

Exploration of the Path of Visualized Rhythm Animation Applied to the Cultivation of Young Children's Musical Rhythm Sense

Yanping Chen

College of Education and Psychological Sciences, Sichuan University of Science & Engineering, Zigong Sichuan, CO 643000, China

Abstract: In order to understand the current situation of cultivating young children's sense of musical rhythm in kindergartens and teachers' cognition and use of visual rhythm animation, a self-administered questionnaire was used to conduct questionnaire surveys and interviews with teachers in five kindergartens. The research found that kindergarten teachers have a positive perception of cultivating young children's sense of music rhythm, but some teachers do not pay enough attention to cultivating young children's sense of music rhythm; some teachers' perception of visual rhythm animation is biased and the usage rate is low, and there is a single form and way of teaching organization; and there are various difficulties for teachers in cultivating young children's sense of music rhythm. The heavy workload in kindergartens, teachers' lack of musical literacy and digital awareness and ability affect the development of children's sense of rhythm. Based on this, the following improvement paths are proposed: Facing up to the value of young children's sense of rhythm in music and raising the importance of cultivating young children's sense of rhythm in music; Responding to the requirements of digital transformation for preschool education, empowering visual rhythm animations with numbers to cultivate children's sense of musical rhythm; Correctly understand visual rhythm animation and its role, promote diversified teaching organization forms and approaches; Implementing the concept of individualized teaching and promoting the development of musical rhythm among all young children; Improve the teaching process of cultivating children's sense of music rhythm, play the role of evaluation, and optimize the path to develop children's sense of music rhythm, improve the quality of music rhythm teaching, and promote the digital transformation of preschool education.

Keywords: Children's Music Rhythm; Digital Transformation; Visual Rhythm Animation.

1. Introduction

In 2012, the Ministry of Education officially issued the Guidelines for the Learning and Development of Children Aged 3 to 6, which states that 3 to 4-year-olds should be able to make body movements to familiar music, 4 to 5-year-olds should be able to beat beats and rhythms with body movements such as clapping, stamping, or objects that can be struck, and 5 to 6-year-olds should be able to sing with basic and accurate rhythms and pitches. The musical talent of young children is the product of the interaction between innate potential and early environmental influences[1], and rhythm is the first element that constitutes music. It can be seen that cultivating young children's sense of musical rhythm in an appropriate way is of great significance to the development of their initial artistic expression and creativity.

The foundation of any subject can be taught in some form to anyone at any age[2], and perception plays an important role in young children's cognitive activities, which are affected by factors such as colors, sounds, shapes, and their movement changes[3]. Therefore, although music rhythm contains many more difficult to understand terms and types and other content, if the complex knowledge of music rhythm is simplified and visualized, such as using visual rhythm animation to present, and then carry out music rhythm activities with appropriate teaching organization and pathway, it can also promote young children's gradual understanding of the basics of music rhythm, and gain the sense of music rhythm and other aspects of development.

The word "visualization" is derived from the English word "visualization", which originally means "visible, clear

presentation", and can also be translated as "visualization", "graphic", that is, the original invisible things become visible diagrams, graphics, to promote human understanding of the thing[4]. The state has issued policy documents to support the digital transformation of education, such as the "14th Five-Year Plan" for the development of the digital economy and the "14th Five-Year Plan" for national informatization, and digital transformation empowers preschool education, which is an important starting point for the development of high-quality and scientific preschool education. At present, the digital transformation of education is less from the perspective of early childhood education, and the integration of information technology and early childhood education is a complex process, there are a variety of problems such as conceptual dilemma, application dilemma and resource dilemma[5]. Visual rhythm animation is in the current digital era background, choose the cognitive characteristics and development needs of young children suitable for the basic knowledge and content of music rhythm, through digital technology to make the music rhythm from invisible to visible, from static to dynamic, from listening to the ear to the eye, ear listening and hands-on combination, to help young children easier to understand the rhythm of the music, to promote the development of young children's sense of music rhythm and other aspects of capacity. Rhythm teaching animation. The use of visual rhythm animation to cultivate young children's sense of musical rhythm is a kind of exploration and attempt of digital transformation of preschool education, which can promote the development of young children and at the same time promote the improvement of teachers' professional quality ability and the digital

transformation of preschool education.

