Observing Blended Learning in Vocational Piano Education: A Case Study of Classroom Dynamics

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Abstract
This study examines the application of blended learning in vocational piano education, focusing on the impact of blended learning on classroom dynamics in group piano teaching. Blended learning, which combines traditional face-to-face instruction with online learning, has been increasingly adopted in higher education but remains under-explored in vocational music education, particularly in China. This study investigated a basic piano course at a vocational institution in China, aiming to understand how blended learning affects teaching practices, student engagement, and classroom interactions. The study utilized a qualitative case study approach to collect data through detailed classroom observations in order to capture the nuances of blended learning implementation. Findings indicated that the integration of online and offline teaching methods increased instructional flexibility, encouraged active student participation, and supported collaborative learning. However, challenges were also identified, such as varying levels of student digital literacy, the need for effective integration of technological tools, and balancing online and face-to-face instruction. This study provides practical insights into the design and implementation of blended learning in piano vocational education. Recommendations include strategies for optimizing the use of online resources, creating in-class activities, and addressing common challenges in blended learning environments. This study expands the existing research in piano education by offering practical insights into the design and implementation of blended learning in vocational settings.
Keywords: Blended Learning, Vocational Piano Education, Classroom Dynamics, Group Piano Teaching, Student Engagement.

Introduction
With the rapid development of information technology, blended learning, which combines online and offline, has received widespread attention in the global education sector. Its flexibility enables students to personalize their learning according to their individual needs while enhancing learning outcomes (Hrastinski, 2019). Research has shown that blended learning not only enhances students' learning experience, but also better cultivates professionals who meet the needs of the industry (Liu et al., 2022). In recent years, China's vocational education system has actively explored the application of blended learning models

in teaching, a change that has benefited from the promotion of national policies and the advancement of education informatization technology. The China Vocational Education Development Report (2022) points out that vocational education is expanding the coverage of high-quality educational resources by means of digitization to meet the social demand for composite skilled personnel. In this context, blended learning not only provides students with more flexible learning methods, but also creates new teaching possibilities for teachers.

However, there are many challenges in the traditional piano teaching model in vocational colleges, such as insufficient classroom interaction, lack of personalized feedback, and fixed teaching mode. These problems affect students' improvement in technical and artistic performance and limit their career development. Especially for students majoring in preschool education, piano playing ability is the key to future career development, so how to improve the teaching effect of vocational piano courses has become an urgent problem. In recent years, with the continuous development of digital technology, the application of blended learning in vocational education has become a trend, but in the field of vocational piano education, relevant research and practice are still relatively limited. Current research mainly focuses on the stage of higher education, and pays less attention to music education in vocational colleges and universities. In addition, most of the existing studies have adopted quantitative methods, such as assessing students' performance or learning engagement (Alammary et al., 2019), but the exploration of classroom interaction, learning experience, and teachers' teaching strategies is still insufficient. Therefore, there is a need to systematically study the application of blended learning in vocational piano courses.

In recent years, a number of studies have begun to focus on this area. Zhang (2024) proposed a blended piano teaching model that combines traditional classroom teaching with online personalized learning, and the results of the study showed that the model enhanced students' engagement and course satisfaction. Li (2024) explored a project-based approach to blended piano teaching, and found that the model helped to improve students' technical skills and stimulate their interest in learning. In addition, Tao et al. (2024) used an autobiographical ethnographic research method to analyze learning motivation in piano learning, noting that external motivation (e.g., teacher instruction and peer influence) was crucial in the early stages, while students' intrinsic motivation gradually became the dominant factor as learning progressed. These studies provide new perspectives for understanding the application of blended learning in piano education, suggesting that the model not only helps to optimize the quality of teaching, but also improves classroom interactions and students' learning experiences. However, further qualitative research is still needed to explore in depth the ways in which blended learning can be applied in piano teaching and to provide more targeted guidance for teaching practice.

This study not only focuses on the impact of blended learning on students' learning outcomes, but also delves into its role in classroom interactions, teachers' teaching strategies, and the use of technology, which is still relatively rare in vocational piano education research. The objectives of this study include: exploring students' learning engagement behaviors and their adaptations to teaching activities under the blended learning model; assessing the specific roles of technological tools in vocational piano teaching, including their facilitations and limitations to the learning process; examining teachers' teaching strategies in a blended learning environment; analyzing their impact on teaching effectiveness; and identifying the

possible main challenges and potential opportunities. Focusing on the above research objectives, this study proposes the following core research questions: How do students' learning behaviors and learning experiences behave in vocational piano courses under the blended learning model? How do technological tools support vocational piano teaching and their impact on the teaching process? How do teachers adapt their teaching strategies to suit the needs of their students in a blended learning environment? What are the factors that influence the effectiveness of implementing a blended learning model in a vocational piano program?

