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A LITERATURE REVIEW OF USING GAMES IN FLIPPED CLASSROOMS IN MUSIC EDUCATION BETWEEN 2020-2023

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Abstract： This paper has a literature review of 37 empirical studies published between 2020 and 2023 investigating game-based flipped classrooms in music. The combination of games and flipped classrooms is a lot more common in the teaching world, but less common in music. In order to understand the study of games in flipped classroom in music education, this paper uses PRISMA method to select, identify, research and evaluate target essays in a given year. Compared to previous studies, our findings reveal new trends and priorities, but also present additional challenges. Emerging trends include an emphasis on the teacher-student experience, curriculum engagement, music and game software research, expanding from adults to young learners, and investigating how students are motivated to learn. In addition, the focus of research has shifted from the original use of computers or multimedia to the use of online platforms, and some schools have even developed their own classroom management platforms. Music games range from rhythm and music software developed by established companies to professional music production software. From theinsights gathered in this review, we conclude that the use of game-based flipped classrooms in music programs can improve musical performance while developing integrated teachers with musical skills and proficiency in online music software, opening a new chapter in the development of technology in classrooms.

Key word： literature review，game based in learning，flipped classroom，music education

1. INTRODUCTION

1.1. Background

Music education is the education of music aesthetics and music skills, which affects people's emotions, thoughts, music skills through music. It is divided into professional education and general education. Professional education is mainly to cultivate musical talents who can sing or dance well. Here, our music education mainly refers to the cultivation of professional music talent. Music education has its particularity. Music is a synthesis of knowledge and skill. Therefore, in

the process of education, the traditional teaching mainly needs teachers and students to teach and learn music face to face. Therefore, music teachers are required to have a variety of skills in music theory and music skills. But we have fewer teachers like this, let alone teachers who have interest and ability to absorb modern educational technology. Therefore, the way of music education seems boring and conservative.

Because the students of the 21st century live in an era with well developed science and technology, their absorption of knowledge is diversified, not only from books but also from teachers' guidance. Students show little interest in such an educational model (Kiraly, 2003), low participation, and difficult to guarantee results (Zhukov, 2014). The flipped classroom model changes the traditional teaching model and returns the main role from teachers to students, and the teachers serve the students, such as making public resources so that the students can learn the course content outside the classroom (streelan et al., 2020), and using the classroom time for reinforcement learning, interactive discussion and problem solving. This model can improve student engagement and learning outcomes (Steen-Utheim & Foldnes, 2018), but its application in music education is still relatively rare. At the same time, as a new teaching method, gamification teaching can stimulate students' interest and enthusiasm in learning and improve students' participation and satisfaction. Huang et al., 2022) by introducing game elements and competitive learning environments.

Games can create a good learning environment, timely feedbacking students' action information, improving students' participation and initiative. These advantages can effectively improve the learning state of students. Therefore, it attracted the attention of the education circle in the 20th century and was gradually introduced into the classroom.

The combination of games and flipped classroom establishes a new teaching model, which has been tried by many people in other fields such as mathematics and computer, and has achieved good results. Music education purposively adopted this mode of education, so this paper collects the articles about this mode in the field of music education , looking forward to a comprehensive understanding of this situation, and then collects helpful information and good opinions for the experiment of this mode in music education.

1.2. Game based learning in music (GBL)

There is no universal concept for game-based learning. This paper argues that game-based learning (GBL) generally refers to the use of traditional games, with an emphasis on the use of game elements, known as serious games (Uludag & Satir, n.d.). In this article, the game is limited to digital games with game elements, such as mobile games, online games, etc., which have rules such as MEDALS, shields, promotions, rewards and punishments.

Learning itself is the digestion of knowledge and skills training, so the process is serious and boring. Because of this, students often wear away their initiative and interest in boring study (Hayak & Avidov-Ungar, 2020). Constructivism learning theory believes that a good learning environment can help learners learn better. Knowledge absorption and skill acquisition require students' active participation and transformation (Amineh & Asl, 2015). Therefore, creating a

good learning environment and promoting students' active learning and active participation in all aspects is the focus to help students achieve good learning results.

