suggestions and guidance based on students' academic performance and learning progress, thereby improving the effectiveness of post-class support.

However, challenges such as teachers' vague understanding of digital education, lack of proficiency, and insufficient digital literacy hinder the role of digital teaching in enhancing instructional quality. Music, as a comprehensive art subject, encompasses skills, emotions, culture, and communication. Therefore, music teachers need to focus not only on their professional expertise and teaching skills but also on the proficient use of diverse digital teaching methods. For instance, by using music production software, students can create their own compositions, and this level of interactivity can significantly boost their learning motivation.

While these studies highlight the positive effects of digital teaching methods in music education, they also suggest that music teachers need to further improve their digital teaching concepts, integrate educational technologies into their instruction, and enhance their application capabilities. Thus, it is essential to build upon the theoretical foundations of prior research to discuss strategies for improving the teaching abilities of primary school music teachers in the context of educational digitalization. This approach aims to enhance the instructional quality of primary school music teachers and provide further references for their engagement in digital education practices.

2. Fundamental Theoretical Framework

2.1. Educational Digitization

Education refers to activities that enhance an individual's knowledge and skills, develop intellectual and physical capabilities, and influence thoughts and moral character. This form of education is not confined to school environments but also includes educational influences from family and society. The term digitization emerged in 1959 with the application of digital technologies, as they began to integrate into business processes, helping enterprises and organizations optimize management. Qian and Sun noted that, in its earliest stages, digitization was primarily used for measurement and computation, referring to the conversion of various forms of information into binary digital codes through computer technology. They further defined digital transformation as the process of utilizing emerging digital technologies to comprehensively optimize and fundamentally reshape organizational structures, operational models, and strategies [6].

Educational digitization, as the integration of "education" and "digitization," is described in the studies by Tang, Fan, Pang, and Zhong as the application of digital technologies to reform education processes in terms of informatization, intelligence, personalization, and networking, with the aim of improving educational quality and efficiency [7]. Liu, Hu, Yuan, Zha, Jiang, and Yang regard educational digital transformation as the use of digital technologies to enhance educational tools, optimize teaching methods, and reshape the educational landscape. By empowering data elements, optimizing processes, and innovating service models, this transformation can fully stimulate the vitality of teaching and learning [8].

A synthesis of the above studies indicates that educational digitization refers to the effective application of digital technologies in education to enhance teaching quality and efficiency. Compared to traditional education, digital education offers several advantages. Specifically, digital teaching methods enable real-time tracking of students' learning progress through mobile devices. Combined with data analysis, these methods help uncover students' developmental potential and provide personalized learning plans. This differentiated instruction model offers effective support for efficient student learning. Innovative and efficient digital learning approaches, such as virtual teaching and flipped classrooms, not only foster students' independent learning but also stimulate their interest in research and study.

2.2. Primary School Music Education

As a compulsory subject for all students during the compulsory education stage, primary school music education plays a fundamental role in students' overall development. Liu distinguishes between broad and narrow definitions of music education. In its broad sense, music education has existed since the birth of human music, encompassing any educational activity that influences individuals' thoughts, emotions, and cognitive qualities through musical means, while also enhancing knowledge and skills. In the narrow sense, music education refers specifically to structured, organized, and purposeful school-based music instruction that aligns with societal expectations [9]. School music education aims to improve students' general literacy and cultivate their emotional and aesthetic sensibilities. Its primary goals include enhancing students' aesthetic appreciation, fostering musical artistry, enriching their aesthetic cognition, and improving their cultural and artistic refinement. As the introductory stage of musical learning, primary school music education serves as an essential foundation for students' future engagement with the arts. Xiong identifies four key components of primary school music education: singing songs, reading musical notation, playing instruments, and music appreciation. Furthermore, Xiong offers new insights into teaching methods and learning strategies in music education [10]. In the classroom, students gradually transition from a passive role of attentively listening and remaining silent to a more active, student-centered environment where teacher-student interactions take the forefront. The approach to singing evolves from relying on recorded accompaniments to the teacher personally providing accompaniment and leading by example through demonstration, encouraging students to engage more confidently in singing. Traditional teaching methods are expanded to include more dynamic and interactive forms such as performances and extracurricular activities, which help solidify the knowledge acquired in the classroom. Additionally, the communication skills between the teacher and students are enhanced, fostering a more collaborative learning atmosphere. In summary, primary school music education plays a crucial role in improving students' aesthetic awareness and moral values, while laying a strong foundation for the development of their overall abilities, helping shape well-rounded individuals for the future.