This study used qualitative research methods, with classroom observation as the main data collection tool, to analyze teacher-student interactions, technology applications, and student adaptations in a vocational piano course. Through the thematic analysis method, recurring behavioral patterns and pedagogical features in the classroom were identified to summarize the effective practice strategies of blended learning in vocational piano teaching. This study not only fills the gap in the research of blended learning in vocational piano education, but also provides empirical support for teaching practice and a reference for teaching innovation in the field of music education.

In addition, this study has important implications for multiple stakeholders in professional music education. For professional piano students, blended learning offers greater flexibility and personalized learning opportunities. By integrating instructional videos and digital tools, students can practice at their own pace, enhancing classroom instruction while increasing engagement and motivation. For educators, this study provides insights into optimizing blended learning strategies to help teachers improve classroom interactions and student-teacher communication while balancing technology with hands-on instruction. For policy makers, the findings can inform the development of policies that support the effective integration of digital learning resources in vocational programs and ensure that music education is aligned with broader educational trends. For music education researchers, this study extends the research literature on blended learning by qualitatively analyzing the impact of blended learning on classroom dynamics, student interactions, and vocational skill development. At the same time, this study contributes to the development of a blended learning model to help vocational music students acquire the necessary technical and artistic skills, informs the further development of vocational music education, and informs the adoption of blended learning in other vocational fields. The results of the study may also provide guidance for vocational institutions to develop blended piano programs that better meet the needs of their students, and provide teachers with specific teaching strategies to help them more effectively integrate technical and practical instruction.

Reviewing Blended Learning in Piano Teaching
In recent years, Blended Learning, as an important mode of modern education, provides students with a more flexible learning environment and personalized learning experience by combining the advantages of online and offline teaching. Hrastinski (2019) points out that Blended Learning is not only an innovation of teaching mode, but also an important direction of education reform. Compared with the traditional teaching mode, blended learning has significant advantages in knowledge transfer, skills training and learning assessment, especially in solving the problems of large class teaching, resource shortage and personalized learning needs, which show great potential. In recent years, with the rapid development of

education technology, the forms of blended learning have become more and more diversified, from video courses and online homework to the introduction of virtual reality (VR), artificial intelligence (AI) and learning analytics, where blended learning has become an important part of education informatization.

The theoretical foundation of blended learning mainly comes from constructivism and community-based learning theory, and is also supported by cognitive load theory and self-determination theory. Constructivist theory suggests that learning is an active constructive process in which learners form their understanding of knowledge through interaction with the environment and society (Vygotsky, 1978). The blended learning model provides learners with a space for self-directed learning through an online platform where students can learn at their own needs and pace. Offline classrooms, on the other hand, enhance the process of internalizing knowledge through interaction and collaboration. Community-based learning theory further emphasizes the social attributes of learning, and argues that knowledge cannot be generated and transferred without interaction and collaboration among learners (Garrison et al., 2010). Blended learning facilitates knowledge sharing and problem solving among students through the creation of "virtual learning communities". For example, online discussion forums and collaboration tools become important places for students to exchange ideas, share resources, and collaborate on projects (Redmond et al., 2018). The application of this theory is particularly evident in project-based learning and group tasks, where students interact with each other to deepen their understanding of the problem, as well as to enhance their sense of belonging to the learning.

In addition, cognitive load theory provides an important reference for course design in blended learning. Sweller (1988) pointed out that the human cognitive system has a limited capacity, so instructional design needs to reduce unnecessary cognitive load. Blended learning decentralizes learning content through online resources, which reduces students' information overload in the classroom and enhances focused discussion of complex issues in the offline classroom. Self-Determination Theory (SDT) emphasizes the importance of autonomy, competence, and belonging to motivation for learning (Deci & Ryan, 1985). Blended learning models meet students' need for autonomy by providing a flexible learning environment, while enhancing students' sense of competence and belonging through immediate feedback and collaborative learning.

Blended learning research in professional piano teaching, as a discipline with high practical and personalized requirements, is still in its infancy. In recent years, the introduction of virtual pianos and online learning platforms (e.g., MOOC, WeChat) has opened up more possibilities for piano teaching and learning, helping students to improve their skills through instant feedback while significantly increasing learning efficiency and flexibility (Ma & Ma, 2023). However, these online tools still have limitations in the development of advanced skills and artistic expression, such as the lack of high-quality audio support and personalized instruction, which makes complex skills and emotional expression still dependent on real-time interaction and instruction in offline classrooms (Snell & Stringham, 2021). Research suggests that online learning excels in basic skills training for beginners, but needs to be supplemented with offline instruction for more advanced learning.

