

The Development of Piano Class to Enhance Playing and Singing Ability for Preschool Education Majors

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Abstract

The purpose of this study is to evaluate the influence of different teaching methods on the piano ability of students majoring in preschool education scientifically and to demonstrate the new collective piano playing and singing course and its curriculum. Specific objectives aim to study the current situation and needs of piano teaching for preschool education majors and present a new piano course aimed at improving students' playing and singing ability. This paper studies the current situation and needs of piano teaching in preschool education majors in higher vocational colleges through literature and questionnaire survey. In order to achieve the second goal, the research based on the subject-centered theory and Taylor goal combined with Fink integrated curriculum design, designed a new piano playing and singing collective curriculum. The research adopts quasi-experimental design to conduct empirical research on the new curriculum, collects data through interviews, measurements and contents. The findings reveal that the new curriculum combined with Fink has significantly improved students' piano playing and singing ability and music literacy, enhanced their practical teaching and performance ability, and improved the overall learning effect through scientific evaluation and feedback mechanism. The research conclusion emphasizes that the curriculum design should choose and organize effective learning based on clear educational goals and improve teaching practice through scientific evaluation, so as to comprehensively improve the teaching and students' learning effect of piano playing and singing course in preschool education.

Keywords: Preschool Education Curriculum Development, Piano Skills, Sing Skills, Evaluation, Piano Class

Introduction

As the country attaches great importance to art education, the demand for excellent teachers in the kindergarten industry is skyrocketing. In order to meet this demand and train more teachers with professional knowledge and skills, more and more colleges and universities have begun to offer preschool education majors, including higher vocational colleges and universities. From the perspective of integrating teaching positions and curricula, music education has gradually played an important role in preschool education majors and has become one of the compulsory courses. The Vocational Education Law of the People's Republic of China (2022 Revision) makes it clear that "the state optimizes the structure of education, allocates educational resources scientifically, and promotes the coordinated development of vocational education and general education at different stages of post-compulsory education by local conditions". The Government's work report once again proposes "vigorously developing vocational education." Vocational education is an important part of the national education system and human resources development and is a type of education that has the same importance as general education; we have insisted that it be based on serving the comprehensive development of students and the economic and social development of the region, and we have continued to promote the coordinated development of vocational and general education. The Outline of the National Medium- and Long-Term Education Reform and Development Plan (2010-2020) emphasizes the need to vigorously develop vocational education, focusing on improving quality. With service as its purpose and employment as its orientation, it promotes education and teaching reform. Vocational education should be oriented to everyone and society and should focus on cultivating students' professional ethics, vocational skills, employment, and entrepreneurial abilities. As for pre-school education, it is proposed that pre-school education should be popularized and the development of pre-school education in rural areas should be emphasized. This policy points out the direction for the development of preschool education in higher vocational colleges and universities, in which the music course, as an important part of cultivating students' comprehensive literacy and vocational

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skills, needs to be optimized and innovated continuously in order to adapt to the social demand for preschool education talents. Several Opinions of the State Council on the Current Development of Preschool Education: It is clearly pointed out that it is necessary to strengthen the construction of early childhood teachers through various ways, and to accelerate the construction of a team of early childhood teachers with high moral character, love for children, excellent business skills and reasonable structure. In this context, the music courses of preschool education majors in higher vocational colleges and universities should focus on cultivating students' music education and teaching ability, so that students have solid basic knowledge and skills in music and can effectively carry out music education activities in preschool education. The Action Plan for the Revitalization of Teacher Education (2018-2022) proposes to innovate the mode of teacher education and cultivate high-quality, specialized and innovative teachers. This means that the music course of preschool education majors should focus on cultivating students' innovation and practical ability, for example, by innovating teaching methods and enriching teaching content to improve students' music teaching level. A series of national policies are promoting the development of preschool education majors in higher vocational colleges and universities, and the music course, as an important part, is also being paid attention to and standardized to cultivate preschool education majors in line with the national requirements and social needs.