Most of the existing researches on developing young children's sense of musical rhythm focus on the following three aspects: first, infiltrating the development of young children's sense of musical rhythm into different activities, for example, by observing kindergarten percussion activities, discovering the problems therein, and proposing suggestions for the development of young children's sense of musical rhythm in percussion activities such as the choice of materials, playing methods, the use of games, and cooperation between the kindergarten and the family[6]. In addition to percussion activities, some researchers also pointed out how to develop young children's sense of musical rhythm in their one-day activities, such as morning exercise activities, outdoor activities, teaching activities, and regional game activities[7]. Secondly, the Orff music teaching method is applied to the cultivation of young children's sense of music rhythm, such as adding the language rhythm teaching, movement sound teaching and rhythmic instrument teaching in Orff teaching to the various links of music activities, which proves that the use of the Orff teaching method can make young children's sense of rhythm level improve to some extent[8]. Third, the development of young children's sense of musical rhythm through games, such as the use of thematic music games to promote the perception and expression of musical rhythm in older classes[9].

Although existing studies have combined the development of young children's sense of musical rhythm with different activities or different pedagogies, they have paid less attention to the opportunities brought by the digital transformation of preschool education, and lacked the exploration of the development of young children's sense of musical rhythm through the use of digital technology. Visual rhythm animation fits the requirements of digital transformation of early childhood education, and has a positive effect on the development of young children's sense of music rhythm and the development of music rhythm teaching activities in kindergartens. This study conducted questionnaire surveys and interviews with teachers of five kindergartens to analyze the current situation of kindergartens' cultivation of young children's sense of music rhythm, teachers' knowledge of visual rhythm animation and their willingness to use it, teachers' use of visual rhythm animation, etc., to sort out the problems in the process of cultivating young children's sense of music rhythm, to analyze the reasons for the existence of the problems, and to put forward optimization paths, with a view to providing a reference for teachers, kindergartens, and the relevant education departments. We analyze the causes of the problems and put forward optimization paths in order to provide references for teachers, kindergartens and relevant education departments.

2. Research Design

2.1. Research Objectives and Methods

In this research, the questionnaire survey method was used and purposive sampling method was adopted to select teachers from five kindergartens as respondents. Among them, there are 2 urban kindergartens, 2 county kindergartens and 1 rural kindergarten; 3 public kindergartens and 2 non-public kindergartens. The selected kindergartens were larger in size and geographically better located than other kindergartens of the same type and level, and had the teachers and hardware facilities to carry out activities related to visual rhythm

animation and the development of children's sense of musical rhythm. Six invalid questionnaires with too short response time or highly homogeneous options were excluded, and 139 valid questionnaires were recovered, with an effective rate of 95.86%. At the same time, this study prepared a semi-structured interview outline and interviewed some of the frontline teachers and directors who participated in the questionnaire survey.

2.2. Research Tools

This research used a self-designed non standardized questionnaire titled "Survey Questionnaire on the Application of Visual Rhythm Animation to Cultivate Children's Music Rhythm Sense" as the research tool. By analyzing the actual situation of cultivating children's sense of music rhythm in kindergartens, the necessary requirements for the development of children's sense of music rhythm, and previous research, a preliminary questionnaire draft is formulated. Through discussions with experts and scholars in the field of preschool education, as well as frontline kindergarten teachers, and conducting questionnaire tests, a survey questionnaire consisting of 22 items was ultimately determined, including four dimensions: teachers' understanding of music rhythm and visual rhythm animation, teachers' organization and implementation of cultivating children's music rhythm, teachers' willingness and reasons for using visual rhythm animation to cultivate children's music rhythm, and teachers' paths and suggestions for using visual rhythm animation.

