ASIAN PENDIDIKAN

The Design and Development of a Gamification Teaching Methods Based on a Focus Group Interview

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Abstract: This article aims to explore the practical and theoretical basis of teaching Chinese folk songs through gamification teaching methods. This is a qualitative study that includes a focus group interview consisting of five experts with over ten years of experience in the field of music education. To determine the effectiveness of teaching methods, three experts evaluated teaching strategies in the fields of education, linguistics, and qualitative research. Use Cohen's kappa analysis to evaluate the consistency between evaluators. Research has found that a series of teaching projects have been developed based on six teaching constructs, which are feedback, competition, goals, collaboration, challenge, and fun. After the focus group interview, a new construction also emerged, cognitive reaction. This study suggests that teachers can use this teaching checklist for early identification and appropriate intervention of students, which has significant benefits for the education sector, teachers, and students themselves. Although this study was conducted in China, its results have broader significance as gamification teaching methods have the potential to be applied globally.

Keywords: Gamification, Chinese folk songs, music education, learning motivation, teaching innovation

1.   Introduction

Chinese folk songs have a long and profound history, expressing the genuine thoughts of the people and containing the wisdom of the working people (Li, 2024). Currently, the music discipline is gradually receiving attention, but there is relatively little research on folk song teaching, and related teaching experience is also lacking. Folk songs are products of the lives and labour of compatriots from various ethnic groups, with their own unique style and characteristics, and are a way of expressing national culture (Ma, 2022). Folk songs have strong transmission and strong ethnic characteristics, expressing the thoughts, emotions, and wills of working people of different ethnic groups, and have important teaching value (Sundaram & Saravanakumar, 2019).

Adding Chinese folk songs to music teaching can enable students to experience the unique charm of folk songs and the diversity of music culture in the process of learning folk songs and develop a deeper understanding and comprehension of music (Dunbar & Cooper, 2020). Folk song teaching not only enriches the content of music teaching and to a certain extent stimulates students' interest in learning music, but also permeates national culture (Margoudi et al., 2017). Moreover, while mastering rich singing skills, students can also understand the humanistic thoughts and cultural connotations of different ethnic groups, appreciate the excellent traditional Chinese culture, establish cultural confidence, and enhance their sense of national identity (Wong, 2021).

The General Office of the Central Committee of the Communist Party of China and the General Office of the State Council (2017) issued an article On the Implementation of the Inheritance and Development Project of the Excellence of Chinese Traditional Culture, which clearly pointed out the significance and main ideas of inheriting Chinese folk song, and the key tasks, organizational implementation and safeguard measures that have been clearly deployed. This document has attracted widespread attention (Güneş & Bahçivan, 2018). Ogidi & Ojukwu (2020) pointed out that Chinese folk songs are an important component of Chinese folk music. It is essential to emphasize the value and importance of ethnic music to achieve the great rejuvenation of the Chinese nation.

Popular music styles in the West, Japan, South Korea and other countries have attracted the attention of the people due to the popularity of the Internet. Therefore, people's attention to Chinese folk music is decreasing (Li & Sun, 2023). When people open various short video apps, "pop music" and "fast food songs" fill their ears, while Chinese folk songs seem to be "consumed within the circle" only among those who specialize in learning music (Yusoff et al., 2023). On

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that account, it can be found that the important reason for this phenomenon is that people do not have the correct values of ethnic music culture and lack confidence in ethnic culture. However, the cultivation of correct values and national cultural confidence is a long-term process.

Teachers use a single approach to explain in folk song teaching, it is very difficult to stimulate students' interest in learning folk songs. In 2015, the Education Department of Zhejiang Province issued the "Guiding Opinions on Deepening the Reform of Compulsory Education Curriculum", which divided the compulsory education curriculum into basic courses and expansion courses (Topolovcan et al., 2016). Expansion courses refer to the content provided by schools to students for independent learning, meeting the learning needs of different students, stimulating, and cultivating their interest in learning, and mobilizing their enthusiasm for learning (Alncak, 2016). Therefore, teachers can design singing folk song relay games, folk song competitions, and folk song knowledge competitions based on students' learning abilities and interests, linking relevant folk song knowledge with game activities, so that students can obtain rich music knowledge in the game (Wagner, 2017).

