Game-Based Orff Music Teaching: Enhancing Pedagogical Skills in Chinese Normal College Music Programmes

Shaoshuai Ma[1,2]*, Pengfei Chen[1], * Huan Cao[1]

A R T I C L E   I N F O

A B S T R A C T

Aim: This research aimed to develop a game-based Orff music teaching course for music majors in regular Chinese colleges, with a specific focus on students in the music programme to improve their music teaching skills. At the outset, the study focused on creating a thorough course syllabus. **Method:** Afterwards, a quasi-experimental design was used to evaluate the effectiveness of the course. The curriculum development process consists of four stages: goal formulation, learning design, evaluation, and improvement. The experimental design included a group of 70 students who participated in the Orff music game teaching course, while a control group of 69 students received traditional music instruction. **Results:** The experiment lasted for a duration of eight weeks, with classes being conducted twice a week, resulting in a total of 16 lessons. Pre-tests and post-tests were conducted before and after the experiment, using musical performance as the measurement. **Conclusion:** The results indicate a notable improvement in the teaching skills of students who participated in the Orff music game-based teaching course in comparison to those who took regular music courses.

Introduction

Improving the teaching quality of music major subjects in regular colleges and special teacher training programs is a critical and challenging task (Lamont, 2011). Traditional colleges, known as "teacher training institutions," educate aspiring teachers. Regular college students are those who attend traditional colleges, like regular schools. They are referred to as regular college students because they are pursuing a career in education. These institutions, often referred to as 'teachers training institutions,' have a crucial role in shaping the future human capital by offering high-quality education to teachers. This

[1]Chinese International College, Dhurakij Pundit University, Bangkok, Thailand. Email: shaoshuaima246@gmail.com
[2]Music College, Heng Shui University, Heng Shui, China.
*Correspondence: blissfulalice@gmail.com

education is expected to have a positive influence on various educational institutions. The reason for targeting these students in the study is to enhance their teaching effectiveness through the application of contemporary teaching strategies. Many people recognize the Orff music teaching technique as a crucial pedagogy for enhancing teaching competencies in this field (Gotarkar & Ingole, 2018; Liu et al., 2023) (together with their co-travellers).

However, critics often criticize the traditional Orff method for its rigid structure, which can lead to student boredom despite frequent practice (Kaikkonen & Kivijärvi, 2013; ZiXuan & Devarajoo, 2021). The Orff music teaching technique is a practical and widely incorporated method that enhances teaching skills for students. Prior studies have demonstrated the efficacy of Orff music education concepts in music classes, highlighting their potential to enhance student engagement in music (Gotarkar & Ingole, 2018). In addition, the Orff music teaching method has been acknowledged for its ability to improve the learning experience for music majors (Qiuju et al., 2023) and foster students' development of music literacy and innovative thinking (Wang, 2010). Tabuena (2021) has demonstrated that incorporating Orff's ideas into music lessons significantly enhances the diverse inclusion of students in music, leading to an improvement in the quality of music education.

However, the conventional Orff music teaching method is highly structured, detailed, and requires strict adherence to rhythm and groove regulations (Kaikkonen & Kivijärvi, 2013; ZiXuan & Devarajoo, 2021). Therefore, the course structure may become monotonous over time, as noted by several researchers (Benedict, 2009; Kaikkonen & Kivijärvi, 2013; Li, 2015; Xiong, 2020). Nevertheless, the implementation of the Orff method presents a few challenges, including the need for better control and organisation of students by another teacher, as well as their lack of enthusiasm (Wang, 2010). Given the connection between games and music, incorporating games into the learning process can enhance the enjoyment of learning (Phillips, 2014). Multiple studies have indicated that the implementation of game-based courses has the potential to enhance students' engagement and productivity (Gotarkar & Ingole, 2018; Karamitsos et al., 2020). However, there is a lack of comprehensive research on the impact of the game-based Orff music teaching method on the teaching abilities of music education majors in regular Chinese colleges.

This research study seeks to assess the efficacy of a game-incorporated Orff music teaching course in enhancing the teaching competencies of music education majors in these institutions. Focusing on pedagogical skills can directly enhance the professional teaching abilities of future music teachers, ensuring that these candidates are well-prepared to begin their teaching careers (Phillips, 2014). Therefore, by clearly stating this objective, we have shown that the study aims to enhance aspiring educators' teaching abilities. The target audience, typical college students, determines the research objective. This approach focusses on showing the effectiveness of the game-based Orff music teaching method and its impact on the pedagogical capabilities of future teachers. The goal is to showcase the benefits of this method and its ability to enhance the teaching-learning process. Regarding this matter, this study integrates the Orff method with game-based learning to enrich the teaching methods.

Games are designed to provide a more engaging and interactive approach to Orff music teaching, capturing the learners' attention through enjoyable activities. This change is

expected to increase student engagement and participation, resulting in a more lively and effective music learning experience (Phillips, 2014). Games can be a valuable addition to music education, as they bring an element of enjoyment that can help to increase students' engagement. Many students are naturally drawn to games, making them an effective tool for enhancing interest in learning (Gotarkar & Ingole, 2018; Karamitsos et al., 2020). This study seeks to develop and evaluate an Orff music teaching course that focusses on music game-based pedagogies for music education majors in regular Chinese colleges. The objective is to determine whether this innovative teaching model can enhance the effectiveness of the teaching profession for these aspiring music teachers. To conduct our study, we utilised a quasi-experimental design to compare the learning outcomes of two groups. One group participated in a game-based Orff music teaching course, while the other group followed a more traditional Orff music teaching course.

The rationale behind this study is the acknowledged need to discover fresh methods for enhancing aspiring music educators' teaching skills. While a significant amount of research already highlights the benefits of the Orff music teaching concept in enhancing music literacy and fostering creativity in students, further exploration is necessary to integrate game-based learning into Orff teaching. This would greatly enhance the effectiveness of music specialists and teachers in their training and impact on students. As a result, the goal of this study is to develop and evaluate a course for teaching Orff music using game-based strategies. Therefore, this research seeks to increase awareness regarding the advantages and constraints of these innovations to improve music education programmes and teacher training in Chinese colleges.

For this study, a teaching experiment was conducted with 139 music education majors from regular Chinese colleges who are training to become future teachers. The study consisted of two groups: one group received a game-based Orff music teaching course, while the other group received traditional Orff music instruction. Tests were administered before and after the instruction to assess the students' teaching proficiency in both groups. The following research questions guided our investigation: Accordingly, the research questions are shown as below:

1) Can a game-based Orff music teaching approach enhance the pedagogical skills of music education majors in regular Chinese universities?
2) Does participation in a game-based Orff music teaching course result in a difference in teaching proficiency among music education majors at regular Chinese colleges compared to those who do not participate?