Music education, especially piano playing and singing, is of great educational significance in preschool education majors of higher vocational colleges and universities as the foundation of future preschool educators, piano playing and singing improves students' musical skills and provides them with an important platform for comprehensive quality education. These skills and knowledge play a vital role in their future work in preschool education. Piano playing and singing, as one of the practical classroom skills necessary for preschool education majors, will be widely utilized in the classroom by students in their future careers. The Piano Playing and Singing program significantly enhances preschool students' musical literacy and teaching ability. (According to a study by Hallam, 2010, music education can significantly improve students' music perception and performance skills. For preschool students, mastering piano playing and singing skills enriches their teaching tools and helps them better organize and implement music activities in actual teaching. The study (Gordon, 2015) further pointed out that teachers with music literacy can more effectively guide children in musical activities, thus promoting overall development. Specifically, through the piano playing and singing course, preschool students learn how to select appropriate repertoire for children, arrange musical activities, and stimulate children's interest and participation through musical interactions in the classroom. The piano playing and singing program are important for students' comprehensive quality development. A study by (Bialystok & DePape, 2009) found that music training enhances an individual's executive functioning, including planning, organizing, and multitasking abilities. These abilities are particularly important in preschool education because preschool teachers need to deal with complex and diverse teaching situations and coordinate various teaching resources and activities. Through piano playing and singing training, students improve their musical skills and enhance these key professional competencies. This multitasking ability is essential for daily classroom management and the smooth running of teaching and learning activities. The piano-playing and singing program also develops students' emotional expression and communication skills. Research (Koelsch, 2010) has shown that musical activities can enhance an individual's ability to express emotion and social interaction. In the piano playing and singing program, students learn how to express their emotions through music by singing and playing and how to use music to communicate their emotions effectively in the teaching and learning process. This is an important reference value for emotional education and teacher-student interaction in preschool education. Through music, teachers can more easily establish an emotional connection with children and help children better understand and express their emotions. The piano-playing and singing programs provide preschool students with a platform for innovation and creativity. (According to Hickey, 2001, music composition and improvisation can stimulate individual creativity and imagination. In the piano playing course, students can develop their creative thinking and music creation ability by improvising and adapting the existing repertoire. This spirit of creativity is beneficial to music education and also to preschool education as a whole, as it encourages students to adopt innovative methods and strategies in their future teaching and to improve the quality of education. Creative music activities can stimulate children's interest and cultivate their creative thinking, thus promoting their overall development.

Piano lessons in vocational colleges are mainly group piano lessons taught by one piano teacher for 20-25 students. Usually, such group lessons will have some problems. (Chen Yuanfeng, 2014) pointed out that the common problems in Xinjiang higher vocational colleges and universities are the weak foundation of students, the unclear goal of professional training, the lack of scientific basis for selecting teaching materials, and the irrational teaching methods. (2021, Zhou Zhen) emphasized that many colleges and universities provide traditional and monotonous teaching methods for piano group courses but still use rote teaching methods. Teachers dominate the classroom, and students listen passively, lacking independent thinking and trying consciousness. The evaluation system is unreasonable, and there is no effective platform for piano group practice. Most music teachers have begun to pay more attention to piano group teaching, especially recognizing that in the traditional piano group teaching process, the teaching staff is relatively weak, the use of textbooks is one-sided, the content of textbooks is too single, the lack of a sound teaching system, which increases the difficulty of the learners. Teachers, mostly conservatory graduates or master's degree holders, focus too much on practicing piano skills without considering the learner's conditions, failing to develop the preschool student's competence and comprehensive ability for sustainable development. Even with new teaching methods, this is a temporary solution rather than a fundamental cause.

Based on the above problems, the author hopes that by developing a new curriculum, combining singing, playing, ensemble, and other teaching methods in the classroom, to solve the current problems of piano group lessons in higher vocational colleges and universities in an empirical way to improve students' ability to sing and play and improve their musical literacy. This approach not only inherits the tradition but also introduces new ideas, which not only can promote the development of music-quality education for students in higher vocational colleges and universities but also make the teachers apply what they have learned and the students learn what they have learned, and always aim at cultivating people with all-round development.

Research objectives

1. To study piano teaching for Preschool Education
2. To develop a piano course to enhance play and singing skills for Preschool Education Majors.