The concept of gamification teaching methods has been studied extensively in recent years in both academic and practical fields. However, discussions are ongoing regarding the nature of this difficulty, and many different research models have been used (Tan et al., 2019). Gamification teaching methods are not only a teaching tool, but also an important teaching activity (Pesek et al., 2020). By combining learning content with games, it truly achieves the integration of education and entertainment, with students as the main body and emphasizing their participation experience. In addition, gamification methods can stimulate students' interest in learning and greatly improve learning efficiency (Singh et al., 2023). The use of gamification teaching methods in music teaching can optimize the classroom teaching mode and better achieve teaching objectives.

Gamification is the use of game like design elements in non-gaming environments to motivate people and solve problems (Alsawaier, 2018). This study explores three theoretical methods. These are flow theory, Orff music teaching method, and learning theory. According to the flow theory, flow is a state of complete engagement, concentration, and inner enjoyment during an activity. The flow state requires the following conditions: 1) clear goals; 2) Instant feedback on performance and progress; 3) The appropriate level of challenge and; 4) Challenge the perceived usefulness in cultivating existing skills (Carrión Candel & Colmenero, 2022).

Orff's rhythm teaching method allows students to experience the changes in rhythm through concrete and vivid movements such as twisting fingers, clapping hands, and stomping feet (Huang, 2015). He advocates using the rhythm of four or two beats to expand and cultivate students' ability to create improvised rhythms. Orff emphasizes the use of students' initial emotions towards folk songs in teaching, using methods that can stimulate their enthusiasm, such as the rhythm creation method that most students like, to teach. He advocates giving students more free time to create (Yao, 2018). If we follow the psychological laws of student music education and create and disseminate traditional Chinese music vocabulary, we can create music works with high practical value (Wang, 2022).

Gamification is a technique that can be used to reduce participant engagement. Gamification learning provides a new learning method by using game elements and tools to enhance learners' motivation and participation in the learning system (Lin, 2019). Dyubele et al. (2020) proposed the spirit of competition or cooperation, gameplay, achievement, and continuous introduction of challenges in the game, which can earn rewards and increase the amount of knowledge students acquire. Games can also provide continuous practice, after which learners can achieve higher accuracy and improve their memory.

This study aims to explore whether gamification teaching methods can promote learning activities of Chinese folk songs. The first step is to design six dimensions based on support theory and models. These six dimensions are feedback, competition, goals, collaboration, challenge, or fun. In the second step, hold focus group interviews to develop an interview protocol for future use with students. In the third step, data from focus group interviews are included in the interview protocol and then subjected to investigation audits, which are authenticated by experts using Cohen's kappa analysis.

2.   Literature Review

Based on the above theories, this study developed a multidimensional model (Fig. 1). This model considers core learning motivation factors from fundamental theories. These core learning motivational factors almost play an important role in gamification (Alsawaier, 2018; Attali & Arieli-Attali, 2015). The setting of folk song education is feedback, competition, goals, collaboration, challenge, or fun. 1) Feedback: Blanchard pointed out the importance of feedback, and we need to understand its importance in learning. An important mechanism of gamification is the feedback mechanism (Renzi et al., 2015). Feedback means providing learners with immediate responses, so that they not only know about their own progress and achievements, but also about the achievements and progress of their peers. In gamification learning, teachers need to provide immediate feedback on learning outcomes, which will increase the attractiveness of learning; 2) Competition: Competition is one of the most important and influential mechanisms in gamification. In learning Chinese folk songs, students will compete with each other. If observed, it will be found that as long as an individual's performance reaches the highest level, as long as people talk about choices and abilities, competition issues come into play (Bicen & Kocakoyun, 2018). Competition can be divided into two categories: competing with oneself and competing with others; 3) Goal: If students are clear about long-term and short-term goals, their motivation may be enhanced. Gamification