This study aimed to improve the pedagogical skills of music education majors in Chinese regular colleges, which are institutions dedicated to preparing future teachers. To maximise the effectiveness of the Orff music teaching method, it is important to explore the integration of game-based learning. This will not only promote music literacy and innovative thinking among students, but also provide valuable insights for future music educators. This study aims to address a gap in the field by developing a game-based Orff music teaching course and evaluating its impact on the teaching abilities of music education majors. Prior studies have indicated that this approach can be challenging due

to its repetitive and inflexible nature, which frequently leads to a decline in students' motivation to learn (Csikszentmihalyi, 1991; Gotarkar & Ingole, 2018; ZiXuan & Devarajoo, 2021). In line with the objective of this study, we aim to incorporate game-based learning principles, which have been proven to improve students' focus and effectiveness in the course delivery system. This research aims to provide insights into the benefits of incorporating game techniques in Orff music teaching. By doing so, it aims to contribute to the enhancement of music programs and the better preparation of future music teachers.

Literature Review

Flow Theory and Game-Based Teaching

Game-based learning incorporates a widely recognised theory called flow theory, which plays a crucial role in the course design of this study. The concept of flow theory encompasses various aspects of the game experience, such as engagement, immersion, and presence (Abong et al., 2023; Procci et al., 2012). Flow is a state of complete focus and engagement in specific activities, where one can block out any unrelated emotions and thoughts (Csikszentmihalyi, 1991). According to flow theory, when a game can generate a flow experience, it becomes a highly effective and captivating educational tool. When music majors at Chinese regular colleges are in the optimal flow state, they feel positive and are fully focused on their teaching goals. Teaching activities that foster this experience allow students to learn in an enjoyable manner (Perttula et al., 2017).

Flow Theory in Educational Contexts

Flow theory, proposed by Csikszentmihalyi (1991), has been extensively examined and embraced in educational research, particularly in relation to the stimulation of student interest. Csikszentmihalyi defined flow as the optimal experience where individuals become fully absorbed in an activity. During this process, the activity appears effortless and enjoyable. This state is marked by a high level of focus and concentration on the task at hand, causing the individual to be oblivious to their surroundings. This concept has significant implications for education as a whole and the learning experience of students, as maintaining their engagement is an ongoing concern. In an educational context, flow is achieved when the level of challenge in an activity aligns with the learner's skill level. When tasks are too difficult or outside of the preferred level of challenge, students may become less interested in the material.

However, when faced with difficult tasks, students may experience pressure, become frustrated, and ultimately lose interest. Thus, the ideal state for effective learning is found in a balance between simplicity and complexity. It is crucial to set tasks that challenge students within their capabilities, without being too easy and risking disengagement. This fosters a harmonious equilibrium that leads to a sense of fluidity, a notion that enhances the process of acquiring knowledge (Csikszentmihalyi, 1991). Based on the flow theory, the design of game-based learning environments holds great importance. In these circumstances, the goal is to promote a balanced approach that fosters students' growth and proficiency, ensuring they can continue to learn with success. The inherent qualities of games include elements of flow, objectives, feedback, and the development of skills. These features help create an environment

where students are engaged and motivated to improve their academic performance.

When learners are in a state of flow, their motivation levels are high, which research has shown to be crucial for the learning process. Self-motivation refers to individuals being driven by the inherent pleasure of tasks rather than the rewards they can achieve. Scholars argue that self-generated interests are crucial for fostering learner engagement, persistence, and the pursuit of excellence in education. Flow theory provides a foundation for creating educational experiences that can captivate students' natural drive and improve their learning. Furthermore, by adhering to the principles of flow theory in the educational setting, it becomes feasible to foster self-regulated learners. Self-reorganisation involves determining the necessary tasks, evaluating progress towards completion, and focussing efforts on reaching the intended objective. Based on the flow theory, when students experience a state of flow, they tend to be driven by their own internal motivation and have specific learning goals that they are determined to achieve.

In addition, this type of learning expands the opportunities for immediate academic success and helps to cultivate students into lifelong learners. According to the flow theory, it is possible to create engaging educational activities in music. Music is highly compatible with flow principles due to its inherent structure and the need for dedicated practice and skill refinement. Thus, by organising music education activities in a manner that pushes students, teachers can easily tap into their enthusiasm and dedication in the classroom. When instructing students in intricate music concepts, it is beneficial to incorporate elements of play and improvisation into the activities. This helps stimulate the psychological engagement of the learners.

Application of Flow Theory in Music Education

Flow theory, when applied to music education, can be utilised to create learning experiences that are engaging and educational. As shown in Figure 1, according to the flow theory, a combination of different challenges and skill configurations would result in the formation of eight states. Based on Csikszentmihalyi's flow experience diagram from 1991, in conjunction with music education, the study shows that the music learning process involves four states: According to the flow experience diagram proposed by Csikszentmihalyi (1991), combined with music learning, the study shows that the music learning process involves four states:

1. Students become apathetic when the challenges of music literacy and learning tasks are low.
2. When the difficulty of music literacy is higher than the learning task, students may experience anxiety (Csikszentmihalyi, 1991).
3. When the difficulty of the learning task is higher than the level of music literacy, students may experience boredom (Csikszentmihalyi, 1991).
4. When students' musical literacy is improved through learning activities that are just as difficult as learning tasks, students achieve a state of flow and participate in learning activities spontaneously.
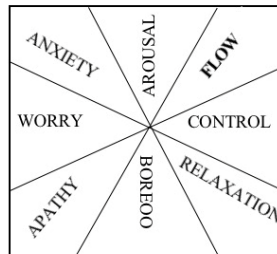
Figure 1: Flow characteristics include challenge and skill level (Perttula et al., 2017).

As depicted in Figure 1, varying levels of difficulty and proficiency result in eight distinct states. Based on Csikszentmihalyi (1991) flow experience diagram and its application to music learning, the process consists of four states. As depicted in Figure 1, according to the flow theory, varying levels of challenges and combinations of skills would result in eight distinct states. Based on Csikszentmihalyi (1991) flow experience diagram, the study reveals that the music learning process consists of four distinct states: a). When faced with low music literacy and learning tasks, students may find themselves feeling bored. However, this state of boredom is usually temporary (Zhang & Zhang, 2013).