2.3. Digitalized Primary School Music Education

Digitalized primary school music education, as the integration of primary school music education and educational digitization, is an essential path for the development of music education quality in primary schools. Zhang believes that the integration of digitization with primary school music education contributes to the innovation of teaching methods and the expansion of content, bringing new momentum to music education teaching [11]. The digitization of primary school music education is reflected in many aspects. Zhang suggests that the application of digital technology in classroom teaching exemplifies music's digital education. For example, music teachers skillfully use multimedia teaching resources such as music animations and audio clips to teach students music knowledge [12]. This demonstrates how music teachers utilize information technology to

conduct teaching activities effectively. Yang and Ji argue that digital platforms provide a vast interactive space for music teaching and offer diverse forms of interaction. These platforms break the limitations of traditional music teaching, allowing music education to extend beyond the classroom and into extracurricular and online settings, thus broadening students' learning channels [13]. Students can use these tools to track their progress and performance in music learning, enabling them to adjust their learning methods and strategies more precisely. Teachers can also design personalized learning plans based on students' learning needs and interests, providing support for individualized music education. Zhao highlights that the use of digital music tools, such as score composition tools and audio editing tools, in the classroom can assist teachers in achieving teaching goals and help students better understand music knowledge through audio visualization [14]. Primary school music teachers can also use music production software in the classroom to encourage students in creative music composition, which nurtures their innovation and creativity.

In contrast to traditional music education, which is often limited to textbooks and the classroom, digital teaching overcomes these limitations, allowing students to access a wide range of musical resources from around the world via the internet. This provides students with opportunities to experience diverse music cultures. He believes that with the use of information technology, students are no longer confined to traditional classroom learning. Instead, they can engage in various forms of learning through digital music textbooks, smart music teaching tools, and online music education platforms [15]. Based on the above research, it can be concluded that the digitalized music education model enhances and innovates the primary school music education system.

3. Limitations and Optimization Strategies of Digital Education Application for Primary School Music Teachers

A review of related research on primary school music digital education reveals that the primary challenges currently faced by music teachers are in the areas of understanding digitalization concepts, technical application literacy, and information resource processing capabilities. Firstly, the understanding of the digitalization concept by primary school music teachers is a prerequisite and driving force for the effective use of digital resources and technology. When primary school teachers correctly recognize the concept and positive effects of digital education, they can better strengthen their enthusiasm for adopting digital teaching methods. Chen's survey, which involved 202 primary school music teachers from various regions across the country, revealed that many of them have a limited understanding of the concept of digitalization, a below-average level of digital competency, and low motivation to improve their digital literacy. They have not recognized the impact of digital teaching on improving primary school music classrooms [16]. Zhang's report, based on a survey of music teachers' professional abilities at a certain primary school, also pointed out that the teachers at that school had weak awareness of digital literacy and failed to realize its importance [11]. This shows that primary school music teachers have a shallow understanding of digitalized music education and have not recognized its significance for primary school music teaching. Currently, China is undergoing a critical period of educational digital transformation, and it is urgent for primary school music teachers to keep up with the times, adapt to the new development of education, and meet students' demand for diverse knowledge. Therefore, strengthening digital concept training for primary school music teachers is an immediate task.

In terms of optimization strategies for the application of educational digitalization in primary school music classrooms, particularly in enhancing teachers' understanding of digitalization concepts, it is essential for teachers to correctly understand these concepts, as this understanding can serve as an intrinsic motivation to improve their digital education literacy. As suggested by Chen's research, primary school music teachers need to strengthen their internal motivation, adopt a lifelong learning mindset, and form the right

concept themselves so that they can actively understand the specific concepts of digitalization, which can then be applied to teaching to improve its quality [16]. Huang believes that active communication and exchange of teaching experiences with colleagues, as well as regular participation in educational training organized by schools or relevant education departments, can effectively correct and improve teachers' educational concepts, thus enhancing their understanding of teaching materials and objectives, which has a positive impact on their educational philosophy [17]. Based on this, three specific actions can be proposed: First, teachers can enhance their knowledge base by reading articles or watching videos related to music digital teaching every day. Second, teachers can strengthen communication with colleagues, actively participate in seminars, and share teaching experiences. Third, teachers should regularly attend training sessions organized by schools or education departments to identify and improve the shortcomings in their educational concepts.