teaching now includes teachers setting goals for students (Ifeanyi & Chukwuere, 2018). Students who achieve their goals will be rewarded; 4) Collaboration: One aspect of gamification teaching is collaboration among members (Luo et al., 2020). It should strengthen the participation activities among participants. Collaboration and mutual supervision among students in games are beneficial for improving the efficiency of learning folk songs; 5) Challenge: Students may encounter difficulties in learning folk songs, and teachers should use games to motivate students to learn and overcome challenges (Kalogiannakis et al., 2021); 6) Fun: One of the most important parts of gamification instructional design is to add entertainment to the construct. This is effective for cooperation and competition (Ifeanyi & Chukwuere, 2018).
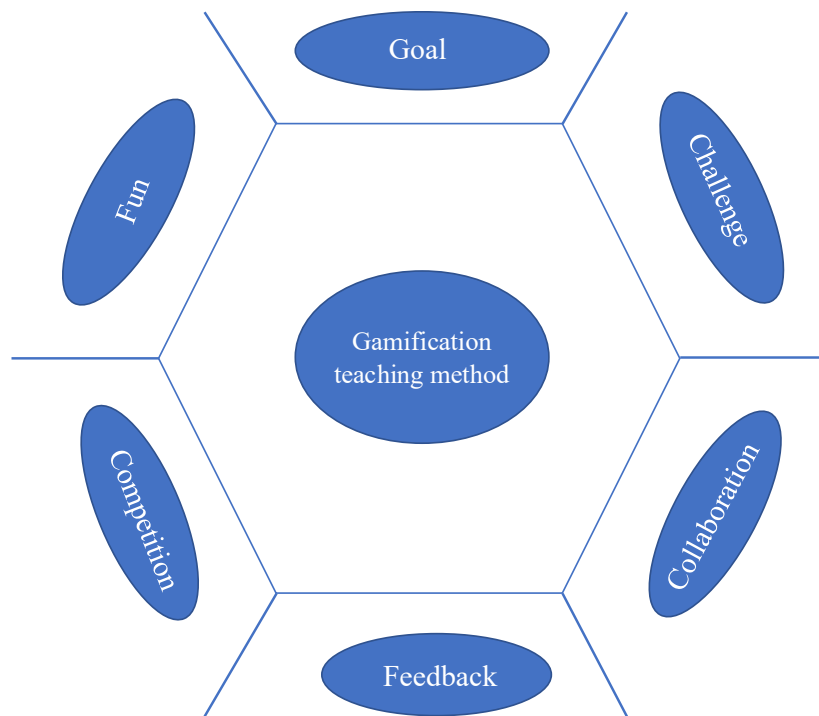

Fig. 1. Gamification teaching model

3.   Methodology

This study adopts the method of focus group interviews to explore the practical and theoretical basis of gamified teaching methods in the teaching of Chinese folk songs. The participants in this qualitative study include five experts with over ten years of experience in the field of music education. The interview content was transcribed and encoded using ATLAS. ti 9 software. During the coding process, six constructs were determined for the copied content through literature review and support models, namely feedback, competition, goals, collaboration, challenge, and fun. Based on these six constructs, a total of 59 teaching projects were listed. In addition, a new construct has emerged, cognitive reaction. The research results indicate that the specific items of each construct are as follows:

According to the findings, there were nine items in the construct of feedback, namely: 1) providing timely feedback on student performance; 2) emphasizing the importance of feedback in learning; 3) providing specific suggestions for improvement; 4) providing feedback on learning progress through graphical representations; 5) organizing effective feedback mechanisms; 6) visualizing and understanding feedback; 7) identifying key elements in feedback; 8) incorporating feedback in self-assessment; and 9) using Feedback to Improve Instructional Strategies.