The level of music literacy is more accessible than the learning task, and the students are feeling a sense of anxiety (Csikszentmihalyi, 1991). The level of music literacy surpasses the complexity of the learning tasks. At present, students are seeking a more engaging approach to learning, where they can actively participate in various learning activities (Csikszentmihalyi, 1991). Learning activities that match the complexity of the tasks enhance students' musical literacy. Students demonstrate a strong sense of engagement and actively participate in learning activities. As a result, the final skill has the potential to induce a state of flow. Based on the fourth state of flow experience, the study develops a course that incorporates game-based teaching methods. It carefully selects games and challenges of similar difficulty and ensures that the difficulty of the game matches the difficulty of the learning tasks. This approach aims to help students achieve a heightened state of flow. The primary objective of this study on course design is to approach teaching as a "game" and emphasise the significance of experience, thus establishing the groundwork for nurturing students' moral and aesthetic attributes (Plakhova et al., 2019).

Therefore, the study employs a curriculum that utilises game-teaching techniques. Games and challenges are carefully chosen and aligned with educational activities to achieve the four levels of flow gradually. Therefore, the emphasis is placed on creating an enjoyable learning environment and highlighting the importance of hands-on experience. This approach helps instil values of morality and aesthetics in students (Plakhova et al., 2019). The course system employs game-based pedagogy, connecting learners and teaching activities based on the game's challenge level and the objective of achieving flow. Scholars have suggested using game-based teaching methods to cultivate well-rounded traits (Huang et al., 2020) and enhance the effectiveness of instruction (Sivarajah et al., 2019). Flemban (2024) found that game features can influence the speed and effectiveness of learning. The course consists of four

primary combinations of games and teaching methods: In terms of categorising the concept of games, there are five types that have been defined. These categories include game-based concepts, conceptual games, simulation games, and personalised games.

By incorporating relevant literature into the work, the author establishes a solid foundation for formulating research questions and provides sufficient support for the arguments and issues discussed. By integrating the flow theory with the game-based teaching approach, it highlights the potential of the state of flow to enhance the student's learning experience. The course content for music education majors includes a discussion on flow theory, which emphasizes the potential of using games to establish a productive and efficient learning environment to achieve educational objectives. Furthermore, the examination of the Orff music teaching method also demonstrates its remarkable efficacy in fostering musical literacy and creativity. Nevertheless, there are certain limitations associated with its application in a more prescriptive manner and within traditional educational frameworks (Guibang et al., 2023; Pu et al., 2021).

For several compelling reasons, it is critical to integrate game-based learning with the Orff approach as the next step in the research. As a result, the study contributes to the development of future music educators' effective and professional abilities. Research in the field demonstrates the impact of student motivation, engagement, learning outcomes, and effectiveness, which supports the hypothesis that implementing a gamified Orff music teaching approach will greatly improve teaching proficiency. In addition to identifying a research gap, the literature review also offers a justification for the study, creating an appropriate framework for future research by evaluating previous studies. It is crucial to emphasise that applying the theoretical framework and the empirical data to the proposed research solidifies the validity of the chosen research approach and highlights its importance for music education.

Integrating Game-Based Learning with Orff Method

The Orff music teaching method is highly regarded, with a strong emphasis on fostering creativity and incorporating movement. It is closely linked to the pillars of flow theory. In the Orff method, there is a focus on structured music, behaviour, acting, and speaking during lessons, creating an atmosphere that resembles child's play. Nevertheless, the conventional Orff music teaching method follows a structured approach, which may become predictable and monotonous over time (Kaikkonen & Kivijärvi, 2013; Liu et al., 2023; ZiXuan & Devarajoo, 2021). This inflexibility has the potential to diminish students' motivation and interest. In order to address these issues, incorporating game elements into the learning and teaching process using the Orff method is believed to bring about a shift towards a more proactive approach. This implies that the game element is integrated into the lessons to alleviate the monotony of Orff's music teaching method and enhance the enjoyment factor. It is widely believed that this change can enhance students' engagement and involvement, resulting in a more dynamic educational experience and ultimately improving the effectiveness of music education (Phillips, 2014). Games are an integral part of the academic experience as they bring an element of fun to learning, thereby enhancing students' engagement and enthusiasm for lessons (Gotarkar & Ingole, 2018; Karamitsos et al., 2020).

Orff Music Teaching Method and Music Teaching Ability Index
Table 1
Teaching Ability Index of Normal College Students Majoring in Music by the American Orff-Schulwerk Association

Item	Level 1 index (Course objective)	Level 2 index (Ability index)
A	Language ability	A1 Can play the musical language and the requirements of music teaching activities. A2 Master 2/4, 3/4,4/4, and 6/8 simple beats A3 Master the ability to play a fixed tone by voice to accompany poetry A4 Master how to perform in a weak way A5 Be familiar with speaking and expressing in cadence
B	Vocal ability	B1 Use 2, 3, and 4 voices for rhythm echo, contrast, and improvisation B2 Have the ability to play 2/4, 4/4 and 6/8 interpretations B3 Can extract the rhythm from the language to play. B4 Understand and demonstrate the relationship between melody and momentum and the melodic nature of non-tonal percussion instruments
C	Singing ability	C1 Master the ability to sing melodies in 2/4, 3/4,4/4 and 6/8 C2 Understand the process of demonstrating the transition from speech to singing with sound. C3 The ability to sing folk songs C4 Can sing 'do' and 'la' into a melody. C5 Can accompany others with a fixed tone of pentatonic scales. C6 Can sing clips without momentum or instruments
D	Tonal instrument-playing ability	D1 Can play beats and rhythm D2 Can play a fixed tone. D3 Have the echo ability to play the rhythm. D4 Can play stress and non-stress D5 Can play the language rhythm. D6 Can jam in 2/4,4/4,3/4 and 6/8 D7 Can extract the rhythm from the language to play. D8: Have the ability to play the secondary, trionic, quadruple and pentacasound with the bar
E	Rhythm ability	E1 Master the beat and no beat, moving, and no moving rhythm E2 Can beat in the second beat, three beats, in line with the beat. E3 Can show weak rise and stress with rhythm. E4 Master the ability to contrast and change the rhythm E5 Master and be able to experience multiple levels of musical tonality and phrases
F	Improvisation ability	F1 Master question and answer improvisation skills F2 Can create the rhythm of poetry with 2/4,4/4 and 5/8 F3 Can create weak poetic rhythms. F4 Can improvise with complementary and fixed sounds. F5: Can play the three pentatonic scales with C, F, and G as 'do' notes and the three pentatonic scales with 'la' notes as A, D, and E on a note-bar instrument with correct playing techniques. F6 Can improvise with the pentatonic scales of 'do' and 'la.'
G	Teaching method ability	G1: The ability to analyse and compare the teaching procedures of the instructor in the introductory course G2: Can teach students to use a fixed tone to accompany a language segment through collective teaching. G3 Can analyse and discuss the teaching process of teacher demonstration songs.