The implementation of blended learning has also changed the model of teacher-student interaction. Teachers need to take on more responsibilities, including designing online resources, analyzing learning data, and providing personalized instruction, while students need to be more self-managed and technologically adaptable (Ma & Ma, 2023). For example, Li and Timmers (2021) pointed out that real-time feedback and detailed instruction are essential for teaching piano touch skills, which is especially important in complex skill development and artistic expression. Meanwhile, Recent studies have shown that while blended learning enhances students' independent learning abilities, immediate feedback and teacher-student interaction remain crucial for motivation (Pramesworo et al., 2023).

The key challenge in blended piano education is to ensure that students not only have access to rich online learning resources, but also receive effective offline instruction. While online tools support self-directed learning, instructor guidance remains critical in developing students' technical skills and artistic performance (Xiao Ya & Zeng Guizhen, 2022). Although low-latency audio and video technologies show potential in distance learning, they still struggle to fully replace face-to-face instruction in terms of in-depth instruction and emotional interaction. Research emphasizes that tools such as MOOCs can shorten learning time, but musical emotional expression and artistic style still cannot be shaped without immediate feedback and interaction from teachers (Ma & Ma, 2023).

Although blended learning brings many opportunities for educational reform, there are still some challenges in its implementation that cannot be ignored. The instructional design of the blended learning model is highly complex. Teachers need to plan carefully in terms of time allocation, content difficulty, and instructional activity design to ensure that online and offline sessions can be organically integrated (Ma & Ma, 2023). However, blended learning also offers significant opportunities for teaching professional piano. For example, online tools provide students with diverse learning resources, while learning data analytics features can help teachers understand students' learning progress more accurately so that they can adjust their teaching strategies. In addition, the flexibility of blended learning allows students to schedule their own practice time after class, which is important for enhancing the efficiency of skill training (Lee, 2024).

Methodology
This study adopts a qualitative research method case study, aiming to deeply explore the effectiveness of blended learning model in vocational piano teaching through classroom observation. Qualitative research emphasizes in-depth understanding of phenomena in natural contexts and is particularly suitable for exploratory research (Creswell & Poth, 2016). The observation method, as the main data collection means, can truly record students' learning behaviors, teacher-student interactions, and the actual application of technological tools in the classroom, providing first-hand information for the study.

The research scenario was selected in a basic piano course in a vocational college in Inner Mongolia, China, which, through the reform of the traditional teaching model, was designed to incorporate a blended learning model, including online learning resources (video tutorials) and offline practice sessions (piano playing and instruction). Students' learning activities are divided into two segments. In the online session, students complete theoretical learning and basic practice through the online platform. In the offline session, students carry out technique

training and artistic expression development under the guidance of teachers; the program runs once a week for 12 weeks, with one 30-minute lesson. There were three piano teachers in the institution, and all three teachers are contacted by email, and eventually one teacher agreed to implement a blended teaching model course with a class size of 30 students, who were current first-year preschool education majors.

This study used classroom observation method. During the observation process, the researcher observed the course as a non-participant and captured the dynamics of teaching and learning under the blended learning model by taking detailed notes on classroom activities and teacher and student behaviors. To systematize the observation process, the study designed a classroom observation recording form (Table 1). After each observation, the researcher transcribed the field notes into detailed text descriptions and initially coded key events.

Table 1
12 Week Classroom Observation Record Sheet

Weekly	Observation Goals	Observation Projects	Classroom Performance	Interaction	Educational Effect	Suggestions for Improvement
Week 1	Familiarize yourself with the blended teaching model and the basics of five-finger exercises.	Students' use of online learning platforms and completion of classroom five-finger exercises.	Most students can basically master the online learning platform, while a few need further guidance; some students have poor finger independence in five-finger exercises.	Teachers solve problems by answering questions online and instructing students in the classroom on a case-by-case basis.	Students initially master the basic method of five-finger exercises and gradually adapt to the mixed mode of teaching, but the independence of fingers needs to be strengthened.	Individualized tutoring for weak students, online videos of five-finger exercises, and fun exercises designed to enhance students' interest.
Week 2	Consolidation of five-finger exercises, initial mastery of the simple melody "School Song" and online task submission.	Student feedback on the five-finger exercise video and the melody "School Song"; timeliness and quality of online task submissions.	Some students were able to perform the "School Song" more fluently, but often mispronounced; the online task submission rate was 70%, with a few students submitting poor quality.	The teacher's classroom provides individualized instruction for student practice problems.	Students have a basic grasp of melodic playing, but rhythmic accuracy and fluency need to be strengthened; the quality of on-line tasks needs to be improved.	Add clear requirements for practicing tasks and show good work to motivate.
Week 3	Acquire knowledge of appoggiatura rhythms and progressively improve rhythmic coherence and accuracy in the performance of the "Blow the	Students' understanding and use of appositional rhythms; classroom practice of the accuracy and coherence of the "Blow the Trumpet" segment.	Students made progress in the rhythmic exercises of "Blowing the Trumpet", but some students were not flexible enough in the rhythmic changes of the appended dots	The teacher's classroom provides individualized instruction for student practice problems.	Students gradually master the key points of rhythmic changes in the performance of the "Blow the Trumpet" piece, but proficiency still	Provide more exercises on the breakdown of rhythmic variations with dots, and design interactive classroom activities to enhance the understanding