In recent years, some educators have introduced games into the classroom. Through practice, Hein, G. e(1991) emphasized that learners should take the initiative to learn in a strong learning environment, actively interact and socialize with peers and teachers, adapt to and actively participate in learning activities such as discussion and evaluation, so as to adjust their learning state and achieve the learning and training of established goals. Egenfeldt-Nielsen also believes that integrating game elements into learning and emphasizing the creation of situations conducive to learning aims to make students more active and fun in learning (Egenfeldt-Nielsen et al. 2011).

The natural fun of the game and the prompt feedback on the actions of the players have a strong appeal to humans. It can create an interesting learning environment for learning and stimulate students' active participation and interaction. These characteristics are exactly the problems that need to be solved in order torealize the transformation from teacher-centered to student-centered education. It can also effectively solve the problem of individuation and differentiation of students. (Groff, Howells and Cranmer(2012)

So it makes sense to bring games into the music classroom. Game-based music education refers to a kind of education mode which takes music and music related activities as the carrier of teaching and learning and promotes the all-round development of individuals. This kind of education emphasizes the uniqueness and comprehensiveness of music, integrates music into curriculum design and teaching practice, and cultivates students' ability and accomplishment in all aspects.
Gee(2003) asserts that games can be used in education to help students learn active learning and training by laying out, giving them an identity, an environment in which they can consolidate or upgrade their identity, interact with others, and promote problem-solving skills.

1.3 Flipped classroom in music (FC)

Flipped classroom has been a popular teaching model in recent years. It mainly gives the learning center back to students, making students the main role of teaching. And teachers provide teaching resources, teaching feedback and tutoring to help students learn better. reorganizing learning activities inside and outside the classroom. Before class, students can learn knowledge independently, carrying out low level learning, discussing and practicing knowledge points face-to-face with teachers in class, so as to complete in-depth learning, so as to digest knowledge and acquire skills.
Flipped classroom has been applied to music education, which has been practiced by many educators (Uludag & Satir, n.d.), (Gerber & Eybers, 2021), (Gunduz & Akkoyunlu, 2020) They carried out practice in order to improve students' performance, initiative learning, innovative thinking, satisfaction and participation. In the end the students achieved good results. At the same

time, they also proposed that the practice of flipped classroom in music education require teachers to make good planning and layout of the entire teaching process, so as to achieve significant results. Personalized Learning experience: Flipped classrooms allow students to learn course content at their own pace and style. Students can preview the material according to their learning speed and interests, so that they can understand the course content better.

1.4Literature Review

In recent years, there have been several reviews of the use of games in the flipped classroom. (Wang & Tahir, 2020), (Liu et al., 2023) selected and analyzed 88 papers published from 2008 to 2020, and studied the application of game-based in flipped classroom. The main findings are that game-based flipped classroom is capable of creating a good learning environment to motivate students to be proactive, a technology-based learning model that examines the application areas, research questions, sample groups, research methods, equipment adopted, and learning strategies. Most studies focus on learner perception (such as learning acceptance, learning attitudes, and learning motivation). Tablets are the most commonly used mobile devices. In addition, the results of keyword analysis show that technology can help teaching management and learning design, and promote students' learning motivation. Kahoot is a game-based learning platform that positively influences learning performance, classroom dynamics, students' and teachers' attitudes and perceptions, and students' anxiety. It also noted that some teachers find it challenging to use the technology. (Zhang & Yu, 2021)

The effect of flipped classroom application is directly related to the preparation process of online learning environment. In this study, Gunduz & Akkoyunlu used a hybrid approach to investigate the effects of gamification in an online flipped learning environment, finding that it increases interactive data, engagement,and achievement. (Gündüz & Akkoyunlu, 2020). This experiment gives a good experience to apply to the music classroom. Teachers can obtain better learning results by preparing curriculum resources and creating a good learning environment. Based on such experience, this paper holds that the game-based flipped classroom is operable and meaningful when applied to the technical music classroom. Based on the analysis of articles on the application of game-based flipped classroom to music during the four years from January 2020 to January 2024, this paper puts forward the following questions as problems to be solved：

Q1: Why do you use game-based flipped classroom in these articles?

Q2: What are the characteristics of the sample in the application of game-based flipped classroom in music?

Q3: What are the main networks and technologies used in the flipped classroom for music?

Q4: What are the main keywords for games in flipped class in music?