Research Framework

Research has found that cultivating piano skills in preschool education is crucial, especially piano playing and singing, which is the core demand of preschool education positions in vocational colleges and universities. However, the existing research mainly focuses on the traditional piano teaching mode, and there is little practical research on the innovative curriculum teaching mode in improving students' piano playing and singing ability. Research has shown that factors such as teaching methods, students' perceived risk, and motivation significantly affect students' piano skill development and learning outcomes. Therefore, this study proposes a conceptual framework designed to assess the impact of an innovative curriculum teaching model on preschool students' piano proficiency. Specifically, this study utilized a sequential mixed-methods paradigm with a quasi-experimental design to comprehensively assess the effects of different teaching methods on preschool students' piano proficiency. The study was divided into an experimental group and a control group. The independent variables were different teaching methods (innovative curriculum teaching model and traditional teaching model), the mediating variables were students' perceived risk and motivation to learn, and the dependent variables were students' performance and progress in piano playing, singing, children's song arrangement, and musical creativity. Data were collected through a variety of methods, including interviews, measurements, and content analysis, and statistical methods were applied to analyze and compare them. Through this research paradigm, the researcher was able to systematically collect and analyze data to assess the effectiveness of different teaching methods in enhancing students' piano ability and to provide empirical evidence for improving the teaching model.

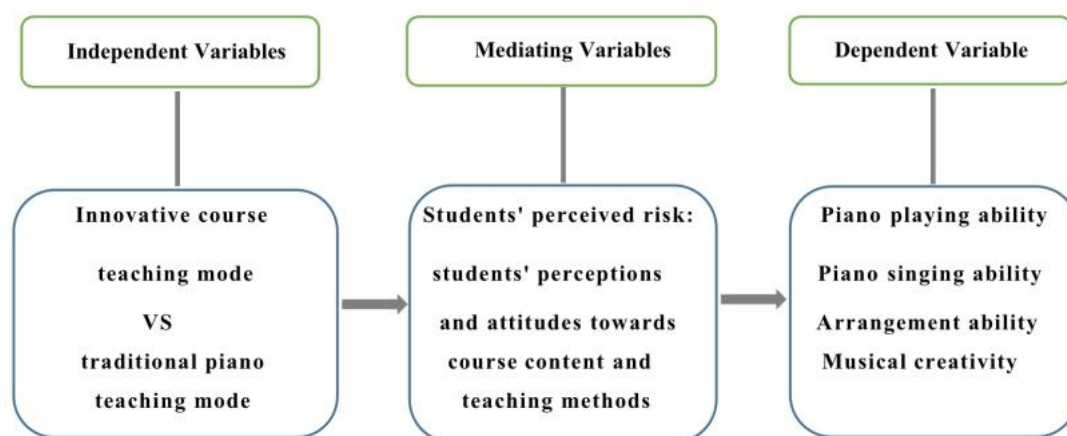


Figure 1: Conceptual Framework

The Music Course for Preschool Education Majors

It is designed to equip future teachers with the knowledge and skills necessary to teach music effectively in kindergarten and preschool settings. The curriculum is divided into three main components: music theory, music appreciation, and music practice. It introduces fundamental concepts such as rhythm, melody, and harmony while emphasizing practical skills like singing, instrument playing, and musical games. Interactive and hands-on teaching methods encourage students to learn through activities and improvisation, fostering music literacy and teaching competence.

Research highlights the critical role of music education in preschool teacher training. Dai Chenyan (2021) emphasizes the importance of a solid foundation in music theory, aesthetic appreciation, and practical skills, which enhance teachers' abilities to guide children's musical learning. Liu Yin (2020) stresses the need for a balanced curriculum that develops theoretical and practical competencies.

Innovative teaching methods, such as the Orff approach, are highly effective. Wu Nan (2022) advocates for the Orff method, which engages children in expressive musical activities and promotes cognitive, emotional, and psychomotor development. Additionally, integrating new media and digital piano group lessons, as suggested by Xiaowei Han (2020) and Jiang Yin (2020), enhances learning outcomes and fosters teamwork.

The curriculum also addresses the importance of professional aspirations. Yawen Zhou (2020) underscores the need for preschool teachers to cultivate a passion for their profession, which enhances their ability to care for and guide young children. As Jingjun Li (2020) notes, continuous curriculum reform is essential to meet evolving educational demands, ensuring that music education in preschool programs remains effective and relevant.