Note: The teaching ability evaluation system of regular college students majoring in music by the American Orff-Schulwerk Association has seven ability objectives and a total of 37 indexes, Adapt from "The Orff Echo Index (1994-Present), The AOSA (2012) in the public domain.

An index for evaluating teaching ability has been developed, using the standards set by the AOSA (2012) and the characteristics of music students. Chinese college students studying music use this index to assess their teaching skills. Experts conduct rigorous testing to ensure the reliability and validity of the final index system. The training objectives encompass a range of skills, including language proficiency, vocal prowess, singing aptitude, proficiency in playing tonal instruments, rhythmic ability, improvisation skills, and expertise in teaching methods (Huang & Wang, 2021). as shown in Table 1.

Research Method

Research Procedure

This study utilises the flow theory and adopts a qualitative approach to course development. The initial step entailed creating the course. Upon completion of the course system, a panel of five experts conducted a thorough review to ensure its validity. The syllabus was then revised based on their valuable suggestions. The next stage involved a quasi-experiment. The experimental class utilised a game-based teaching approach, while the control class employed the traditional Orff teaching method.

Research Participants

To maintain the utmost accuracy and credibility of the study, a meticulous selection process was employed for research participants. During the initial course establishment stage, a panel of five experts, who have extensive experience in Orff music teaching, were chosen to review and score the courses. The experts were carefully selected for their vast knowledge and practical experience, guaranteeing a thorough evaluation and valuable input for the course design. During the quasi-experimental phase, the study centred around third-year music education majors from an average Chinese university, who were specialising in becoming future teachers. A group of 139 students, ranging in age from 20 to 23, were chosen for the study. This age group is crucial in their development as future educators, making them highly suitable candidates for this research. The sample was divided into two groups: an experimental class consisting of 70 students and a control class consisting of 69 students.

The participants were chosen based on their alignment with the study's goals. Specifically, students majoring in music education were selected to improve their pedagogical skills using the Orff music teaching method. Every class had over 40 students, meeting the criteria proposed by Ye (2017) for an ideal sample size in educational research. This ensured that the sample size was adequate to generate statistically significant findings. The chosen students were from a standard college, an institution with a specific focus on preparing future teachers. This is essential as the study aims to enhance the teaching skills of upcoming educators. Third-year students were selected for this study due to their advanced level of education and their growing emphasis on practical teaching skills. This cohort is ideal for evaluating the effectiveness of the game-based Orff music teaching approach.

Course Establishment

This study explores the integration of game-based teaching and the Orff teaching

method to enhance students' engagement and motivation, resulting in improved teaching skills and learning outcomes in a state of flow. Using the objectives and competency indicators outlined in Table 1, the study has developed the courses specified in Table 2.

Table 2

The Overall Design of The Orff Music Teaching Method Course

Item	Unit Theme	Teaching Objective	Teaching Method	Activity Name	Teaching Hour	Teaching Evaluate
A	Language	A1; A2; A3	The combination of game-based concept and Orff teaching method	Find Friends	2	Expert review
B	Vocal	B1; B2; B3	The combination of collaborative games and the Orff teaching method	Welcome to My House	2	Expert review
C	Singing	C1; C2; C3	The combination of collaborative games and the Orff teaching method	Do Exercises with Me	2	Expert review
D	Tonal instrument playing	D1; D2; D3	The combination of simulation games and the Orff teaching method	Blow Bubbles	2	Expert review
E	Rhythm	E1; E2; E3; E4	The combination of simulation games and the Orff teaching method	The Car is Coming	2	Expert review
F	Improvisation	F1; F2; F3; F4	The combination of personalised games and the Orff teaching method	Little Rabbit, Open the Shop	2	Expert review
G	Teaching method	G1; G2; G3	The combination of personalised games and the Orff teaching method	Learn to Be a Teacher	4	Expert review

In the language teaching unit, the study gradually introduces the music language of varying difficulty levels, in accordance with the requirements of the flow state. A teaching approach that integrates game-based concepts and the Orff teaching method is utilised to instruct music students in "Find Friends," enabling them to grasp musical activities through the use of games. The vocal and singing teaching unit utilises collaborative games and incorporates Orff teaching methods to enhance sound exercises, as highlighted in a study by Guo (2018). The instruction offers a wide range of chances for vocal expression through engaging music activities and interactive role-playing, like the popular game "Welcome to My Home" (Hanley & Montgomery, 2005; Song & Wang, 2020). To conduct singing exercises and other activities for collaborative training, singing teachers use collaborative games (Yun & Kim, 2013). The unit focuses on the performance of tonal instruments and their relationship to rhythm. The study replicates the performance of tonal instruments using simulated games like "Blowing Bubbles" and incorporates rhythm training by imitating the sounds of small animals with the assistance of "The Car is Coming." The teaching unit focused on the art of improvisation and effective teaching methods: The integration of personalised games and the Orff teaching method gently guides students to engage in creative activities and gain practical experience. Exploring the realms of education involves delving into the depths of characters' emotions and thoughts as they engage in interactive games and conversations with fellow students (Sungurtekin et al., 2009).

A musical performance serves as the final assessment. Five highly experienced experts in the Orff music teaching method have been invited to evaluate the musical performance of each group of music students. They will evaluate the students based on seven different ability indicators. Each class comprises 12 groups, each with 3-5 music-specialist college students showcasing their musical theatre talents. The pre-test performance lasts three minutes, while the post-test performance lasts fifteen minutes. Five experts receive the live video recording and assign scores ranging from 1 to 5, with higher scores indicating stronger teaching ability. Five experts reviewed the Orff music teaching course after its establishment. Five experts independently scored the data using a scale of 1 (agree), 2 (need modification), and 3 (disagree). The initial KAPA coefficient was low. After modification, the overall Kappa coefficient improved from .600 to .765, indicating increased reliability. Additionally, Cronbach's alpha increased to .865, further supporting the good reliability and validity of the measures (Taber, 2018).

Pre-Test and Post-Test

The study employs musical demonstrations as both the pre-test and post-test measures to evaluate the teaching proficiency of undergraduate music majors. The assessment

concludes with a review of the musical performance. To assess the performances, the study involves five specialists with extensive experience in the Orff music teaching approach, each with over ten years of expertise. Their assessments rely on seven key ability indicators. Twelve groups, each comprising three to five music students from regular Chinese colleges, divide the class. These groups are assigned the task of staging a musical theatre piece. The first performance has a time limit of 3 minutes, while the second performance extends to 15 minutes. The experts evaluate a live recording of these performances using a scoring system ranging from 1 to 5 points, with higher scores indicating greater teaching proficiency.