2. MATERIALS AND METHODS

2.1. Search Strategy

We used the PRISMA(Preferred Reporting Project for Systematic Review and Meta-Analysis) methodology in this review. We searched the following electronic databases :Web of Science,

Google Scholar, Springer and Scopus. Our search strategy combines topics, summaries and keywords. To be specific, The main process of finding a target article is as follows: search the target database for the following keywords: "game-based in music" or "Flipped classroom in music" or "game-based flipped classroom in music", "kahoot in music" and (music education or solfeggio).

The search is limited to articles between January 2020 and December 2023. We analyze the exclusion or inclusion of articles through two steps: first the title and abstract, and then the full text. Conduct an effective review according to the review guidelines, as follows

2.1.1. Inclusion Criteria and Exclusion Criteria

Because there are more raw data in the field of search, and the good and bad are mixed, the article needs to beselected, and the selection criteria are decided after consultation with experts.

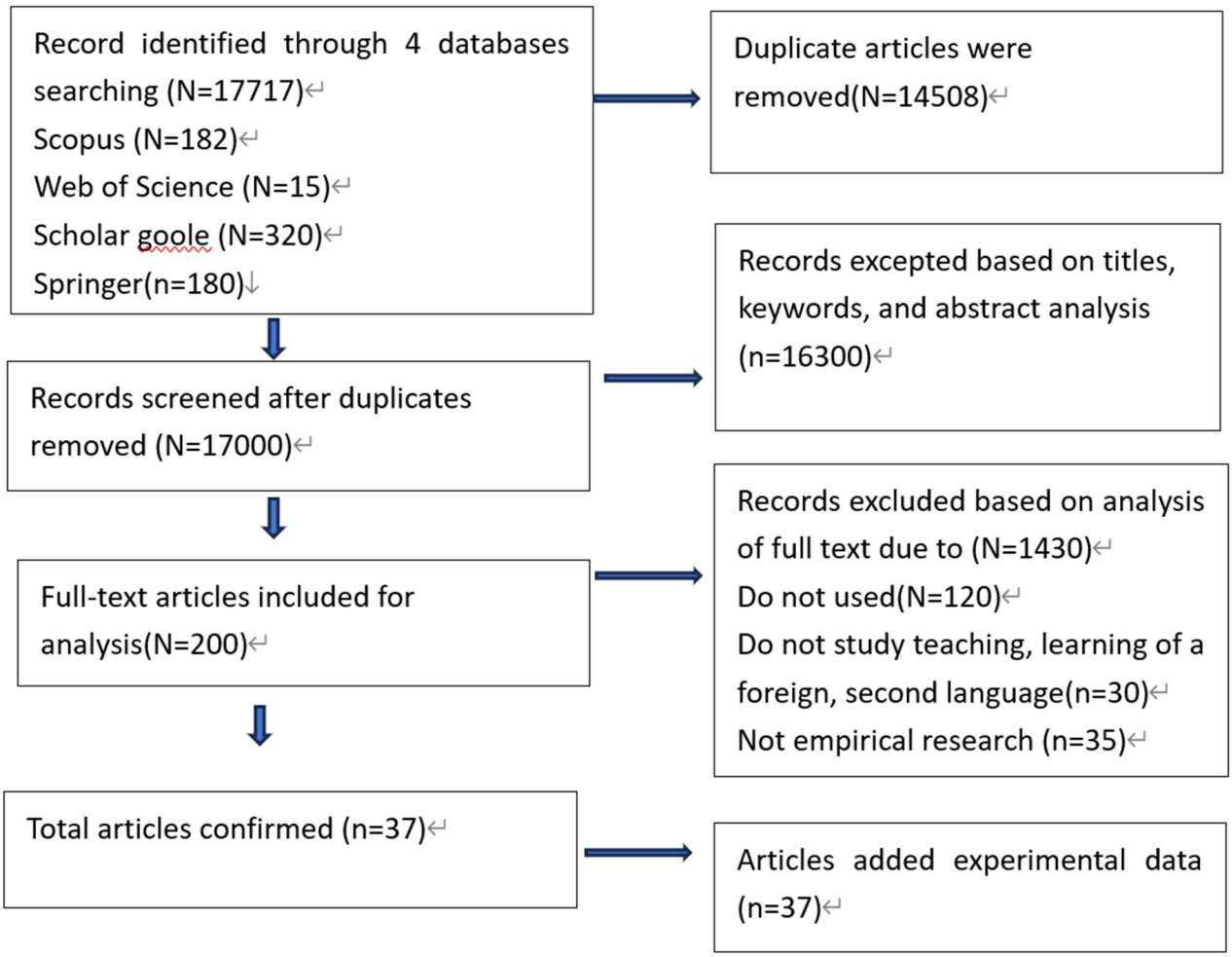
Tabel 1 the selection criteria

Inclusion Criteria (IC)	Exclusion Criteria (EC)
Published betwen January 2020 and January 2024	Published before January 2020
The application field was music, mainly music education	Non-musical field
Game-based flipped classroom	Traditional games, games without technology, non-Game-based flipped classroom: Flipped classroom teaching without Internet
provides detailed information on the sample and experimental procedures, including descriptions of data collection methods, experiments,instruments,and measurements.	No experiments, no data
Full text	No full text

2.1.2. Screening Process

The article required for this article was completed through the following process, and the following is a specific explanation.

Figure 1. Data collection process



Use "game-based flipped classroom "or" game-based "or" flipped classroom "kahoot""digcal game in learning"online game") and "(music education or solfeggio) and (music)" keyword search site scopus, 2020- 2024, a total of 182 articles, scholar google 17200, science direc 320 articles, a total of 17,717 articles, excluding 14,508 duplicate articles, 16,300 articles that must be in the field of music, 120 articles that cannot find the full text, 1420 articles without data analysis, 30 articles that are not in the field of music education, and 120 articlesthat cannot be used. Finally, 37 articles entered this research field, all of which were numbered.

2.2 The Screening Process