Secondly, simply understanding the concept of music digital education without translating the theory into practical teaching behavior will not effectively improve teaching quality. Yao's survey and analysis of all music teachers at a primary school in Kunming revealed that most music teachers primarily rely on lecturing, playing, and singing during their classes. These teachers are generally unfamiliar with information technology and are unable to use it proficiently in the classroom, resulting in unsatisfactory teaching outcomes [18]. Analyzing this research, it is evident that the application of digital technology in primary school music classes can facilitate students' music knowledge acquisition, enhance the diversity of classroom teaching, and enrich teaching methods, which plays a vital role in improving music teachers' teaching abilities. However, there are still shortcomings in the application of digital technology by primary school music teachers, which need to be addressed. In terms of improving primary school music teachers' digital literacy, mastering and appropriately utilizing digital technology can significantly enhance teaching efficiency and diversify teaching methods. Huang and Guo suggest that primary school teachers can regularly participate in training on digital technology application to strengthen and update their technical skills. Furthermore, through online and offline communication with colleagues, teachers can grasp the needs of curriculum development and continuously improve and refine their teaching methods [19]. Qiu adds that, in addition to internal school training, organizing extracurricular practical activities is a fundamental requirement for enhancing music teachers' digital teaching capabilities [20]. Moreover, music teachers should consistently and appropriately use digital technology in the classroom, engaging in frequent practice to become proficient in using digital technology and improving their digital literacy. Based on the above research, the following recommendations are made for enhancing the professional development of primary school music teachers: First, regularly participate in training on digital technology application to stay updated with advancements in music education models. Second, actively engage in extracurricular practical activities to absorb new teaching ideas and strengthen digital teaching skills. Third, continuously practice using digital technology in the classroom, increasing proficiency and integrating it into personal teaching models to diversify teaching methods.

Finally, the internet is filled with an overwhelming amount of digital information. Zhao's research, based on interviews with fifteen music teachers from five primary schools in Suzhou, found that among the eleven teachers who used music teaching software, four were either unable to use the software or were not proficient in it, leading to a reduction in the efficiency of handling teaching resources [14]. As a result, teachers currently face difficulties in re-editing music digital resources. From the analysis of the above research, it is clear that there are still gaps in primary school music teachers' ability to process and analyze digital resources, which needs to be further optimized. In terms of primary school music teachers' ability to dig deeper and integrate digital music curriculum resources, fully utilizing the value of these resources can provide students with more

enriched music curriculum content. Bai suggests that when music teachers reprocess digital resources, they should tailor them to the actual teaching context and the specific needs of students, maximizing the effectiveness of digital resources in real classroom applications, thereby enhancing the quality of education [21]. Ding believes that primary school music teachers can use computer music software to help them edit more efficiently. Thus, becoming proficient in music editing software can improve teachers' resource processing abilities, helping them incorporate music resources into teaching according to practical needs [22]. Based on the above, the following two recommendations are made regarding the collection and processing of digital resources by primary school music teachers: First, when collecting information, the orientation should align with the current students' learning conditions and content, ensuring that teachers can fully utilize these resources in subsequent teaching. Second, primary school music teachers need to become proficient in using music editing software functions. This will enable them to efficiently reprocess resources, saving preparation time while also making better use of resources in the classroom.

4. Conclusion

This study aims to provide suggestions for improving the teaching abilities of primary school music teachers in the context of educational digitalization by summarizing and synthesizing literature reports. Through the analysis of the current situation, it was found that there is still room for improvement in the areas of understanding digitalization concepts, technological application literacy, and the ability to analyze and process information resources among primary school music teachers. Based on this, the researcher has comprehensively reviewed research reports on digital education for primary school music teachers and discussed improvement strategies in these three areas. However, there is a lack of literature reports on primary school music teachers' digital education, and the optimization strategies lack practical case studies from real teaching practices. Therefore, how to integrate digital teaching methods with primary school music education to enhance teachers' teaching levels still requires further practical research by music education practitioners.

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