Traditional Piano Teaching Method

Traditional piano teaching, rooted in the Baroque and Classical periods, emphasizes technical precision and profound musical interpretation. Early pedagogy, influenced by E. Bach, prioritized correct finger positioning, wrist coordination, and natural posture. By the 19th century, educators like Czerny and Liszt developed systematic technical exercises focusing on finger independence and dexterity, providing students with a robust technical foundation. Ferdinand Beyer's Basic Course for the Piano and Carl Leimer and Walter Giesekeing's methodologies further integrated music reading, ear training, and muscle coordination to enhance artistic expression (Xiao Xun, 2007).

The traditional approach fosters technical mastery, systematic learning, and a profound understanding of musical works. However, it faces criticism for being overly academic and rigid, potentially stifling students' creativity and individuality (Zhang, 2020; Fan, 2013). Fixed teaching models may fail to adapt to diverse student needs, resulting in passive learning and reduced engagement.

Modern reforms address these limitations by blending traditional techniques with contemporary approaches. For instance, Faber's Piano Adventures emphasizes interactive and enjoyable learning through games and activities, promoting creativity and personalized instruction (Fan, 2013). Scholars advocate incorporating "piano pedagogy" courses in teacher training programs to enhance practical teaching skills and encourage innovative, flexible methods (Deng Guangnian, 2007). By integrating traditional rigor with modern creativity, piano education can better meet students' evolving needs and foster both technical proficiency and artistic expression.

Teaching Psychology

Discipline-Centered Theory in Piano Education

Discipline-centered theory (DCT) emphasizes systematic, logical knowledge transfer to build a solid foundation in specific fields (Zhu, 2000; Tan, 2010). Integrating DCT in piano courses at higher vocational colleges can enhance students' musical literacy and performance skills. Systematic teaching of music theory forms the backbone of this approach. Teachers can deliver comprehensive instruction on music theory, piano techniques, and musical structure, helping students develop a solid theoretical foundation (Wang Xiaoxia, 2015). This structured knowledge transfer fosters rational thinking and enables students to understand the stylistic nuances of musical works. A key aspect of DCT is combining theory with practice. Classroom demonstrations, interactive exercises, and live performances bridge the gap between theoretical learning and practical application, enhancing students' ability to translate knowledge into real-world performance (Zhu, 2000).

Additionally, DCT cultivates students' musical literacy and artistic expression. Through systematic instruction, students gain proficiency in both technical skills and artistic interpretation, which is essential for excelling in music education (Tan, 2010). To balance this with creativity, incorporating student-centered activities such as discussions and open-ended tasks encourages critical thinking and fosters innovation, enriching the learning experience (Chen, 2014).

Tyler's Objective Model in Piano Education for Preschool Majors

Tyler's Objective Model emphasizes clear educational goals, selection and organization of learning experiences, and systematic evaluation to ensure effective curriculum design (Huang, 2023). Applying this model to the piano playing and singing curriculum for preschool education majors in higher vocational colleges provides a structured framework for enhancing students' musical skills. First, specific and actionable objectives are defined, such as mastering basic music theory, piano repertoire, and improvisation skills. These objectives guide the curriculum design, ensuring a focus on measurable learning outcomes (Deng, 2006). Next, learning experiences are selected to balance theory and practice. Music theory instruction, piano technique training, and hands-on performance opportunities are organized progressively from basic to advanced levels. This approach helps students integrate theoretical knowledge with practical skills, fostering a comprehensive understanding of music (Wang, 2009). Finally, a systematic evaluation process is developed to assess student progress. Multiple assessment methods provide comprehensive feedback on learning outcomes, including written exams, skill demonstrations, and performance evaluations. Student feedback is also incorporated to refine teaching content and methods, ensuring continuous improvement (Huang, 2011). This goal-oriented, experience-centered model promotes a systematic, flexible approach to curriculum development, enhancing the quality of music education for preschool majors.

Fink's Integrated Course Design Model in Piano Education for Preschool Majors

Fink's Integrated Course Design Model emphasizes meaningful, student-centered learning by creating significant learning experiences beyond content memorization. The model focuses on three interconnected components: identifying contextual factors, setting clear learning objectives, and aligning feedback, assessment, and teaching activities to enhance student engagement and long-term growth (Qamar, 2020). For piano courses in preschool education, instructional goals should cover Fink's six learning dimensions: understanding core music theory, applying piano skills, integrating music with other preschool subjects, recognizing the social and personal value of music education, fostering a passion for lifelong learning, and developing self-directed learning skills (Yu Hairong, 2017). Learning experiences are carefully selected and organized to promote comprehensive development. These include theoretical lectures on music theory, practical piano exercises, improvisation, and concert performances. Interactive group activities and teacher-student collaboration encourage communication and teamwork, while reflective exercises help students assess and improve their learning progress. A systematic evaluation approach, aligned with learning objectives, assesses students' knowledge and practical skills through exams, performance assessments, and feedback. This integrated design fosters a dynamic, flexible learning environment, enhancing the quality of piano education and equipping students with technical proficiency and a lifelong appreciation for music education.