Results

Descriptive Statistics

The study included 70 students in the experimental class, with 60.000% girls and 40.000% boys. The control class consisted of 69 students, with 60.869% girls and 39.130% boys. The gender ratio in this study aligns with the ratio of regular college students in Chinese colleges. Additionally, there is a higher representation of female teachers in the art field (Ao & Lin, 2020; Ullah et al., 2020).

Differences Within Classes

Table 3
A paired sample t-test of pre-test and post-test of teaching ability of experimental class and control class

| Dimension | Group | Number | Pre-test M (S.D.) | Post-test M (S.D.) | Correlations test in pre-test and post-test | | *t* | *p* |
					Correlation coefficient	*p*		
Language	Experimental class	12	1.157 (.472)	3.261 (.433)	.464	.002	2.160	.002
	Control class	12	1.153 (.106)	2.166 (.328)	.553	.024	.462	.018
Vocal	Experimental class	12	1.221 (.478)	2.871 (.426)	.652	.000	1.786	.032
	Control class	12	1.189 (.206)	2.237 (.172)	.714	.018	1.285	.075
Singing	Experimental class	12	1.228 (.272)	2.672 (.363)	.578	.002	1.957	.038
	Control class	12	1.235 (.102)	1.877 (.328)	.472	.024	1.713	.038
Tonal instrument playing	Experimental class	12	1.121 (.478)	1.771 (.426)	.774	.000	2.353	.312
	Control class	12	1.206 (.006)	1.715 (.018)	.684	.263	1.562	.282
Rhythm	Experimental class	12	1.307 (.018)	3.210 (.325)	.673	.000	2.762	.004
	Control class	12	1.310 (.007)	2.937 (.280)	.589	.000	.575	.008
Improvisation	Experimental class	12	1.152 (.117)	3.810 (.421)	.468	.001	1.977	.014
	Control class	12	1.211 (.168)	3.251 (.670)	.438	.001	1.677	.140
Teaching method	Experimental class	12	1.257 (.117)	3.917 (.182)	.652	.000	2.196	.000
	Control class	12	1.208 (.019)	3.353 (.375)	.676	.000	2.042	.103
Teaching ability (totally)	Experimental class	12	1.206 (.018)	3.073 (.421)	.672	.000	2.671	.003
	Control class	12	1.216 (.025)	2.505 (.173)	.574	.008	2.027	.042

Note: The table was built by the research.
The homogeneity test was conducted to analyse the pre-test scores. The results showed that F =.003, p = 1.000, indicating that the difference was not statistically significant.

The experimental group had a mean value of 1.208, while the control group had a mean value of 1.216, indicating that the experimental benchmark points of the two classes were homogeneous. Table 3 illustrates the use of a paired sample t-test to assess the outcomes of the groups before and after the intervention. The results indicate that the experimental class showed a significant improvement in teaching ability after implementing the game teaching method. The average post-test score (M = 3.073, SD =.421) was significantly higher than the pre-test score (M = 1.206, SD =.018). However, the dimension of tonal instrument performance ability (t = 2.353, p =.312) does not show statistical significance. The Orff teaching method has the potential to enhance music students' musical development.

Following the teaching experiment, the control class's teaching ability significantly improved. The average teaching ability value in the post-test (M = 2.505, SD =.173) was significantly higher than that in the pre-test (M = 1.216, SD =.025). The results of the t-test for paired samples indicate that there were no significant improvements in the vocal (t=1.285, p=.075), improvisation ability (t=1.677, p=.140), tonal instrument performance ability (t=1.562, p=.282), and teaching method ability (t=2.042, p=.103). The Orff teaching method has the potential to enhance the development of music students' vocal music potential, improvisation ability, teaching method ability, and tonal musical instrument playing ability.

Comparative Analysis of The Post-Test Results Between the Experimental Class and The Control Class

Table 4

Independent Sample T-Test of Pre-Test and Post-Test of Teaching Ability of Experimental Class and Control Class

Dimension	Group	Group	M	SD	t	p
Language	Experimental class	12	3.261	.433	.441	.073
	Control class	12	2.166	.328		
Vocal	Experimental class	12	2.871	.426	1.168	.030
	Control class	12	2.237	.172		
Singing	Experimental class	12	2.672	.363	2.173	.078
	Control class	12	1.877	.328		
Tonal instrument playing	Experimental class	12	1.771	.426	1.256	.108
	Control class	12	1.715	.018		
Rhythm	Experimental class	12	3.210	.325	1.032	.066
	Control class	12	2.937	.280		
Improvisation	Experimental class	12	3.810	.421	.877	.024
	Control class	12	3.251	.670		
Teaching method	Experimental class	12	3.917	.182	1.018	.017
	Control class	12	3.353	.375		
Teaching ability (totally)	Experimental class	12	3.073	.421	1.233	.012

Note: The table was built by the research.

Table 4 displays a statistically significant disparity in the teaching ability post-test scores between the control and experimental classes (t=1.233, p=.012). The mean teaching

ability of music students in the experimental class was significantly higher than that of the control class, particularly in vocal ability (t=1.168, p=.030), improvisation ability (t=.877, p=.024), and teaching method ability (t=1.018, p=.017). The addition of a game teaching course to the Orff music teaching method course resulted in a statistically significant improvement in the teaching ability of students in the experimental class. The results demonstrate a significant improvement in the vocal, improvisation, and teaching method abilities of the experimental class compared to the control class. There was no significant difference between the game teaching methods in other dimensions for the two classes.

Covariance Analysis Between Experimental Class and Control Class

This study utilised analysis of covariance (ANCOVA) to compare the learning outcomes of the experimental class and the control class. The two classes were also assessed for homogeneity in music teaching ability (p>.05). The data regression coefficients of the two classes are homogeneous. The prerequisite includes the analysis of covariance. The regression coefficient within groups is homogeneous, allowing for subsequent linear analysis of covariance. The descriptive statistics in Table 5 indicate that the mean value of music teaching ability is higher in the experimental class compared to the control class.

Table 5

Descriptive Statistics of The Experimental Class and the Control Class

Group	M	SD	Group
Experimental class	3.073	.421	12
Control class	2.505	.173	12
Total	2.789	.297	24

Note: The table was built by the research.

Subsequently, the study employed the Levene test for homogeneity of variance to examine if there are noticeable variations in the fluctuation situation (standard deviation) of the data in each group. Based on the results of the Levene homogeneity of variance test, the different categories of samples did not exhibit any significant differences in the pre-test mean score (p=.718>.05). This indicates that the sample data from different categories are consistent with the volatility of the average pre-test score, and the two classes in the pre-test have similar levels of variability. Therefore, the two groups meet the necessary requirements for conducting variance analysis (equal variance). One can utilise variance analysis to examine the disparity.