There were 12 items in the competition construct, namely, difficulties in: 1) designing challenging game sessions; 2) stimulating interest in learning through competition; 3) comparing student learning outcomes; 4) organizing competitions to increase motivation to learn; 5) assessing learning through competitions; 6) setting the rules for competitions; 7) calculating the amount of time needed for competitions; 8) guiding students to compete healthily; 9) demonstrating student abilities through competitions; 10) explaining the rules for competitions; 11) understanding the importance of competitions; and 12) increasing learning abilities as the difficulty of competitions increases; 13) demonstrating students' abilities through competitions; 14) Explaining the rules of competitions; 15) understanding the importance of competitions; and 16) enhancing learning abilities as competitions become more difficult.

There were 11 items in the construct of goal, namely: 1) defining instructional goals; 2) setting specific learning goals; 3) maintaining goal consistency during the learning process; 4) providing visual aids for goal setting; 5) remembering the sequence of learning goals; 6) recalling learning goals; 7) applying goal-setting theories; 8) breaking down the goals into specific tasks; 9) writing the learning goals correctly; 10) recording goal attainment; 11) distinguishing between different types of learning goals.

Five items were included in the construct of collaboration, which are difficulties in: 1) integrating individual learning goals with team goals; 2) assigning tasks in a group; 3) understanding the importance of collaborative learning; 4) recalling collaborative learning strategies; and 5) understanding the significance of collaboration rather than memorizing its forms. There were 13 items in the construct of challenge, namely: 1) designing multi-step learning activities; 2) stimulating students' interest in learning; 3) understanding the role of challenge in learning; 4) overcoming difficulties in learning; 5) adjusting the difficulty of learning forwards or backwards; 6) demonstrating learning in front of peers; 7) recalling and responding to challenges in learning; 8) understanding and identifying key difficulties in learning; 9) solving complex problems in learning; 10) lack of awareness of challenges; 11) consistently saying "I don't know" or "I don't understand" when confronted with challenges; 12) avoidance of challenges; and 13) lack of strategies to cope with challenges.

Likewise, nine items were included in the construct of fun. These were difficulties with: 1) injecting fun into teaching and learning; 2) paying attention to the fun aspect of teaching and learning activities; 3) gamifying the learning process; 4) applying the basics to fun activities; 5) stimulating interest in learning through games; 6) understanding the concept of gamified teaching; 7) teaching without using a boring approach; 8) designing fun learning activities; and 9) Enhancing learning through fun activities. Finally, a novel construct emerged: cognitive reaction. One element of this construct is that students experience higher levels of motivation and interest in learning when gamified instructional methods are applied to all areas of music education. Based on the results of the focus group interviews, a total of 60 instructional programs were created. Therefore, this study achieved its purpose by successfully designing a list of items for gamified instruction.

4.   Results

4.1   Content Validity of the Focus Group Interview Protocol

After expert validation of the project, the first author modified the project based on their feedback. Two experts expressed their opinions on Project 8. Figure 2 shows the eight items in the focus group interview protocol. Based on their suggestions, the first author revised this item to make the meaning clearer and easier for participants to understand. Therefore, item 8 starts with 'What do you think are the main advantages of integrating gamification teaching methods into Chinese folk song teaching?' to 'In addition to the previously discussed content, do you think there are any underexplored gamification teaching strategies or tools that can be used for teaching Chinese folk songs?'

Eight Items in focus group interview protocol

1. What do you think are the main advantages of integrating gamified teaching methods into Chinese folk song teaching?

2. What positive learning behaviors or changes do students exhibit in teaching Chinese folk songs using gamification methods?

3. Can you describe some successful gamified activity cases and explain how they help students better understand and appreciate Chinese folk songs?

4. How do you ensure the effective integration of educational content and entertainment elements when designing gamified teaching activities?

5. What are the main challenges you encounter when implementing gamified teaching? How did you address these challenges?

6. Based on your experience, how effective is gamified teaching methods in enhancing students' interest in learning Chinese folk songs?

7. What special considerations do you think are needed to implement gamified folk song teaching among students of different age groups?