	Trumpet" excerpt。		and were often stuck.		needs to be improved.	of the combination of rhythm and melody.
Week 4	Mastery of technique and emotional expression in a performance demonstration of "Moon, Moon" to assess student learning and understanding.	Whether the students completed the video learning tasks on time and observed their ability to mimic playing and classroom performance.	Students gradually master rhythmic changes in complex melodic exercises, but still need to improve in detailing and musical expression.	Teachers' classroom modeling guides students, online feedback with detailed questions and targeted solutions to difficulties.	Students have improved their skills in combining melody and rhythm, but need to further strengthen their expressive skills.	Provide more exemplary examples of musical expression and design tiered practice tasks to accommodate different student levels.
Week 5	Assess students' mastery of the performance techniques and musical expression of the piece "Swing".	Observe students to see if they are completing the video tasks and record their concentration and classroom performance.	Most students play the melody more fluently, but rhythmic and expressive consistency needs to be improved.	Teacher's classroom modeling guide and online critiques to help refine the details.	Students show improvement in the fluency of their melodic playing, but musical expression and rhythmic detail need to be strengthened.	Situational simulations and technical aids are used to help students better understand the emotion of a musical piece and express it in their performance.
Week 6	Mastering the Octave Rhythm as well as understanding how students perform after viewing a demonstration of "Fall".	Whether the students completed the online tasks on time or not, their understanding of the theoretical knowledge and their performance in classroom practice were observed.	Students are able to perform the whole piece, but the articulation of passages and expressiveness need to be improved; the understanding of musical performance in class discussion is shallow.	Teachers help students improve their playing integrity and expressiveness through classroom segmented instruction and interactive discussions.	The overall playing ability of the students has improved significantly, but the expression of emotion and the handling of details still need to be improved.	Provide more video demonstrations of musical expression and design classroom activities that target emotional expression.
Week 7	To understand students' knowledge of chromatic and whole tone theory and their interest and behavior after watching a demonstration of Shadow Dance.	Whether or not the student completed the video task on time and understood the theory of chromaticism and whole tone; observing his/her reaction after watching the demonstration of Shadow Dance.	Most students are able to perform melodic performance exercises well, but there are still pauses when combining rhythm and melody; 90% of online tasks are completed, and quality is improving.	Teachers encourage students to show their results through classroom performance activities and provide individual counseling to address problems.	Students show improvement in melodic playing skills and expression, but overall fluency needs to be strengthened; the quality of online tasks has improved significantly.	Add classroom performance sessions to enhance comprehensive application skills; provide more targeted instructional videos online.

Week 8	Acquire knowledge of note types and rest theory; explore student interest and classroom performance after viewing a demonstration of Butterfly.	Whether the student completes the on-line tasks on time and understands the knowledge of notes and rests. Observe students' performance of imitative playing and classroom practice after viewing a demonstration of Butterfly.	The majority of students completed the on-line tasks on time, with improved quality and increased knowledge of note types and rests. The contrast between light and heavy in the drop technique is not obvious enough. There is insufficient coordination of key strokes in double-tonguing, and the timing of homophonic legato is not accurate enough.	Students show great interest in the demonstration video of "Butterfly" and actively try to imitate the performance. Teachers conduct segmented demonstrations in class and help students solve technical problems through individual instruction to mobilize students' motivation.	Students show some improvement in basic rhythm and musical expression, and have a better theoretical knowledge of notes and rests, but coherence and technical details in playing still need to be strengthened.	Provides step-by-step instruction in drop techniques, double-tonguing, and gradually strengthens key control and consistency. More detailed instructional videos are added online to help students solve practical problems and consolidate the fundamentals.
Week 9	To master legato playing techniques and to understand students' receptivity and interest in learning the Inner Mongolian Folk Songs demonstration.	Whether or not students completed the legato technique video assignment on time, observing their learning focus and classroom practice performance.	Students progressively complete whole sections, but there are breaks in the performance of long passages; online interaction is more active and some students are not sufficiently involved.	Teachers provide segmented instruction and on-line critiques, and the classroom arranges for students to take turns presenting and evaluating each other.	Students have improved their overall playing fluency and expressiveness, but need to further improve their detailing skills.	Add an overall performance demonstration session to enhance coherence training; design scenario-based interactive tasks to encourage more student participation.
Week 10	To acquire background knowledge and performance techniques of Gadamerin and to explore students' interest in and understanding of emotional expression.	Students watch the completion of tasks; observe their imitative playing and classroom performance skills.	Students are gradually finding overall fluency, but some students still lack detail in their playing; class discussion is more active.	Teachers provide modeling and individual instruction as well as online critiques.	Students have improved their overall playing and teamwork, but coordination and detailing still need to be improved.	Provide more overall performance demonstrations and exercises designed for teamwork tasks.
Week 11	Master the technique and emotional expression of "Turkey in the Straw" and assess students' stage presence.	Record students' completion of online tasks and classroom performance; observe their stage presence	The overall performance of students was good, but some students still need to improve their stage presence and emotional	Teachers help students familiarize themselves with the stage through several mock performances, and online	Students are gradually adapting to stage presence, but still need to improve their emotional expression and detailing skills.	Increase the number of simulated performances and reinforce individual instruction.