This study analysed the teaching ability of the experimental class and control class based on the average score of teaching ability among regular music professional students in each group. The main objective of this study is to analyse how game teaching methods impact the teaching ability of music students while minimising any external factors that may affect the results. According to the findings in Table 6, the ANCOVA analysis revealed significant differences between groups (F=.059, p=.01). All these differences were found to be statistically significant (p<.05). In other words, the teaching ability of music students can be seen as varying across different groups. The analysis is presented in Table 7. The experimental group utilised the game teaching method in their course experiment, while the control group did not

incorporate this method. The adjusted mean of teaching ability in the experimental group is expected to be significantly higher than the adjusted mean value of the teaching ability of the control group. There are notable disparities in the teaching effectiveness of the music students following the incorporation of the game-based teaching approach. This method demonstrates a higher level of music teaching ability in music students compared to those who receive traditional instruction. The game-teaching method has a beneficial impact on enhancing the overall music-teaching skills of university students majoring in music.

Tabe 6

Results of the ANCOVA

Item	Detection of differences between the groups				
	SS	*df*	*M.S.*	*F*	*p*
Pre-test	.001	1	.001	.059	.001
Group	2.048	1	2.048	84.306	.000
Deviation	.510	21	.024		
Total	184.456	24			

Note: The table was built by the researcher.

Table 7

Results of Adjusting Mean Scores

Group	Adj. *M*	*SD*	Group
Experimental class	3.070	.047	12
Control class	2.428	.032	12

Note: The table was built by the research.

The results presented above demonstrate the effectiveness of various teaching methods in enhancing students' teaching abilities, particularly in terms of age and instructional approaches. The traditional Orff teaching method has been found to enhance the teaching skills of music students with average abilities. However, there is a slight difference between the game teaching method and the traditional Orff teaching method when it comes to students' teaching ability. The experimental class enhances the improvisation skills of average music students, while the control class shows significant improvement in singing ability. On the other hand, the experimental class examined seven dimensions in the correlation before and after each dimension, while the control class only had a significant impact on six dimensions. Based on the data, it is evident that the experimental class, which used the game teaching method, demonstrated a superior improvement in their improvisation ability. Furthermore, the inclusion of the enhanced Orff music teaching method course has led to a notable improvement in the students' academic performance in the experimental class. The results surpass those of the control class, particularly in the development of language skills, rhythm proficiency, improvisation aptitude, and teaching competence. In other dimensions, there were no notable differences between the game teaching methods for the two classes. Ultimately, professional university students trained in the game teaching method tend to possess superior music teaching abilities compared to those trained in the traditional teaching method. The game-teaching method has a positive impact on the average music student's overall ability to teach music.

Discussion

The Game-Based Teaching Method Effectively Improves the Teaching Ability of Average Chinese College Students Majoring in Music

In regards to language proficiency, Luo and Saihong (2023) incorporated a game-based teaching approach to improve language expression skills, a finding that is supported by the current study. According to this study, the students in the experimental group who were taught using a game-based method showed a significant improvement in their language ability, as evidenced by their higher post-test scores compared to their pre-test scores. According to Pereverzeva et al. (2021), collaborative games have been suggested as an effective method to enhance the vocal ability of average students majoring in music during primary school music teaching. In this study, the teachers consistently modified the rhythm and pace of the "Welcome to My Home" teaching activity, while fostering collaboration among the groups through in-game competitions. In contrast to the study conducted by Pereverzeva et al. (2021), this study discovered that engaging in collaborative games can effectively enhance students' vocal ability. Furthermore, students who actively participate in these games demonstrate significant improvements in their singing and improvisation skills.

In relation to singing ability, Muhonen (2016) suggested that students can enhance their artistic skills by engaging in collaborative games. Muhonen (2016) discovered that collaborative games have the potential to enhance students' artistic skills and boost their singing abilities. In a study conducted by Richardson and Kim (2011), electronic simulation games were utilised as a teaching tool for musical instrument playing. The study's goal was to determine whether these games could improve the tonal musical instrument playing ability of average music students. The study revealed an improvement in the participants' proficiency in playing musical instruments. In contrast to the results of Richardson and Kim (2011), the current study did not observe a connection between engaging in simulation play and proficiency in playing tonal instruments. This study suggests that the feedback mechanism in simulation games aligns with the feedback found in real-life performance (Plut & Pasquier, 2020). While simulation games can be helpful in enhancing students' musical instrument playing abilities, it's important to note that they cannot fully replace hands-on practice and real-life experience.

In terms of rhythm ability, Richards (2023) suggested that simulation games can help children develop and improve their rhythm skills through gameplay. The experiment replicated classroom activities by utilising "The Car is Coming" and incorporated music to mimic the rhythm of the car's acceleration and deceleration. The study revealed a notable enhancement in rhythmic ability, building upon the findings of Richards (2023). This suggests that simulation games have a significant impact on improving the rhythmic skills of adults. According to Michalakos (2021), improvisation games can improve students' stage performance and their ability to adapt in improvisational situations. The findings of this study support the notion that music improvisation games can enhance students' improvisational skills. Furthermore, the experiment revealed that personalized games can have a positive impact on students' abilities in this area (Muhammad, 2022).

Regarding teaching method ability, the experiment utilises the "Learning to Be a teacher"

activity, where the teacher randomly assigns five musical instruments to the students in the experimental class. The teacher requested that students who were given the same instrument come together as a group to discuss strategies for utilising the instrument in teaching music courses for kindergarten students. The research findings revealed a significant improvement in the average scores of these students on the teaching method dimension in the post-test.

Differences in the Teaching Ability of Chinese Average College Students Majoring in Music Trained Using Game-Based Teaching Method and Non-Game-Based Teaching Method

The traditional Orff teaching method has limited impact on vocal ability, whereas the game-based teaching method has a significant positive effect on vocal ability. Vocal training is an effective musical activity (Cui, 2023). Pereverzeva et al. (2021) conducted a survey among underage students and found that the majority believed that game-based teaching improved their vocal ability. The study also extended the perspective of Pereverzeva et al. (2021) by including adults as research subjects. Game-based teaching methods enhance vocal ability in both minors and adults. The effectiveness of the traditional Orff teaching method in enhancing improvisation ability is limited, whereas the game-based teaching method has been found to have a significant positive impact on improvisation ability. The traditional Orff teaching method classroom is characterised by a dominant role of teachers, limiting students' ability to exercise their subjective initiative. This approach does not align with the needs of college students majoring in music who aim to enhance their improvisational skills (Guo, 2018). Chinese college students majoring in music can utilise the game-based teaching method to improvise and refine their music creations based on their individual strengths through in-game activities.