Through the reliability test, the Cronbach's alpha coefficient of the questionnaire is 0.753, which is highly reliable. The coefficient of KMO test of the questionnaire is 0.699 and the significance of Bartlett's sphericity test is less than 0.001, so the questionnaire has good validity and can be analyzed as valid data.

SPSS 27.0 software was used to process and analyze the data in this research.

3. The Current Situation of Teachers Using Visual Rhythm Animation to Cultivate Children's Music Rhythm Sense

3.1. Teachers' Knowledge of Musical Rhythmicity and Visual Rhythmic Animation

The data show that teachers have different views on the role of cultivating young children's sense of rhythm in music, but they all agree that cultivating young children's sense of rhythm in music has a positive effect. 87.80% of the teachers have some knowledge and understanding of visual rhythm animation, but there are still 12.20% of the teachers who have inaccurate knowledge of visual rhythm animation; 98.00% of the teachers were sure about the role of visual rhythm animation in cultivating young children's sense of rhythm in music, while 2.00% of the teachers thought that visual rhythm animation had no role in cultivating young children's sense of rhythm in music.

3.2. Teachers' Organization and Implementation of Developing Children's Sense of Rhythm in Music

The data showed that different teachers carried out

activities to cultivate young children's sense of rhythm in music with different frequencies, reflecting from the side that teachers attached different importance to young children's sense of rhythm in music. In the case of home cooperation in cultivating young children's sense of music rhythm, 46.80% of teachers chose to cooperate occasionally, and even 13.70% of teachers hardly cooperated with their families, neglecting the important role of cooperation between the kindergarten and the family in cultivating young children's sense of music rhythm.

99.30% of the classes have significant individual differences in the sense of music rhythm among young children, and 41.70% of them have significant differences or above.

Among the teachers' evaluation of young children's sense of music rhythm, 49.60% of the teachers evaluated occasionally, and even 6.50% of the teachers hardly evaluated young children's sense of music rhythm, and more than half of the teachers did not pay attention to the role of evaluating young children's sense of music rhythm.

Among the forms of teaching organization for developing young children's sense of musical rhythm, 51.60% of the teachers chose whole-class group teaching activities. Fewer teachers chose to develop young children's sense of musical rhythm through group teaching activities, individual teaching activities and special cross-class activities.

Among the ways to develop children's sense of musical rhythm, only 12.20% of teachers chose language activities, 13.80% chose life activities, and 14.60% chose specialized musical rhythm teaching activities. Teachers were less likely to develop children's sense of musical rhythm through the avenues of language activities, life activities and specialized musical rhythm teaching activities.

When selecting teaching contents or materials for developing children's sense of musical rhythm, teachers put children in the first place. 60.20% of the teachers considered children's age characteristics, needs and interests the most, and also drew on other people's good examples or existing reference teaching aids.

61.90% of the teachers encountered the greatest difficulties in cultivating children's sense of music rhythm in the process is that the rhythm is too abstract and there is no suitable teaching tool, the teachers' lack of music literacy and the teaching content does not meet the requirements of kindergarten teaching are also to a certain extent hindering the development of teaching activities for children's sense of music rhythm.

At present, 78.40% of the teachers use visual rhythm animation occasionally, almost never and have never used visual rhythm animation, and the usage rate of visual rhythm animation in kindergarten is very low.

3.3. Teachers' Willingness and Reasons for Using Visual Rhythmic Animation to Develop Young Children's Sense of Musical Rhythm

Teachers' attitudes towards visual rhythm animation are more positive, 89.20% of teachers are willing to use visual rhythm animation, 10.80% of teachers are neutral, and there are no teachers who are not too willing to use and not willing to use visual rhythm animation at all.