Methodology

This paper studies the current situation and needs of piano teaching in preschool education majors in higher vocational colleges through literature and questionnaire survey. In order to achieve the second goal, the research based on the subject-centered theory and Taylor goal combined with Fink integrated curriculum design, designed a new piano playing and singing collective curriculum, determined the various elements of the curriculum, and carried out and improved through IOC expert consultation. In order to achieve the third goal, the research adopts quasi-experimental design to conduct empirical research on the new curriculum, collects data through interviews, measurements, and contents, and compares the learning effects of the experimental group and the control group by using statistics.

Results

Objective1: To study piano teaching for Preschool Education

This study aims to assess the impact of different teaching methods on the piano skills of preschool education majors in higher vocational colleges, focusing on piano playing and singing. As the demand for qualified kindergarten teachers increases, music education—especially piano courses—has become essential for early childhood education programs. While traditional piano teaching methods dominate, there is limited research on the effectiveness of innovative teaching approaches in enhancing students' piano playing and singing abilities.

This study proposes a conceptual framework using a sequential mixed-methods design and a quasi-experimental approach to evaluate the effects of different teaching methods on piano skill development. The research was conducted at Guangzhou Construction Vocational College, where students were divided into an experimental group (innovative teaching methods) and a control group (traditional methods). Independent variables include teaching methods, while mediators such as perceived risk and learning motivation influence the dependent variables: students' performance, progress in piano playing, children's song arrangement, and musical creativity. Data collection methods included interviews, performance assessments, and content analysis.

Interview findings reveal several key issues: (1) course content is limited in diversity and practicality, focusing primarily on basic exercises rather than applied skills like accompanying and arranging children's songs; (2) traditional teaching methods fail to engage students, emphasizing classical techniques over practical applications; (3) curriculum design lacks integration and coherence, making it difficult for students to connect different skills; and (4) teachers often lack the expertise to teach group lessons or improvisational accompaniment effectively. Additionally, students face challenges such as weak foundations, low music literacy, limited practice time, and psychological pressure.

By addressing these issues, this study aims to improve students' piano skills, increase their learning motivation, enhance their practical teaching abilities, and provide empirical evidence to support educational research and innovation in preschool education.

Objective2 : To develop the piano course to enhance play and singing skill for Preschool Education Majors

The second objective of this study is to develop a piano program tailored to the needs of preschool education majors, enhancing their skills in piano playing, singing, children's song arrangement, and musical creativity. While traditional piano teaching methods have focused on basic skills, they often fail to meet the practical demands of students in vocational colleges, particularly in preparing them for future roles in early childhood education. This study seeks to design an innovative piano curriculum based on Fink's Integrated Course Design Model to improve students' comprehensive musical literacy and vocational abilities.

The study employed a sequential mixed-methods approach with a quasi-experimental design. Students from Guangzhou Urban Construction Vocational College were divided into an experimental group that followed the innovative curriculum and a control group that continued with traditional teaching methods. The curriculum comprises four key components: Piano Playing, Piano Singing, and Children's Song Arrangements 1 and 2. Each module incorporates note recognition, chordal accompaniment, rhythmic training, and compositional exercises, ensuring students master fundamental skills while applying them creatively.

The Piano Playing and Singing module emphasizes integrating melody and accompaniment, training students to sing without melodic support, and enhancing musical expression through children's and popular songs. The Children's Song Arrangement module focuses on chord arrangements, selecting appropriate accompaniment patterns, and composing original melodies and lyrics, fostering creativity and practical skills.

Course assessments evaluate content comprehensiveness, teaching effectiveness, and personalized instruction. Results indicate that while both groups improved basic piano skills, the experimental group demonstrated superior performance in piano playing, song arrangement, and emotional expression. Recommendations for improvement include developing specialized textbooks, incorporating collaborative methods like four-hand playing, integrating courses for systematic learning, and providing personalized feedback to address individual learning challenges and enhance musical expression.