The effectiveness of the traditional Orff teaching method in enhancing teaching abilities is limited. The game-based teaching method can greatly enhance teaching effectiveness. Currently, Chinese college students primarily acquire knowledge on teaching methods through rote memorisation during their study phase (Spruce et al., 2021). The game-based teaching method involves the use of games by teachers to foster students' enthusiasm for learning during the teaching process (Yulisetiana, 2019). The game teaching method in music education can effectively enhance the teaching ability of college students majoring in music.

Conclusion

The study revealed that Chinese college students majoring in music who received game-based teaching methods demonstrated superior music teaching abilities compared to those who received traditional teaching methods. The utilisation of game-based teaching methods has a positive impact on the development of music-teaching skills among Chinese college students who are pursuing a music major. There are variations in the teaching abilities of average Chinese college students majoring in music when using game-based and non-game teaching methods. Orff courses that do not incorporate a game-based teaching method have limited impact on the development of vocal and improvisational skills. The inclusion of various forms of game-based teaching, such as simulation games, assisted games, and personalised games, in an experimental study resulted in significant improvements in the vocal ability, improvisation

skills, and teaching method abilities of college students majoring in music. Future research should address the limitations of the research sample's insufficient representativeness and reliance on a single research method. It is recommended that future studies investigate the teaching abilities of average Chinese college students majoring in music in various regions to broaden the scope of applicable research and enhance representativeness. Future research should employ a more scientific and rigorous experimental design, incorporating diverse research methods and data analysis techniques. The researchers may conduct comprehensive and in-depth research on the teaching ability of Chinese college students majoring in music by combining questionnaires and interviews.

References

Abong, E. M., Casila, C. J., Lumao, K. G., Pepito, M. J., Ynoy, L. J., & Talaboc, D. (2023). Alignment of the USJ-R BSA and BSMA 4th Year Students' IT Skills with the Entry-level IT Skills Deemed Important in the Accounting Industry in Cebu City, Philippines. United Frontiers Conference Proceedings (UFCP), *1*(1), 16. https://doi.org/10.56868/ufcp.v1i1.19

Ao, J., & Lin, L. C. (2020). The current situation causes and countermeasures of the "feminisation" of the gender structure of primary and secondary school teachers. *Ethnic Education Research*, *2*, 54-62. http://qikan.cqvip.com/Qikan/Article/Detail?id=7101823590

AOSA (American Orff-Schulwerk Association). (2012). *What is Orff-Schulwerk*. American Orff-Schulwerk Association-Music and Movement Education. https://aosa.org/about/what-is-orff-schulwerk/

Benedict, C. (2009). Processes of alienation: Marx, Orff and Kodaly. *British Journal of Music Education*, *26*(2), 213-224. https://doi.org/10.1017/S0265051709008444

Csikszentmihalyi, M. (1991). Flow: The psychology of optimal experience. *The Academy of Management Review*, *16*(3), 636-640. https://doi.org/10.2307/258925

Cui, Y. (2023). Higher Music Education Teaching Based on the Core Accomplishments of Music Subject. *Curriculum and Teaching Methodology*, *6*(7), 123-130. https://doi.org/10.23977/curtm.2023.060720

Flemban, F. Y. (2024). Assessing Learning Outcomes Through Digital Game-Playing: A Systematic Literature Review. *International Journal of Learning, Teaching and Educational Research*, *23*(1), 445-468. https://doi.org/10.26803/ijlter.23.1.22

Gotarkar, S., & Ingole, A. (2018). Knowledge of Anganwadi workers concerning early childhood development. *Journal of Datta Meghe Institute of Medical Sciences University*, *13*(4), 168-170. https://doi.org/10.4103/jdmimsu.jdmimsu_92_17

Guibang, L., Dong, Y., & Anqi, L. (2023). Ideological and Political Education from the Marxist Perspectives on Marriage and Love: A Case Study of Guizhou Qiannan College of Economics. *Journal of Advances in Humanities Research*, *2*(3), 170-201. https://doi.org/10.56868/jadhur.v2i3.183

Guo, W. (2018). The practice and research of Orff's music teaching method in contemporary Chinese music teaching. 2018 3rd International conference on humanities science, management and education technology (HSMET 2018), Atlantis Press, 434-442. https://doi.org/10.2991/hsmet-18.2018.85

Hanley, B., & Montgomery, J. (2005). Challenges to music education: Curriculum reconceptualized. *Music Educators Journal*, *91*(4), 17-20. https://doi.org/10.2307/3400153

Huang, J., & Wang, W. (2021). Based on the original music teaching concept of Guangdong folk music teaching exploration. *Advanced Education Research*, *12*(1), 44-62. https://doi.org/10.12677/AE.2022.121009

Huang, S.-Y., Kuo, Y.-H., & Chen, H.-C. (2020). Applying digital escape rooms infused with science teaching in elementary school: Learning performance, learning motivation, and problem-solving ability. *Thinking Skills and Creativity*, *37*, 100681. https://doi.org/10.1016/j.tsc.2020.100681

Kaikkonen, M., & Kivijärvi, S. (2013). Interaction Creates Learning: Engaging Learners with Special Educational Needs trough Orff-Schulwerk. *Music Therapy & Special Music Education*, *5*(2), 132-137. https://doi.org/10.56883/aijmt.2013.451

Karamitsos, I., Albarhami, S., & Apostolopoulos, C. (2020). Applying DevOps practices of continuous automation for machine learning. *Information*, *11*(7), 363. https://doi.org/10.3390/info11070363

Lamont, A. (2011). The beat goes on: Music education, identity and lifelong learning. *Music Education Research*, *13*(4), 369-388. https://doi.org/10.1080/14613808.2011.638505

Li, C. (2015). Development of music education specialities in conservatories of music in China. 3rd International Conference on Management, Education, Information and Control 2015, Shenyang, China, 1527-1532. https://www.atlantis-press.com/proceedings/meici-15

Liu, Y., Xiong, M., Mo, R., Song, L., & Liu, J. (2023). Parental Involvement and Children's Positive and Negative Emotion: The Mediating Role of Academic Stress. *Journal of Advances in Humanities Research*, *2*(2), 86-97. https://doi.org/10.56868/jadhur.v2i2.146

Luo, N., & Saihong, P. (2023). Developing Music Instructional Model to Enhance Children's Music Perceptions and Group Co-Ordination ability for kindergarten in Jiangxi Province, China. *Journal of Survey in Fisheries Sciences*, *10*(2S), 2161-2174. https://doi.org/10.17762/sfs.v10i2S.1150