The promotion effect of visual rhythm animation on the development of young children's sense of music rhythm is an important reason for teachers' willingness to use visual

rhythm animation. 80.80% of the teachers think that the use of visual rhythm animation makes young children's music rhythm learning more convenient and intuitive, broadens the path of young children's music rhythm teaching, and is conducive to the development of their sense of music rhythm.

3.4. Paths and Suggestions for Teachers to Use Visual Rhythmic Animation

Among the forms of teaching organization that teachers chose to use visual rhythm animation to cultivate young children's sense of musical rhythm, 45.90% were whole-class collective teaching activities, 28.60% were small-group teaching activities, 12.40% were individual teaching activities, and 13.10% were cross-class special activities. It can be seen that whole-class collective teaching activities are still the first choice for teachers to use visual rhythm animation to cultivate young children's sense of musical rhythm, followed by small-group teaching activities, and fewer teachers chose individual teaching activities and cross-class special activities.

Among the ways that teachers chose to use visual rhythm animation to cultivate young children's sense of musical rhythm, 15.00% were language activities, 13.00% were life activities, 28.30% were body movements and vocal rhythms, 24.90% were specialized music activities, and 18.80% were combining different music pedagogies. It can be seen that teachers preferred to combine visual rhythmic animation with body movements and vocal rhythms or in specialized musical activities.

In addition to this, some of the teachers offered different suggestions on the use of visual rhythm animation to develop young children's sense of musical rhythm in the final open-ended questions and interviews. When designing visual rhythm animations, teachers' musical literacy and digital literacy should be taken into consideration so that the visual rhythm animations are easy to operate for mass use, early implementation and multiple activities. The needs and interests of children should be taken into account when designing teaching activities, taking into account the individual differences of children. During the implementation of teaching activities, it is necessary to create a relaxing and pleasant teaching atmosphere, provide more encouragement, and also combine different musical instruments for teaching.

4. Analysis of Problems and Reasons in the Process of Teachers Using Visual Rhythm Animation to Cultivate Children's Music Rhythm Sense

4.1. About one-third of the Teachers Did Not Pay Enough Attention to Developing Young Children's Sense of Rhythm in Music

From the survey results, teachers were more aware of the connotation of musical rhythm and affirmed that developing children's sense of musical rhythm had a positive effect. The frequency of music rhythm activities varied among teachers, and about one-third of the teachers indicated that they occasionally cultivated children's sense of music rhythm. Teachers' occasional cultivation of young children's sense of musical rhythm side by side reflected that some teachers did not pay enough attention to cultivating young children's sense of musical rhythm. Through interviews with teachers, the

following two main reasons were found:

First, kindergartens have heavy workloads. Teachers' work in kindergartens, in addition to the children's day-to-day life in the kindergarten, but also to take into account the environment creation, training seminars, cooperation between the kindergarten and the family, festivals and other different matters, the time available is limited, and to carry out the children's music rhythmic teaching activities need more time for preparation, implementation and evaluation, some teachers can not take into account the cultivation of children's sense of music rhythm and other work tasks.

Secondly, teachers' own musical literacy was insufficient. Some teachers said that due to their lack of music knowledge and literacy, they would consciously avoid complex content and let children feel music and learn music-related knowledge through simple singing and rhythmic movement, neglecting the cultivation of children's sense of music rhythm.

4.2. About 1 in 10 Teachers have a Biased Perception of Visual Rhythmic Animation

12.20% of the teachers thought that visual rhythm animation was a general entertaining animation or they were not clear about what visual rhythm animation was, and 2.00% of the teachers thought that visual rhythm animation had no role to play in cultivating young children's sense of rhythm in music, i.e., some of the teachers had a bias in their knowledge of the connotation of visual rhythm animation and the role of visual rhythm animation in cultivating young children's sense of rhythm in music. In the interviews, there were also teachers who said that they had never come into contact with visual rhythm animation and were not clear about what visual rhythm animation was.