Discussion

Objective1: To study piano teaching for Preschool Education

This study explores the effectiveness of various piano teaching methods in enhancing preschool education majors' musical and educational skills. Traditional methods, like those of Cherny and Liszt, improve technical skills but may lack engagement (IOa, 2023). Innovative approaches, such as the Orff method, enhance student interest by integrating emotion, singing, and instrument playing (Wu, 2022). Technology, including fingerprint identification, further boosts learning efficiency (Yu Zhou, 2014). Hallam (2010) and Gordon (2015) emphasize that musically skilled teachers promote children's overall development. This study aims to develop systematic, diverse teaching methods to improve students' skills and support their future careers in preschool education.

Objective 2 : To develop the piano course to enhance play and singing skill for Preschool Education Majors

This study aims to develop an innovative piano course to enhance preschool education majors' playing and singing abilities, addressing common issues in vocational colleges, such as limited curriculum content, traditional teaching methods, and low student engagement. Research highlights the importance of piano skills in preschool education, enriching teachers' musical literacy and promoting children's cognitive and emotional development. The course integrates traditional techniques like Cherny's exercises with innovative

methods, such as the Orff approach, to stimulate student interest and participation (Wu, 2022). It also incorporates modern technology, including fingerprint identification, to improve learning efficiency (Yu Zhou, 2014).

Using the Fink Curriculum Integration Design Model, the course covers piano playing, singing, and children's song arrangement, emphasizing practical application. Experimental results show significant improvements in students' musical comprehension and artistic expression. These findings align with Hallam (2010) and Gordon (2015), supporting the need for innovative teaching methods to cultivate skilled and musically literate preschool educators.

Recommendation

Several key improvements are recommended to enhance the piano curriculum's effectiveness for preschool education majors.

(a) Diversity and relevance of course content: The curriculum can be expanded to include foundational skills and practical applications. Incorporating children's songs, improvisational accompaniment, and music composition will enhance students' performance abilities while fostering their practical teaching skills. By diversifying the curriculum, students gain broader training in different musical contexts, which can improve their overall musical competence.

(b) Individualized guidance and feedback: Since students have varying musical backgrounds and abilities, individualized guidance is essential. Future courses should account for these differences by adjusting teaching strategies based on each student's needs. Regular counseling and a comprehensive feedback system would help students overcome challenges and improve their musical expression, ensuring more personalized support and better learning outcomes.

(c) Teachers' professionalism: Teachers' effectiveness directly impacts the success of the curriculum. Strengthening teachers' professional development through training, academic exchanges, and encouraging research and innovation in teaching methods will help improve their music literacy and pedagogical skills. This, in turn, will enhance the overall quality of education and student experiences.

(d) Practical opportunities: To improve students' performance skills, more practical experiences, such as concerts, competitions, and performances, should be incorporated into the curriculum. These activities not only build self-confidence and stage presence but also motivate students to improve their musical abilities through real-world experiences.

(e) Integration of theory and practice: The combination of music theory and practical application should be strengthened. For example, teaching chord arrangements and melody composition through the analysis of real music works will help students understand and apply theoretical concepts more effectively.

(f) Continuous curriculum improvement: A regular feedback mechanism, including student surveys and teaching assessments, will help optimize the curriculum. By analyzing learning outcomes and gathering input from both students and teachers, the curriculum can be adjusted to better meet educational objectives.

(g) Introduction of modern technology: Incorporating modern educational tools like online learning platforms, virtual instruments, and multimedia resources can enrich the curriculum, making learning more flexible and interactive. These technologies provide additional resources, facilitating diverse learning opportunities and enhancing student engagement.

(h) Interdisciplinary integration: Combining music education with other disciplines, such as literature and history, can enrich students' cultural understanding. Integrating activities that link music with subjects like Chinese poetry and literature can promote cultural pride and deepen students' appreciation of their heritage.

Research Implication

This research's implications extend to educational practice and curriculum development, offering valuable insights for improving the effectiveness of music education for preschool education majors.

1. **Curriculum Enhancement:** This study suggests that integrating a more diverse range of content—such as children's songs, improvisational techniques, and music composition—into the piano curriculum can significantly improve students' musical skills and ability to apply them in real-world teaching scenarios. Future curriculum designs should include practical and creative components to provide a more holistic education.