	and emotional expression.	expression; a few students were nervous in the mock performance.	feedback with specific suggestions to boost students' confidence.		
Week 12	Conduct a formal debriefing performance to summarize 12 weeks of learning and assess the effectiveness of blended learning.	The student's performance and general competence in formal performances; the completeness and expressiveness of the debriefing repertoire.	Students were able to complete the debriefing and demonstrate their learning, but some students still had room for improvement in their attention to detail.	The teacher summarizes and comments after the performance, encourages students to share their feelings, and summarizes the advantages and disadvantages of the Blended teaching model.	Students showed greater improvement in their overall playing ability and performance, and were more receptive to the blended teaching model.	Provide personalized learning advice to students, optimize course design, and refine the blended learning model experience.

Analysis and findings (Exploring Classroom Dynamics and Key Findings in Blended Learning for Vocational Piano Education)

In the early stages of the programme (Weeks 1-4), students showed varying degrees of challenge and progress in adapting to the blended learning model. While some students were able to quickly master the use of the online learning platform and complete tasks on time, there were still some students who struggled with technology manipulation, task submission, and self-directed learning skills, requiring additional guidance from the teacher. The teaching content focused on basic piano skills, including five-finger exercises (e.g., Figure 1), basic melodic playing, and rhythmic training.

Figure 1. Étude by John Thompson. Reprinted from *Music Fundamentals* (2nd ed., p. 6), by Zhang, 2019, Changchun, China: Northeast Normal University Press. Original composition by Thompson.

Classroom observations showed that many students had problems with finger independence, rhythmic stability and fluency, especially when attempting to play the School Song (e.g., Figure 2), where mispronunciation and rhythmic incoherence were common.

Figure 2. School Song. Reprinted from *Fundamentals of Piano for Kindergarten Teachers* (Vol. 1, p. 20), by Xia, 2021, Changsha, China: Hunan Literature and Art Publishing House. Original work by Beijing Primary School Singing Research Group.

In addition, during the practice of Blow the Trumpet (e.g., Figure 3), some students had difficulties in shifting the rhythm of the appoggiaturas, which led to a decrease in fluency. To help students overcome these technical difficulties, the teacher used a variety of interventions, including classroom demonstrations, individual tutorials, online feedback and task adjustments. Supported by online resources, students were able to watch demonstration videos repeatedly outside the classroom to reinforce rhythmic sense and fingering consistency. At the same time, in-class group practice and individual tutoring effectively enhanced students' rhythmic accuracy and self-confidence in playing.

35.吹喇叭

夏志刚 曲

Figure 3. Blow the Trumpet, composed by Xia. Reprinted from *Fundamentals of Piano for Kindergarten Teachers* (Vol. 1, p. 17), by Xia, 2021, Changsha, China: Hunan Literature and Art Publishing House.

In the demonstration session of Week 4, students' performance of Moon, Moon (e.g. Figure 4) showed an improvement in overall rhythmic stability, but there were still deficiencies in melodic coherence and emotional expression, and some of the students' handling of changes in intensity was rather rigid and lacked musical expressiveness.

26.月亮，月亮

朝鲜族民歌

Figure 4. Moon, Moon (Korean Folk Song). Reprinted from *Fundamentals of Piano for Kindergarten Teachers* (Vol. 1, p. 12), by Xia, 2021, Changsha, China: Hunan Literature and Art Publishing House.

In the middle stage of the programme (Weeks 5-8), students' technical skills and class participation gradually improved. Through online micro-video and classroom demonstration

teaching, students made great progress in rhythmic control, melodic fluency and musical expression. Classroom observations showed that students' melodic stability and rhythmic accuracy improved significantly compared to the early stages, especially in the practice of "Swing" (e.g., Figure 5) and "Fall" (e.g., Figure 6), when they were able to control the melodic coherence and the stability of the octave rhythms more comfortably. However, some students still had pauses in complex rhythmic transitions, which affected the overall fluency of their playing.

Figure 5. Swing, composed by Xia. Reprinted from *Fundamentals of Piano for Kindergarten Teachers* (Vol. 1, p. 11), by Xia, 2021, Changsha, China: Hunan Literature and Art Publishing House.