8. In addition to the previously discussed content, do you think there are any underexplored gamified teaching strategies or tools that can be used for teaching Chinese folk songs?
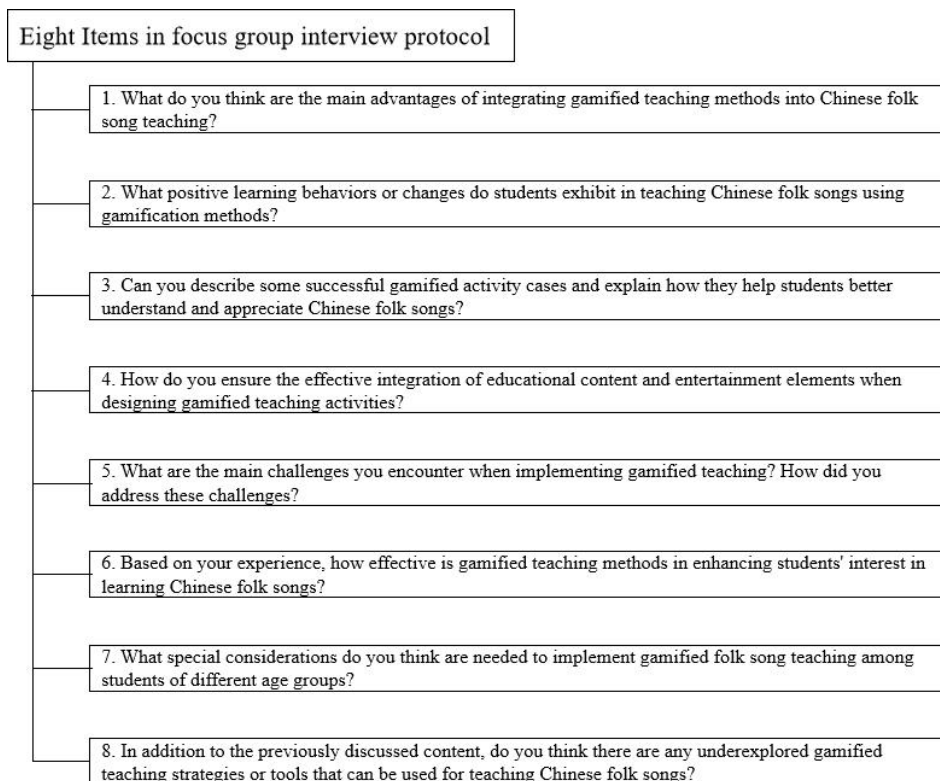
Fig. 2. Eight items in the focus group interview protocol

Additionally, the third expert proposed that prior to asking questions, an explanation of feedback, competition, goals, collaboration, challenge, or fun. Due to the possibility that experts would have a different understanding of the terms; the

first author was advised that the terms should be defined according to the definitions used in this study. Thus, the first author characterized each term utilized in the focus group interview protocol as a construct. The terminologies used in the gamification teaching methods are shown in Table 1.

Table 1. Definition of the constructs used in the gamification teaching methods

No.	Constructs	Definition in the study
1	Melody recognition	Develop game activities to enable students to quickly identify and distinguish folk song melodies from different regions through auditory games (Koivisto & Hamari, 2019).
2	Rhythmic imitation	Design a rhythm imitation game, where students need to imitate and repeat the rhythm patterns in folk songs, which helps them understand the rhythm construct and changes of the song and focuses more on the perception and reproduction of music rhythm (Masiu & Chukwuere, 2018).
3	Lyrics Memory	Deepen students' memory and understanding of folk song lyrics through lyric relay or fill in the blank games, which are used to memorize and reproduce folk song lyrics (Mimouni & Tamer, 2020).
4	Cultural exploration	Use treasure hunting games or role-playing activities to deepen students' understanding of the cultural and historical stories behind the songs, thereby deepening their understanding of the cultural connotations of folk songs (Pektaş & Kepceoğlu, 2019).
5	Musical composition	Encourage students to use the elements of folk songs they have learned to create short melodies or lyrics, and apply the knowledge they have learned to practical creations (Redecker, 2017).
6	Performance skills	Design performance games, such as simulation performances, role-playing, or group performances, to allow students to practice and showcase the folk songs and dances they have learned in actual performances, which can help improve their performance skills and confidence (Sailer & Homner, 2020).