The PRISMA process has four steps from selection to determination, namely identification, screening, qualification and inclusion. We followed these four steps（picture 1） to make the selection (Figure 1). The screening process consists of five steps: first, duplicate articles are removed; Second, remove no full text, third, remove non-English articles, fourth, remove non-music fields, fifth, remove no experimental data, sixth, read the title and abstract, delete the article according to the inclusion and exclusion criteria, read the full text, delete the article that does not

meet the inclusion criteria. All articles are imported into Zotero software, which allows you to remove duplicate files, filter them, and export them to a spreadsheet.

2.3 Data Analysis

We used a Microsoft Excel spreadsheet to record and organize the results of the 15-article analysis. Table 3 displays the chosen coding categories for this review as well as their relationship to our three research questions.Then, to identify the codes and categories, we read and examined the complete texts of the articles included in the systematic reviews.

2.4 Overview of the Selected Articles

All the articles selected and analyzed in this paper meet the standards proposed by experts. First, there are full texts and keywords in the field of game, flipped classroom and music education. With practice and analysis data, this paper organizes the relevant citation keywords and relevant elements into a spreadsheet for the preparation of subsequent analysis.

The focus of the analysis here must have relevance (only classify the article as an experiment, investigation case study, or something like Kahoot). Rigor (describing appropriate research methods, including research background, number of subjects, scope, design, method, and execution) and credibility (conclusions based on sound analysis and reasoning). This choice is decided after discussion with experts, and if there are differences in the article, an unanimous rejection is required before the article is abandoned.

3. Results

3.1 Why do you use game-based flipped classroom in music?

In the field of music, it is more popular to use games or flipped classroom to teach, so what is the purpose of this way? To explore their purpose, we can better understand the direction and significance of music educationreform. The specific analysis is as follows:

(Hayak & Avidov-Ungar, 2020)	teachers' perceptions：(Denzin and Lincoln 2008; Josselson et al. 2003)
(İRmiŞ & Uludağ, 2023)	music lesson activities：student participation (Heinich et al., 2002)
(Lyu & Sokolova, 2023)	Achievement:parameters were assessed by 5 independent experts
(Ng, 2021)	These teachers' experience and perceptions: Ho, 2019, p.227
(Wise, 2023)	opinions and experiences of students: Houghton et al., 2015
(Han, 2023)	learning effectiveness: Ouyang, 2020
(Nuci et al., 2021)	Students' Engagement and Learning:K. P. Nuci et al.
(Yin, 2020)	effectiveness on student learning:: Ku et al., 2013
(Daugvilaite, 2021)	perceptions and experiences of students, parents and teachers:Cohen 2011,18–19