Figure 6. Fall (American Nursery Rhyme). Reprinted from *Music Fundamentals* (2nd ed., p. 7), by Zhang, 2019, Changchun, China: Northeast Normal University Press.

As the programme progresses, students are introduced to more challenging techniques such as the use of chromatic and whole tone scales, and their understanding of melodic lines and rhythmic nuances is enhanced in the Shadow Dance (e.g. Figure 7). Although most of the students played the single melody part smoothly, they still had some difficulties in rhythmic changes and melodic consistency, especially in the rapid pattern changes which were easily unbalanced. In order to improve the stability and expressiveness of the performance, the teacher should combine group exercises, rhythmic training and individual instruction to guide students to have more precise control of the rhythm and to enhance the expressiveness of the music.

影子舞

Figure 7. Shadow Dance, composed by John Thompson. Reprinted from *Fundamentals of Piano for Kindergarten Teachers* (Vol. 1, p. 27), by Xia, 2021, Changsha, China: Hunan Literature and Art Publishing House.

By the end of this stage, students' musical expression begins to take centre stage in the classroom. Through the practice of Butterfly (e.g. Figure 8), students have further mastered the contrast of key strokes, diatonic co-ordination and melodic fluency. However, classroom observation revealed that some students still lacked coherent musical lines and natural handling of crescendo and diminuendo in their performance, which resulted in a hard expression of emotion. The teacher adopted the strategies of demonstration, individual instruction and classroom performance demonstration to encourage students to include

richer dynamic changes in their performance and to enhance their musical expression through group feedback.

Figure 8. *Butterfly*. Reprinted from *Baiye gangqin jiben jiaocheng (shang ce shao'er jiaoxue ban) [Beyer Piano Basic Tutorial (Children's Teaching Edition, Vol. 1)]*, by Lü, Jia, & Zhang, 2019, p. 103, Southwest Normal University Press. Copyright 2019 by Southwest Normal University Press.

The core repertoire at this stage includes Inner Mongolian Folk Songs (e.g., Figure 9), Gadamerin (e.g., Figure 10), and Turkey in a Straw Pile (e.g., Figure 11), which require students to master more complex expressive techniques such as contrasting strengths, tone shaping, and emotional expression. Although most of the students improved in these areas, some of them still suffered from nerves that affected their fluency during formal performances. To help students overcome these problems, the teacher provided individual guidance, arranged video playback and analysis, and encouraged students to adjust their performance through group feedback.

内蒙民歌

Figure 9. Inner Mongolia Folk Song. Reprinted from *Gāngqín jīchǔ jiàochéng 1* (p. 4), by Li, Xu, Han, & Zhou, 2003, Shanghai, China: Shanghai Music Publishing House.

嘎达梅林

Figure 10. Gada Meilin. Reprinted from *Gāngqín jīchǔ jiàochéng 1* (p. 7), by Li, Xu, Han, & Zhou, 2003, Shanghai, China: Shanghai Music Publishing House.

Figure 11. Turkey in the Straw. Reprinted from *Yuēhàn Tāngpǔsēn jiǎnyì gāngqín jiàochéng (2)* (p. 38), by Thompson, 2005, Shanghai, China: Shanghai Music Publishing House.

The final presentation demonstrated growth in technical and artistic expression, with the majority of students being able to perform completely and confidently, and showing some autonomy in their musical interpretation. However, there are still some students who need to further improve their stage presence and emotional expression. Future teaching could further optimise stage training, such as adding staged performance practice, stage situation simulation and improvisation guidance, in order to help students build up stronger self-confidence and expressive abilities. Meanwhile, the key findings of the observations suggest that blended learning provides flexibility and higher engagement, especially through digital resources and structured classroom activities. However, challenges remain, including differences in student digital literacy, task engagement, and the transition between online and face-to-face learning. Future improvements should focus on refining online task design, enhancing motivational strategies, and optimising the balance between digital and face-to-face instruction to maximise learning outcomes in vocational piano education.

Discussion
Based on a systematic thematic analysis of the 12-week classroom observation data, this study distilled five core themes: dynamic changes in student engagement, multidimensional analysis of the effectiveness of teaching resource utilization, advantages and challenges of combining online and offline teaching, teaching effectiveness and student expressiveness, and the role of the teacher's guidance and feedback mechanism. The in-depth discussion of these themes not only reveals the specific role of the blended teaching model in piano group lessons, but also provides directional suggestions for the optimization of future teaching practices.