For the content validity of the focus group interview protocol, the experts were required to choose a score for each item based on the agreement rating scale. If most experts thought that an item was necessary, it was accepted. The content validity of the focus group interview protocol is shown in Table 2. A score of 1 indicates that the item was essential, 2 indicates that it was useful but not essential, and 3 indicates that it was not necessary. All the items in the protocol were accepted.

Table 2: Content validity of the focus group interview protocol

Question	Expert 1	Expert 2	Expert 3	Decision
1	1	1	1	Accepted
2	1	1	1	Accepted
3	1	1	1	Accepted
4	1	1	1	Accepted
5	1	1	1	Accepted
6	1	1	1	Accepted
7	1	1	1	Accepted
8	1	2	1	Accepted

4.2 Focus Group Interview

Before conducting focus group interviews, an interview plan was designed based on theories and models. The supported theories and models include flow theory, Orff music teaching method, and learning theory. Based on a review of this literature, six dimensions have been developed, namely feedback, competition, goals, collaboration, challenge, or pleasure. Then, a language expert, a qualitative research expert, and an education expert validated the interview plan.

After the protocol validation, the focus group interview was conducted with five experts in music education. Three experts are teachers with over ten years of experience in teaching special education students. The first and second ones have a good understanding of mathematics teaching for special education students, while the third one has specialized knowledge on reading disabilities. The fourth and fifth experts are full-time government scholarship recipients pursuing a doctoral degree in the field of musicology. Table 3 summarizes the expertise of the interview participants. Focus group interviews were conducted through Google Meet. The first author recorded the meeting to record the discussions of the focus group. The interview lasted for 45 minutes, which is acceptable considering the number of questions raised to the experts. ATLAS. ti analyzed the script for focus group interviews.

Table 3. Experts' backgrounds

Expert	Expertise	Gender	Experience in field of expertise (years)
1	Music education	Female	15
2	Music education	Female	13
3	Music education	Female	13
4	Linguistic education	Female	16
5	Linguistic education	Male	14

4.3   Cohen's Kappa Analysis of Inter-Rater Reliability

In data collection, this study first encoded all teaching activities and student feedback into themes, and then constructed an expert validation table to confirm the generated themes. Topic validation is crucial because these experts, as third-party evaluators, their opinions can help validate the objectivity and broad applicability of research findings. This study invited two experts with over ten years of experience in music education to conduct this validation work. To determine the consistency and reliability between themes, Cohen's kappa analysis was used. This statistical method can effectively evaluate the degree of consistency between two evaluators when independently evaluating the same dataset. The calculation of the percentage of agreement is shown in Table 4.

Table 4. Agreement values for Cohen's kappa coefficient

Items	Raters		Difference
	Expert 1	Expert 2	
1	1	1	0
2	1	1	0
3	1	1	0
4	1	1	0
5	1	1	0
6	1	1	0
7	1	1	0
8	1	1	0
9	1	1	0
10	1	1	0
11	1	1	0
12	1	1	0
13	1	1	0
14	1	1	0
15	1	1	0
16	1	1	0
17	1	0	1
18	1	0	1
19	1	0	0
20	1	0	0
21	1	0	1
22	1	0	1
23	1	0	1
24	1	0	1
25	1	1	0
26	1	1	0
27	1	1	0
28	1	1	0
29	1	1	0
30	1	1	0
31	1	1	0
32	1	1	0
33	1	1	0
34	1	1	0
35	1	1	0
36	1	1	0
37	1	1	0
38	1	1	0
39	1	1	0
40	1	1	0
41	1	1	0
42	1	1	0