(Ebadi et al., 2023)	Perspectives: Yin（2009)
(Ouyang, 2023)	Achievement and class attendance:teachers who conducted the experiment and were present during the test
(Ebadi et al., 2023)	academic achievement,interaction data, participation, and achievement: Guba (1981)
(Alali, 2020)	effectiveness of a proposed program and beliefs of practitioner teachers: Abdul-Dhaher (2016), (Adas, 1996)
(Mohamad et al., 2020)	Perception: A 36-item questionnaire developed by myself

It can be seen from the sorted articles that the main purpose is to improve students' music performance, such as the improvement of music performance (Rmi/o & Uludagi, 2023), (Lyu & Sokolova, 2023), (Wise, 2023), (Han, 2023), (Nuci et al., 2021), (Daugvilaite, 2021), (Ouyang, 2023), (Ebadi et al., 2023), (Alali, 2020). Accounting for 93.33% of the 37 articles, music is the art of emotion, so the attention to emotion is also the focus of music education. From the emotion of teachers and students in music education, we can know whetherteachers and students agree with the curriculum reform and whether they are satisfied with the curriculum content. Seven papers focused on this element (Hayak & Avidov-Ungar, 2020), (Ng, 2021), (Yin, 2020), (Ebadiet al., 2023), (Ebadi et al., 2023), (Ebadi et al., 2020). 2023), (Mohamad et al., 2020) and (Ouyang, 2023),
accounting for 46.67%.

As can be seen from the above, regarding the application of game-based flipped classroom curriculum model in music education, its main purpose is to explore whether teachers and students support the application of this curriculum model and improve the learning effect of the course. The starting point for music education ismore straightforward than using this model for classes such as PE, math, and English, as well as elements of student engagement, satisfaction, peer assessment, and so on.

3.2 What are the characteristics of the sample in the application of game-based flipped classroom in music?

Population sample is the primary consideration of curriculum reform, which directly determines the goal and significance of the model. Through the empirical sample population in recent years, we can summarize the keypoints of music curriculum reform in recent years. At the same time, the analysis of the sample population canrealize the accurate positioning and analysis of the test object.

(Hayak & Avidov-Ungar, 2020)	28 participants were selected: 26 female teachers and two maleteachers, all of whom were employed in elementary schools in variousregions of Israel. Thus, participants were assigned to one of three career stages: the early stage, i.e., up to five years of seniority (n = 8),the advanced career stage, i.e., with 6-to-19 years of seniority (n = 9),and the late career stage, i.e., with more than 20 years of seniority (n

	=11).The average age of teachers in the study was 41 (age range: 2257).
(İRmiŞ & Uludağ, 2023)	The research sample includes students (n=30) in 10 classrooms in a public high school in Turkey in the spring term of the 2020-2021 academic year. 16 of the participants are females and 14 are males.
(Lyu & Sokolova, 2023)	children aged 5–6 years who had not previously been involved in music : study group, there were 12 boys and 12 girls; the control group contained 11 boys and 13 girls.
(Ng, 2021)	39 low-achieving students (19 boys and 20 girls)
(Daugvilaite, 2021)	ten young, London-based students at beginner and intermediate levels,
(Ouyang, 2023)	30 amateur pianists aged 18–23 who willingly attended paidfor courses: experimental group consisted of 17 Chinese men and 13 women: control group consisted of 12 Chinese men and 18 women

In this study, most of the articles are small sample population, basically about 30 people. Most of them are 12- 13 years old(Lyu & Sokolova, 2023) and 19-20 years old(Ouyang, 2023). In one article, the sample group is larger than the grade, covering in-service teachers between 15 and 50 years old, because it involves the investigation of teachers' curriculum reform. It can be seen that the sample population of 12-13,19-20 years old is representative. 12-13 years old is the formative period of character, the formative period of consciousness, there is a strong shaping. At the age of 19-20, the outlook on life is established and the period when you begin to manage yourself. For the field of music education, these two age samples can be used to test the attitude of the curriculum and the effect of the use of technology.

At the same time, the sample population here is mainly teachers and students(Hayak & Avidov-Ungar, 2020),(İRmiŞ & Uludağ, 2023)，(Lyu & Sokolova, 2023)，(Ng, 2021)，(Daugvilaite, 2021)，(Ouyang, 2023)， because this study is mainly aimed at curriculum reform, so the object is teachers and students.