78.40% of the teachers used visual rhythm animation occasionally, hardly used it and never used it, and the usage rate of visual rhythm animation in the teaching and learning process of children's sense of rhythm in music was very low. Among the teachers who have used visual rhythm animation and those who are willing to use visual rhythm animation, the teaching organization and methods of carrying out activities are similar to those of cultivating young children's sense of music rhythm without visual rhythm animation, with group teaching being the most commonly used form of organization, and the most commonly used methods of teaching being body movements and rhythmic gestures, combined with different music pedagogies, which is a relatively single form of organization and method of teaching. Group teaching is the most common organizational form, body movements and vocal rhythm, and combining different music teaching methods are the most common teaching methods.

Some kindergartens and teachers lack of digital awareness and ability may be the reason for teachers' biased perception of visual rhythm animation and low usage rate. Different kindergartens are located in different cities and have different teaching conditions and environments. Some kindergartens are more concerned about the requirements of digital transformation for preschool education and can provide the corresponding facilities and equipment, while some kindergartens are more out of touch with the digital transformation, or are concerned about the requirements of the digital transformation, but don't have the conditions to implement it. At the same time, teachers' digital awareness affects their attention to changes in the content, organization and methods of teaching, and influences the development of their digital competence.

4.3. Teachers have Multiple Difficulties in Developing Young Children's Sense of Rhythm in Music

Among the difficulties encountered in cultivating young children's sense of music rhythm, nearly one-third of the teachers chose that the rhythm is too abstract and difficult to teach, nearly one-third of the teachers chose that there is no suitable teaching tool, more than one-fifth of the teachers chose that their own music quality is insufficient, and a small number of the teachers chose that the content of the teaching is not in line with the requirements of kindergarten teaching. It can be seen that the difficulty of music rhythm itself, the teachers' own quality and the environment and conditions provided by the outside world all constrain the teachers to cultivate young children's sense of music rhythm teaching.

In addition, the individual differences in children's sense of musical rhythm are also to a certain extent constraints on teachers to cultivate children's sense of musical rhythm. Among the individual differences in children's sense of music rhythm, small differences and no differences only accounted for 15.10%, and there were significant individual differences in children's sense of music rhythm in most classes. Differences among different children also become one of the difficulties that constrain teachers in carrying out teaching activities to develop young children's sense of music rhythm.

5. Optimizing the Path of Applying Visual Rhythm Animation to Cultivate Young Children's Musical Rhythm Sense

5.1. Facing up to the Value of Young Children's Sense of Rhythm in Music and Raising the Importance of Cultivating Young Children's Sense of Rhythm in Music

The key to learning in the field of art for young children lies in fully creating conditions and opportunities to sprout young children's feelings and experiences of beauty, enrich their imagination and creativity, and guide young children to learn to feel and discover beauty with their hearts, and to express and create beauty in their own ways. Cultivating young children's sense of music rhythm has an unignorable value, which can help young children understand music rhythm and music, and provide conditions and opportunities for young children to feel and experience, express and create music beauty.

First, it helps young children understand rhythm and improve their musical literacy. Early childhood is a more critical period to cultivate the sense of music rhythm, in this period to cultivate children's sense of music rhythm can help young children to understand the rhythm, the development of rhythmic literacy, and then develop the ability to feel the music, understand the music, improve the musical literacy of young children, and lay the foundation of music appreciation and creation for young children in the future.

Secondly, it enriches the emotional world of young children and promotes their emotional socialization. Music rhythm can stimulate human emotions, and cultivating young children's sense of music rhythm can promote young children's understanding of different music emotions, such as joy, sadness, serenity, etc., and in the process of feeling different rhythms of emotions, enrich the emotional

experience, improve the ability to perceive the emotions of the self and others, and gradually promote the socialization of emotions.