43	1	1	0
44	1	1	0
45	1	1	0
46	1	1	0
47	1	1	0
48	1	1	0
49	1	1	0
50	1	1	0
51	1	1	0
52	1	1	0
53	1	0	1
54	1	0	1
55	1	1	0
56	1	1	0
57	1	1	0
58	1	1	0
59	1	1	0
60	1	1	0
No. of zeros			52
No. of items			60
% agreements			82

Based on the results in Table 5, 82% of people agree. The explanatory scale of the percentage agreement value between evaluators (Li et al., 2016). The Cohen kappa coefficient of this study is 82%, indicating a high degree of consistency. Therefore, the dyscalculia checklist is considered to have high reliability. Through this rigorous data analysis and expert verification process, this study not only enhances the credibility of the research results, but also ensures that the practicality and effectiveness of gamification teaching methods in Chinese folk song teaching are scientifically supported. The high reliability of this method demonstrates the potential of applying gamification teaching strategies to traditional music education, providing a solid foundation for the development and implementation of related teaching methods in the future.

Table 5. Interpretive scale for inter-rater percentage agreement values

Value of agreement (%)	Strength of agreement
0	None
1-20	Very poor
21-40	Poor
41-60	Moderate
61-80	Good
81-90	Very good
100	Perfect

4.   Discussion

This study explores the application of gamified teaching methods in the teaching of Chinese folk songs through focus group interviews, aiming to design an effective teaching strategy. Five experts with over ten years of experience in music education participated in the interview. The data indicates that these strategies have high content validity and inter reviewer reliability. The research results indicate that a total of 60 teaching projects have been developed based on six constructs: feedback, competition, goals, collaboration, challenge, and fun. These projects are distributed in various aspects of gamified teaching and are based on educational and game design theories.

The feedback construct consists of nine items, emphasizing timely feedback, specific improvement suggestions, and visual learning progress. Dunbar et al. suggested that effective feedback mechanisms have a positive impact on student learning (Dunbar & Cooper, 2020). The competition construct includes 12 projects, with challenging game segments and competition rules designed to stimulate students' interest and motivation in learning. The goal construct consists of 11 items, which clearly define the methods for setting and evaluating learning objectives. The collaborative construct covers five projects, with a focus on task allocation and team collaboration. The challenge construct consists of 13 projects, designed with multi-step learning activities to stimulate students' interest and ability in learning. The fun construct includes 9 projects aimed at increasing the fun and engagement of learning through gamified teaching methods.

Moreover, a new concept emerged in the focus group interviews, which is the impact of gamified teaching on student learning motivation. Mimouni & Tamer (2020) pointed out that gamified teaching methods can effectively enhance students' learning motivation and interest. Therefore, this study designed a complete list of gamified teaching projects, providing new ideas and methods for music education. This study is important because it not only provides specific

teaching strategies for educators, but also valuable references for education departments and policy makers. Through this gamified teaching project, teachers can better stimulate students' interest in learning and improve teaching effectiveness. In addition, the research results also provide a foundation for further exploring the application of gamified teaching in other disciplines.

5.   Conclusion

In conclusion, this study offered extensive information on the design and development of a gamified teaching project checklist through focus group interviews. These data were analyzed using ATLAS. ti 9 software and encoded based on educational and game design theories. The research results have enriched the existing knowledge system and identified specific application methods of gamified teaching in music education. These projects can help educators better implement gamified teaching, enhance students' learning motivation and interest. The limitation of this study is that the number of experts participating in focus group interviews is limited and limited to the field of music education. Therefore, future research can invite more experts from different fields to participate in verifying and improving these teaching projects. In addition, the study only covers teaching in primary and secondary schools and can be extended to other educational stages in the future, such as kindergarten and adult education. The significance of this study lies in providing a systematic gamified teaching strategy and offering new perspectives and methods for music education. Teachers can use this checklist to identify and solve problems in teaching and improve teaching effectiveness. Future research can further explore the application of gamified teaching in other disciplines and develop corresponding teaching models and tools. If necessary, a copy of the gamified teaching project list can be obtained from the corresponding author.

Conflict of Interest
The authors declare no conflicts of interest.

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