3.3. What are the main networks and technologies used in the flipped classroom for music?

Curriculum reform needs direction, and the key to concrete implementation is technology. Here, it ismeaningful to study the technology in the music curriculum in the past 4 years. The following is a detailedanalysis table:

Author, time of publication	curriculum techniques

(İRmiŞ & Uludağ, 2023)	mobile games (Rhythm Cat, NoteWorks) and Web 2.0 tools (Thinglink, Plickers, Kahoot)
(Lyu & Sokolova, 2023)	Music program is the direct connection of the graphic image on the screen with the MIDI keyboard：The metronome and drummachines
(Ng, 2021)	Zoom，whiteboards with digital pens，whiteboards with digital pens
(Wise, 2023)	Finale, Mus2, Musescore, Fl Studio, Cubase , Garageband , Sibelius, Studio One, Logic Pro X , Maestro and Audacity
(Han, 2023)	Playground Sessions、Soundation Studio
(Nuci et al., 2021)	Zoom 和 BigBlueButton，Kahoot，Google Form Quiz
(Yin, 2020)	course management system (Canvas)，the Smart Book offered by McGraw Hill Connect
(Daugvilaite, 2021)	Skype，a multi-camera setup，zoom
(Ebadi et al., 2023)	Kahoot，student response systems (SRS)
(Ouyang, 2023)	ChordIQ
(Q. Huang, 2021)	MOOC
(Ding, 2020)	Audio editing module，Audio processing modul，Recording module，computer technology
(Widyaningrum et al., 2022)	appy pie

Firstly, as shown in the above table, the software of flipped classroom mainly uses video software, such as Skype, zoom(Ng, 2021),(Nuci et al., 2021), and (Daugvilaite, 2021). Learning Synthesis Website, moor appy(?) pie, canvas,(Yin, 2020),(Huang, 2021),(Widyaningrum et al., 2022).

In terms of games, there is mainly music game software, such as Rhythm Cat,(Rmi & Uludas, 2023), ChordIQ,(Ouyang, 2023), Music complex website, Kahoot, about music production software Soundation Studio(Han, 2023), Audio editing module, Audio processing model, (Ding, 2020), Finale), Mus2, Musescore, Fl Studio (Wise, 2023).

It can be seen from here that, regarding the game-based flipped classroom in music, this kind of reform makes full use of mature video websites and curriculum comprehensive application software in the market, and evensome schools have their own curriculum management keys. In

music, there are two main forms, one is the professional software in music production, the other is the professional music game software that trains students in rhythm and intonation.

3.4 What are the main keywords for GBLFCM?

Regarding the keywords in the article, you can know the hot spots in the industry in recent years, and the following is the specific table and explanation:

(Hayak&Avidov-Ungar, 2020)	Digital game-based learning . DGBL . Teachers' career stage . Teachers' perceptions
(Hayak & Avidov-Ungar, 2020)	ASSURE model, Blended learning, Music education, Stations method, Web 2.0 tools.
(Lyu &Sokolova, 2023)	Computer Music Program, Digital Technologies , Game-based learning Information Technology · Music Education · Musical skills · Performance of a music piece
(Ng, 2021)	COVID-19, extracurricular activities, social media, blended, gamification
(Liu et al., 2023)	Music education; mobile technology; technology based review model
(Han, 2023)	Instrumental sonata · Performance artistry · Reproduced sound quality · Soundation Studio · Writing compositions
(Daugvilaite, 2021)	Online instrumental lessons; online music education; beginner and intermediate music students; teacher's absence
(Ouyang, 2023)	Aesthetic education, Educational motivation, Mobile learning Mobile application · Music education · Solfeggio
(Ding, 2020)	Aesthetic education, Educational motivation, Mobile learning Mobile application · Music education · Solfeggio

In addition to the three key words of gamification, flipped classroom, and music class, teachers' and students'feelings (Hayak & Avidov-Ungar, 2020), mobile technology (Lyu & Sokolova, 2023), (Liu et al., 2023),

Educational motivation (Ding, 2020), (Ouyang, 2023); Teacher-student engagement (Daugvilaite, 2021), technical terms for music education, such as music technology (Han, 2023), (Ouyang, 2023).

In summary, these articles, in the application of game-based flipped classroom in music courses, mainly focuson the feelings of teachers and students, educational motivation, and participation in addition to academic performance.