2. **Personalized Teaching Approaches:** The findings highlight the importance of individualized instruction and feedback. Recognizing that students have different learning needs and abilities, teachers should adopt tailored approaches, ensuring students receive appropriate guidance to overcome their unique challenges. This could include differentiated teaching strategies, one-on-one sessions, and regular formative assessments.

3. **Teacher Professional Development:** The research emphasizes the need for continuous professional development for music educators. To improve their pedagogical skills, teachers should be provided with opportunities for advanced training, exposure to new teaching methodologies, and involvement in academic exchanges. This would ultimately enhance the overall quality of instruction and the student learning experience.

4. **Practical Learning Opportunities:** The study indicates that students benefit significantly from practical experiences like performances and competitions. Integrating more real-world applications into the curriculum, such as public concerts and collaborative performances, can improve students' confidence and performance skills while reinforcing their musical education.

5. **Theory-Practice Integration:** The findings emphasize connecting music theory with practice. Educators should integrate theory lessons with hands-on activities to deepen students' understanding of musical concepts. This approach would help students develop both technical proficiency and creative abilities.

6. **Technology Integration:** Modern educational technologies, such as online platforms, virtual instruments, and multimedia tools, are crucial for enhancing learning. Incorporating these technologies into the curriculum could make learning more interactive and accessible, catering to students' diverse needs and fostering a more engaging learning environment.

7. **Interdisciplinary Connections:** The study suggests integrating music with other subjects, such as literature and history, can enrich students' educational experiences. Future curricula could benefit from cross-disciplinary content that connects music to broader cultural and educational themes, fostering a deeper understanding of the subject matter and its societal significance.

In conclusion, this research provides important directions for developing a more effective, engaging, and comprehensive piano curriculum for preschool education majors. By focusing on these areas, educators can better equip students with the skills and knowledge necessary for their professional growth and future work in preschool education.

New Knowledge

This study contributes new knowledge in several key areas of music education for preschool education majors, particularly in the context of piano pedagogy:

1. **Innovative Curriculum Design:** The research introduces an innovative piano curriculum based on the Fink Curriculum Integration Design Model, which combines traditional and modern teaching

methods to enhance students' musical literacy and teaching abilities. This curriculum integrates piano playing, singing, and children's song arrangement, offering a holistic approach beyond basic technical training to include creative and practical applications. This new approach provides a comprehensive framework for developing performance and pedagogical skills in preschool education majors.

2. Effectiveness of Technology-Assisted Teaching: The study demonstrates that modern educational technologies, such as fingerprint identification and color-changing zones, can significantly improve the efficiency and engagement of piano teaching. These technological tools support personalized learning, help track student progress, and reduce teacher workload, offering an innovative way to enhance learning and teaching outcomes.

3. Practical Integration of Music Theory and Performance: The study emphasizes the importance of bridging the gap between music theory and practice, highlighting how combining theoretical knowledge with hands-on activities (chord arrangement and melody composition) enhances students' understanding and application of musical concepts. This integration allows students to connect better what they learn in the classroom with real-world music-making, fostering more comprehensive musicianship.

4. Impact of Performance-Based Learning: By incorporating regular performance opportunities into the curriculum, this research underscores the value of practical experiences in developing students' musical confidence, performance skills, and emotional expression. This finding reinforces the importance of providing students with opportunities to perform and receive feedback in real-world settings, enhancing their overall musical and pedagogical growth.

5. Individualized Learning Pathways: The study highlights the significance of individualized guidance and feedback in the learning process. By recognizing students' diverse learning needs and abilities, the research suggests that personalized teaching strategies are crucial for helping students overcome challenges and improve their musical expression. This finding calls for greater attention to differentiated instruction in music education programs.

6. Interdisciplinary Approaches in Music Education: The research also proposes integrating interdisciplinary content, such as combining music with literature and history, to enrich the educational experience. This approach broadens students' cultural understanding and strengthens their ability to connect music education to other areas of knowledge, fostering a more well-rounded and meaningful learning experience.

In summary, the study offers new insights into designing and implementing a comprehensive, innovative piano curriculum for preschool education majors. It emphasizes the importance of integrating technology, personalized learning, practical experience, and interdisciplinary content to enhance students' musical skills and their ability to apply them in educational contexts.

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