Thirdly, it promotes the development of children's intellectual and non-intellectual factors. Cultivating young children's sense of musical rhythm can promote the development of young children's image, creativity, imagination, memory and other intellectual aspects, as well as the development of non-intellectual factors such as emotional control, willpower and interpersonal communication[10]. At the same time, when children master the experience of learning musical rhythm, they can "transfer" the existing experience to the development of other rhythms, such as children's verbal rhythm, physical rhythm, etc., to promote the development of various aspects.

In addition, the development of children's sense of rhythm in music also has a positive effect on children's understanding of the pattern of change of things, and mastering the rhythm of other activities such as language and movement. Therefore, teachers, kindergartens and relevant education departments should face up to the value of young children's sense of musical rhythm and raise the importance of cultivating young children's sense of musical rhythm.

5.2. Responding to the Requirements of Digital Transformation for Preschool Education, Digitally Empowered Visual Rhythm Animation Cultivates Young Children's Sense of Musical Rhythm

The Action Plan for Deepening the Reform of Basic Education Curriculum and Teaching issued by the General Office of the Ministry of Education explicitly proposes to promote the action of "digitally empowered teaching quality improvement", emphasizing the construction of a new mode of teaching and learning in the context of digitization, and helping to improve the efficiency and quality of teaching. Preschool education, as the foundation of basic education, should also pay attention to the opportunities brought by digital transformation, use digital technology to innovate the teaching and learning mode of music rhythm, improve the quality of teaching, and then promote the development of all young children's sense of music rhythm, so as to promote the all-round development of young children and the development of their personality. The following suggestions for education departments, teachers and kindergartens to use visual rhythm animation in response to digital transformation:

The relevant departments of education should provide financial and technical conditions to ensure the promotion of digitization and create conditions for the production, use and updating of visual rhythm animation. The relevant departments of education can make comprehensive use of the resources of all parties to create a visual rhythm animation resource base, and support the scientific design of activities to form systematic, spiraling activities and curricula suitable for children of different ages, so that teachers can select curricula that are suitable for the development of the children in their classes and in line with the level of teachers' own competence and qualifications, so that they can support teachers to carry out rhythm teaching activities with high quality, and improve quality, reduce burden and increase efficiency of teachers' daily teaching. This will improve the quality of teachers' daily teaching, reduce their burden and increase their effectiveness.

Teachers should establish the concept of lifelong learning and improve their musical literacy and digital awareness and ability. Teachers can make use of different ways and channels to improve their music literacy and comprehensive quality, such as increasing the learning of music rhythm and other related knowledge during the study period, and after joining the profession, according to their own situation, they can make use of the Internet, participate in the training and learn from the surrounding excellent teachers to obtain the related knowledge of music rhythm. Visual rhythm animation is one of the ways of digital transformation of teaching content and teaching mode, which requires teachers to have certain digital awareness and ability to integrate it into teaching activities, and to give full play to the advantages of visual rhythm animation to cultivate young children's sense of music rhythm.

Kindergartens, as an important driving force to promote the digital transformation of preschool education, should provide teachers with support in terms of equipment, environment and technology for the use of visual rhythmic animation, such as organizing regular training related to improving teachers' digital awareness and competence, and organizing specialized teams of teachers to design, implement, optimize and innovate systematic curricula of visual rhythmic animation for cultivating young children's sense of musical rhythm, etc., in order to accumulate digital transformation of preschool education. experience. At the same time, kindergartens should reasonably arrange teachers' teaching tasks and other work tasks to reduce teachers' workload and pressure, so that teachers have the energy and time to carry out activities to cultivate young children's sense of musical rhythm, and create conditions for teachers to use visual rhythm animation to cultivate young children's sense of musical rhythm.

5.3. Correct Understanding of Visual Rhythmic Animation and its Role in Promoting the Diversification of Forms and Ways of Teaching Organization

Visual rhythm animation is a digital transformation of the content and teaching mode of music rhythm teaching, which can be used not only in collective teaching, group teaching and other forms of teaching organization and specialized music activities, but also in individual teaching, game activities, life activities and parent-child activities. Adequate interaction in different activities can make children highly engaged and deeply involved in the teaching process of visual rhythm animation, and improve children's active thinking and initiative in learning music rhythm.