Dynamic Changes in Student Engagement
Students' classroom engagement shows obvious dynamic changes in the blended teaching mode throughout the early, middle and late stages of the course. The characteristics and

trends of change at each stage reflect the different performances of students in adapting to the new teaching mode, accomplishing teaching tasks and realizing learning goals. At the initial stage of blended teaching (weeks 1 to 2), students' participation was relatively low, mainly due to unfamiliarity with the operation of the online learning platform and the high need to adapt to the new teaching mode. Some students had technical problems in completing the online tasks, such as not being able to submit their assignments in time or not being able to watch the instructional videos correctly, which directly affected their participation in class. The data showed that the completion rate of the initial online tasks was only 70%, and some students lacked attention to the tasks, which led to the learning effect not meeting expectations. To improve the situation, teachers helped students overcome technical barriers and encouraged them to adapt to new learning styles through online Q&A and classroom group guidance. Especially for students with poorer skills, the teacher provided hands-on demonstrations and individualized support to gradually improve their online learning ability.

As the course progressed (weeks 3 to 7), students gradually adapted to the blended mode of teaching and significantly increased their engagement with the learning content. The practice of octave rhythms and the study of appoggiaturas stimulated students' interest and initiative in learning. Teachers designed contextualized tasks in the classroom, such as simulated playing competitions and group rhythmic exercises, and these activities not only increased students' participation, but also enhanced their sense of competition and cooperation. The study showed that the online task completion rate of students increased to 90% at this stage, indicating that they valued their learning significantly more. A significant increase in classroom interaction was observed, with students showing higher engagement in group exercises and class discussions, and a gradual improvement in learning outcomes.

In the later part of the course (weeks 8 to 12), student engagement reached its peak. The performance of the whole piece became the focus of students' learning. In the classroom observation, it could be seen that students showed a high degree of concentration, and their ability to grasp the rhythm as well as the coordination between left and right hands improved compared to the previous period. The online feedback mechanism at this stage played a key role, as students were able to visualize problems and improve details by submitting videos of their performances and receiving detailed comments from the teacher. The teamwork and classroom presentation activities further motivated the students to participate and enabled them to develop a sense of responsibility and honor in the group project.

Multidimensional Analysis of the Effectiveness of teaching Resources Utilization
Online resources (e.g., instructional videos, task Feedback, and online discussions) play an important role in enhancing student learning. Particularly in the learning of complex techniques, demonstration videos provided students with opportunities for repeated viewing and imitation. For example, in the learning of dotted notes, eighth rhythms, skipping and legato, students were able to gradually master key skill points by watching the instructional videos several times. However, the study also found that at the beginning of the course, some students made low use of the online resources, which was mainly manifested in delayed task submission, insufficient video viewing and incomplete learning records. Some students gave feedback that although the video content was detailed, it lacked targeted and detailed explanations, making it difficult to fully address the technical difficulties. For this reason, the

study recommends increasing customized resource design in the future to provide personalized learning paths based on students' different learning levels.

Observations show that the effective use of online resources needs to be closely integrated with the offline classroom. For example, teachers focused on and modeled common problems in the classroom based on students' completion of online tasks. This two-way feedback mechanism not only improved students' learning efficiency, but also enhanced their mastery of the course content. In the later stages of the course, online resources further supported classroom teaching. For example, through the online video playback and feedback system, students were able to learn the details of their performances independently and improve them with the teacher's suggestions.

Combining Online and Offline Teaching: Advantages and Challenges
The flexibility of online teaching provides students with more opportunities for independent learning. For example, during the five-finger exercises and basic melody stage (weeks 1 to 2), students were able to master the basic movements and rhythms by watching the videos repeatedly. In the offline classroom, students' mastery of technical details was strengthened through teachers' re-demonstration, individual instruction and group practice. It was observed that the frequent group practice and classroom discussion significantly enhanced students' motivation, especially in the whole piece performance and group ensemble, where students demonstrated a high degree of teamwork and sense of responsibility.

However, in the combined online and offline teaching model, although this approach has certain advantages, there are some problems in the actual implementation. Some students showed decreased efficiency and distraction when moving from online tasks (e.g., watching videos) to offline classroom activities (e.g., group discussions or practical exercises). In addition, some students gave feedback that the online tasks were large and repetitive in content, which not only increased their learning burden, but also weakened their performance and motivation to participate in class. To address these issues, the study suggests optimizing the design of online tasks by reducing unnecessary repetitive tasks and retaining only the content directly related to the learning objectives, as well as simplifying the task switching process so that students can have a smoother transition to avoid decreased efficiency and distraction caused by task switching. In addition, it is recommended that learning tasks be broken down into milestones, so that by refining and streamlining the task content, the learning pressure on students can be reduced and their motivation and concentration can be enhanced, thus further improving the teaching effect.

Teaching Effect and Students' Expression Improvement
In the early stage of the course, students overcame the common problems of uneven finger strength and unstable rhythm through five-finger exercises and repetitive practice of basic melodies. In the middle stage (weeks 3 to 7) students' comprehensive technical skills were enhanced. For example, students showed obvious progress in legato and skipping methods, and gradually demonstrated technical coherence and stability in classroom presentations; in the latter part of the course, whole piece performance and debriefing became the focus of students' expressive power. Most of the students were able to effectively improve their stage performance through simulated performances and group work, demonstrating solid technical skills and rich musical emotions. However, the performance anxiety of a few students still

affected the overall performance. It was found that the video playback and team feedback mechanism provided students with specific suggestions for improvement, which further promoted their improvement in musical expression.