Michalakos, C. (2021). Designing musical games for electroacoustic improvisation. *Organised Sound*, *26*(1), 78-88. https://doi.org/10.1017/S1355771821000078

Muhammad, N. (2022). Analyzing the Role of Media Causing Conflict in the Conflict-affected Areas, A Case Study of the Northwest Province of Pakistan. *Journal of Advances in Humanities Research*, *1*(2), 32-45. https://doi.org/10.56868/jadhur.v1i2.33

Muhonen, S. (2016). *Songcrafting practice: A teacher inquiry into the potential to support collaborative creation and creative agency within school music education*, 1-233. https://taju.uniarts.fi/bitstream/handle/10024/6572/muhonen_songcrafting_2016_studiamusica67.pdf?sequence=1&isAllowed=y

Pereverzeva, M., Anufrieva, N., Shcherbakova, A., Kuznetsova, E., & Zharkova, A. (2021). Analysis of research on active music teaching at primary education: The case of Russia. *Rast Journal of Musicology*, *9*(2), 2739-2756. https://doi.org/10.12975/rastmd.2021922

Perttula, A., Kiili, K., Lindstedt, A., & Tuomi, P. (2017). Flow experience in game based learning–a systematic literature review. *International Journal of Serious Games*, *4*(1), 57-72. https://doi.org/10.17083/ijsg.v4i1.151

Phillips, W. (2014). *A composer's guide to game music*. The MIT Press, 288. https://www.jstor.org/stable/j.ctt9qf710

Plakhova, E. A., Kharapudko, E. N., & Nurmieva, R. R. (2019). Game techniques are a method of intensifying the educational process of teaching a foreign language. *Humanities & Social Sciences Reviews*, 7(6), 38-44. https://doi.org/10.18510/hssr.2019.769

Plut, C., & Pasquier, P. (2020). Generative music in video games: State of the art, challenges, and prospects. *Entertainment Computing*, *33*, 100337. https://doi.org/10.1016/j.entcom.2019.100337

Procci, K., Singer, A. R., Levy, K. R., & Bowers, C. (2012). Measuring the flow experience of gamers: An evaluation of the DFS-2. *Computers in Human Behavior*, *28*(6), 2306-2312. https://doi.org/10.1016/j.chb.2012.06.039

Pu, S., Ahmad, N. A., & Khambari, M. N. M. (2021). Identification and Analysis of Core Topics in Educational Artificial Intelligence Research: A Bibliometric Analysis. *Cypriot Journal of Educational Sciences*, *16*(3), 995-1009. https://doi.org/10.18844/cjes.v16i3.5782

Qiuju, L., Pattananon, N., & Sukhumvat, S. (2023). Applying Carl Orff method in preschool music education in China. *Journal of Modern Learning Development*, *8*(4), 283-290. https://so06.tci-thaijo.org/index.php/jomld/article/view/259959

Richards, J. E. (2023). *Discovering the Pedagogy and Secrets of Gamification and Game-Based Learning Applied to the Music Theory Classroom* Liberty University, 220. https://digitalcommons.liberty.edu/doctoral/4738/

Richardson, P., & Kim, Y. (2011). Beyond fun and games: A framework for quantifying music skill developments from video game play. *Journal of New Music Research*, *40*(4), 277-291. https://doi.org/10.1080/09298215.2011.565350

Sivarajah, R. T., Curci, N. E., Johnson, E. M., Lam, D. L., Lee, J. T., & Richardson, M. L. (2019). A review of innovative teaching methods. *Academic radiology*, *26*(1), 101-113. https://doi.org/10.1016/j.acra.2018.03.025

Song, P., & Wang, X. (2020). A bibliometric analysis of worldwide educational artificial intelligence research development in recent twenty years. *Asia Pacific Education Review*, *21*(3), 473-486. https://doi.org/10.1007/s12564-020-09640-2

Spruce, G., Marie Stanley, A., & Li, M. (2021). Music teacher professional agency as challenge to music education policy. *Arts Education Policy Review*, *122*(1), 65-74. https://doi.org/10.1080/10632913.2020.1756020

Sungurtekin, Ş., Sezer, G. O., Bağçeli-Kahraman, P., & Sadioğlu, Ö. (2009). The views of pre-service teachers about creative drama: A study according to gender. *Primary Education Online*, *8*(3), 755-770. https://ilkogretim-online.org/index.php/pub/article/view/3595

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education*, *48*, 1273-1296. https://doi.org/10.1007/s11165-016-9602-2

Tabuena, A. C. (2021). Carabo-Cone, Dalcroze, Kodály, and Orff Schulwerk methods: An explanatory synthesis of teaching strategies in music education. *International Journal of Asian Education*, *2*(1), 9-16. https://doi.org/10.46966/ijae.v2i1.88

Ullah, S., Guoqiang, H., Khan, U., & Niazi, K. (2020). State, religion and the marginalisation of traditional healing in Gwadar, Pakistan. *Medical Humanities*, *46*(4), 444-453. https://doi.org/10.1136/medhum-2019-011747

Wang, D. P. C. (2010). The Effective Teaching of Comparing Orff Music Method with Traditional Music Approach for Music Reading and Melodic Patterns Singing for 3rd Grade Elementary Students in Taiwan. *US-China Educational Review*, *7*, 43-52. https://api.semanticscholar.org/CorpusID:140354287

Xiong, Y. (2020). A Brief Analysis of the Development History of Chinese Confucian Music Aesthetic Thoughts. *International Journal of Social Science and Education Research*, *2*(11), 54-55. https://doi.org/10.6918/IJOSSER.202001_2(11).0010

Ye, C. (2017). *Educational research methods*. Psychology Press.

Yulisetiana, F. (2019). Fun Piano Lesson for Young Beginners Students in Surabaya Indonesia. *International Journal of Indonesian Education and Teaching*, *3*(2), 169-177. https://doi.org/10.24071/ijiet.2019.030204

Yun, Y.-B., & Kim, J.-E. (2013). The effects of the Orff approach on self-expression, self-efficacy, and social skills of children in low-income families in South Korea. *Child Welfare*, *92*(4), 123-158. https://www.jstor.org/stable/48623406

Zhang, J., & Zhang, B. (2013). Application of game based learning in flipped classroom. *Journal of Distance Education*, *31*(1), 73-78.

ZiXuan, L., & Devarajoo, K. (2021). The Strategies of Teaching Basic Piano Courses For Preschool Education Major in China. *International Journal of Infrastructure Research and Management*, *9*(2), 20-33. https://iukl.edu.my/rmc/wp-content/uploads/sites/4/2022/02/3.-Lin-ZiXuan_compressed.pdf