4. DISCUSSION

From the above discussion, it can be seen that the game-based flipped classroom used in music

class is mainly launched to solve the problem of students' academic performance. After all, academic performance is the most obvious result of any music course. However, when carrying out such curriculum innovation, there are also relevant considerations for the path transformation from learning cognitive theory to the final knowledge transformation. The following is a specific summary.

4.1. Sample population

music courses mainly focus on the two stages of primary school and university. The curriculum of primary school not only pays attention to students' academic performance, but also cares about the feelings and participation of teachers and students. From the perspective of cognitive theory of learning, it is an important part of learning to promote students' active learning. Of course, based on games, it is also from changing the learning environment to encouraging students to learn more actively. The other is a training course for professionally trained musical talents. The population of such courses is mainly 19-20 years old students, so it focuses on teaching technology and student engagement. From the perspective of people's age, it is the time for thinking to pursue independence. Therefore, it is also meaningful to help students learn actively and pursue learning efficiency through teaching innovation. Finally it is about the attitude of teachers, so its age is participating in the work of teachers and students 15-53 years old. Curriculum innovation needs teachers to practice, so teachers' attitude towards curriculum technology innovation is directly related to the success of their innovation practice. So this kind of research is also meaningful.

4.2The purpose of games learning in flipped classroom in music

The primary purpose of a game-based flipped classroom is for academic achievement. In cognitive theory of learning, learning achievement is the final result. What determines learning performance are learning motivation, learning initiative, learning environment, learning strategy, feedback evaluation and so on. From the articles selected in this paper, it can be seen that the learning strategy mainly uses the fun and situational nature of games to stimulate students' initiative. Therefore, in recent years, there were more attention on curriculum innovation, the feelings of teachers and students, teachers and students more participation.

At the same time, music is a skill-based subject. Therefore, the implementation of curriculum technology, that is, the attention of various software, is also quite concerned.

4.3keyword

The use of games and flipped classroom in music curriculum are two important keywords. Around this theme, there are other keywords that can well explain the whole process of this theme from learning cognition to learning acquisition. For example, teachers’ and students' feelings, teachers and students accept this curriculum innovation model, there is a practical curriculum. All kinds of professional terms of music software, from the technical level reflects in recent years, everyone to the course innovation technology export; The participation of teachers and students is an important

part of the learning process. Both games and flipped classroom are designed to make students learn actively, and the specific manifestation index is the participation of teachers and students. The final learning acquisition is the learning achievement. This is a closed loop of the cognitive process of learning. From these keywords, it can be seen that the application of game-based flipped classroom is mainly to improve the learning environment and stimulate students' learning initiative to help students learn better.

5. Future research directions and suggestions

Because music courses involve professional skills, the requirements for teachers are relatively higher than other majors. There are fewer comprehensive teachers who also have a grasp of modern technology. Therefore, this situation determines that the reform of music curriculum has been relatively slow. Most of the curriculum reform is mainly carried out in the traditional mode, such as the use of social culture, the use of folk songs and so on. to enrich the curriculum content, it was to help students better digest knowledge.

Then modern technology is faster and more effective to solve the problems in the cognitive process of learning, such as students' initiative, interaction, feedback, evaluation and so on. The game-based flipped classroom is an attempt to use technology to innovate the music classroom, so it is meaningful. The practice in this direction can not only use more network resources in the classroom, but also cultivate a group of comprehensive teachers who have both music skills and curriculum innovation ability.The sample does not paint a comprehensive picture of the industry as a whole. This is the limitation of this article.

5. CONCLUSION

This paper studies 37 articles based on the three elements of game-based, flipped classroom and music courseduring 2020-2023. From the perspective of the sample population, the articles mainly involve two types of teachers and students in primary schools and universities.

In order to improve the performance of music courses, the learning environment is improved, that is, the fun and situational nature of games are used to stimulate students' learning initiative, and the student-centered teaching method of flipped classroom is used to return the teaching center to students. Teachers provide students with various learning solutions and services.

Because it is student-centered, it pays attention to the feelings and participation of teachers and students. At the same time, the various parameters of music game software are the guarantee that the course innovation can receive significant results.

Of course, there are limitations in this paper. The selected samples are relatively small, and the focus is only oncourse practice.

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