The Role of Teacher Guidance and Feedback Mechanisms
Teacher guidance and feedback play an irreplaceable role in the mixed teaching mode. In the classroom, teachers solved students' technical difficulties through contextualized demonstrations, group coaching and stage-by-stage goal assessment. For example, in rhythmic exercises, teachers use step-by-step explanations to help students understand and master technical points. The online feedback mechanism also effectively supported students' independent learning through personalized comments and suggestions for improvement. In addition, the teacher plays an important role in managing the classroom atmosphere, with encouraging comments and immediate adjustments to help students build self-confidence and a sense of teamwork in the group ensemble. For example, through ensemble practice, students gradually achieved a balance between technique and cooperation.

Ethical Considerations
Before the start of the study, the researchers obtained permission from **Wuhai Institute of Vocational Technology in Inner Mongolia, China**, as well as approval from the teaching faculty, and ensured that all participating students signed informed consent forms. To adhere to ethical standards, several measures were implemented. All identifying information related to students and instructors was removed from records and reports to ensure anonymity and data confidentiality. The researcher remained a passive observer in the classroom, refraining from interfering with teaching activities to minimize any potential impact on the learning environment. Additionally, all observation records were securely stored in encrypted electronic files to safeguard data security and prevent the disclosure of sensitive information.

Limitations of the Study
This study is based on classroom observation, which, despite its ability to provide in-depth insights into teacher-student interactions and technological dynamics in the classroom, has certain limitations. **First, subjectivity may influence the findings.** Observation records rely to some extent on the researcher's judgment, and although systematic tools help reduce bias, complete objectivity remains challenging. **Second, the study relies on a single source of data.** Since no additional data collection methods, such as interviews or questionnaires, were used, the results may not fully capture students' subjective experiences. **Finally, the sample size is limited.** The study focuses on students from a single class, which restricts the generalizability of the findings.

Conclusion
This study systematically revealed the strengths and challenges of the blended teaching model in vocational piano group lessons through 12 weeks of classroom observation. It was found that students' technical competence, engagement and musical expression improved significantly at all stages of the course, and the effective combination of online and offline teaching supported the optimization of teaching effectiveness. The blended learning model provides students with diverse learning paths through the flexibility of online resources and the interactivity of offline classes. In the online session, students are able to practice basic skills (e.g. five-finger exercises, attachment point rhythms) and gradually improve their

technical accuracy and fluency through repeated viewing of teaching videos; while in the offline classroom, the mastery of knowledge and expressive ability of artistic expression are further strengthened through teacher guidance, group practice and live demonstration. Especially in the latter part of the course, students' stage performance ability and emotional expression level are significantly improved through situational simulation and performance activities. This combination of online and offline modes not only enhanced students' independent learning ability, but also cultivated their sense of collaboration and team spirit. However, the study also revealed some practical challenges. For example, due to the low level of digital literacy of some students, the difficulty in using the platform at the initial stage of online learning affected the task completion effect. In addition, students were less efficient and distracted when switching tasks, especially in the transition from online independent learning to offline classroom interactions, which required additional guidance from teachers.

Some students reported that online tasks are large and repetitive in content, which increases the learning burden and weakens the enthusiasm for classroom participation. At the same time, the lack of close connection between online tasks and offline teaching activities also limits the maximization of learning effects to a certain extent. To address the above problems, the following optimization suggestions are made: first, enhance the close integration of online and offline content in task design, reduce repetitive tasks, and increase the interest and relevance. Customized video resources can be used to provide tiered learning paths for students at different levels, so that students can complete the learning tasks at their own pace. Second, optimize the task switching process to help students achieve a smooth transition between online learning and offline classroom activities through clear objectives and transition activities. Third, strengthen teachers' professional capacity in blended learning, especially in online resource design, data analysis and classroom management, and enhance teachers' comprehensive capacity through systematic training to better support students' learning. Finally, personalized tutoring is provided for students with weak skills or low motivation to learn, such as adding an instant feedback function in the online platform or arranging one-on-one guidance to help them overcome their learning difficulties.

This study provides empirical support for the blended learning model in vocational piano education, as well as important insights for future teaching practices. The application of emerging technologies (e.g., virtual reality and artificial intelligence) in piano education can be further explored in the future to assess their potential role in technical training and artistic expression development. Meanwhile, it is recommended to expand the scope of the research sample and combine student interviews and questionnaires to deeply analyze the adaptability and effectiveness of the blended learning model for students from different backgrounds. This will provide a reference for pedagogical innovation in vocational piano education and accumulate experience for the promotion of blended learning in other fields.

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