First, visual rhythm animation is combined with different activities. In life activities, teachers can use the music rhythm of visual rhythm animation to prompt the routine when cultivating children's routines, and subconsciously promote the development of children's sense of music rhythm. In regional activities, teachers can place the visual rhythm animation equipment in the music area, so that children can operate and learn independently and freely, stimulating children's interest in visual rhythm animation and music rhythm.

Second, visual rhythm animation is combined with different teaching methods. Through interviews with teachers, we learned that most teachers often use the Orff method of music education, and there are many other music teaching methods, such as the Dalcroze method and the Kodai method, etc., which can be combined with visual rhythm animation, and the visual rhythm animation can be used more

scientifically to cultivate young children's sense of music rhythm.

Thirdly, visual rhythm animation is combined with games. Game is the basic activity of kindergarten, which is one of the main ways for young children to understand the world. The use of visual rhythm animation in a playful way is in line with the cognitive development characteristics of young children. The fun and dynamics of visual rhythm animation also provide the conditions for it to carry out activities in the way of games.

Fourth, visual rhythm animation is combined with instrumental music manipulation. "All students, regardless of their level of musical talent, are able to benefit from instrumental learning." [1] Musical rhythms are usually expressed by sounds made by instrumental music, and the combination of visual rhythm animation and instrumental music manipulation can prompt young children to understand the formation process of musical rhythms and the meanings of rhythms more at the practical level on the basis of musical knowledge gained at the theoretical level. At the same time, the operation of instrumental music can also promote the development of young children's muscles and movements, as well as the cooperation and coordination of organs such as the ear, eye, hand and brain.

Fifth, visual rhythm animation is combined with family activities and parent-child activities. Early childhood growth cannot be separated from family education, and the cultivation of young children's sense of musical rhythm also requires cooperation between kindergartens and families. The arrival of the digital era makes most children use cell phones, tablet computers and other electronic devices at home. Parents can take advantage of young children's curiosity about electronic devices, use visual rhythm animation, so that young children in contact with electronic devices at the same time to obtain beneficial development, to avoid the harm that may be brought to young children by undesirable information in the electronic devices, in promoting the development of young children's sense of musical rhythm, at the same time, it can increase parent-child interaction, enhance parent-child relationship, and achieve scientific parenting.

5.4. Implementing the Concept of Individualized Teaching to Promote the Development of Musical Rhythm among All Young Children

Young children's musical talent is the product of the interaction between innate potential and early environmental influences [1], young children's innate potential and early growth environment are almost different, therefore, young children's musical talent and sense of musical rhythm are more obvious individual differences. Education is oriented to all young children and focuses on their individual development while promoting their overall development. Teachers should pay attention to the individual differences between children's sense of musical rhythm, implement the concept of teaching students according to their abilities, take into account the differences in teaching and try to meet the different needs of children due to the differences, so that the slow development of the sense of musical rhythm of young children to be compensated for the development of the sense of musical rhythm of young children to be good to get incentives.

The application of visual rhythm animation in the process of cultivating young children's sense of music rhythm can

more conveniently collect and aggregate data on the process and results of young children's music rhythm learning, help teachers more accurately grasp the characteristics of young children's groups and individual differences, and provide targeted teaching content, diversified learning resources, differentiated learning paths, and personalized learning guidance, so as to promote the development of all young children's sense of music rhythm.

5.5. Improve the Teaching Process of Cultivating Children's Sense of Music Rhythm and Play the Role of Evaluation

A complete music rhythm activity, in addition to the process of teaching and learning, should also include evaluation, including different types of evaluation such as teacher's evaluation of children, children's evaluation of children, and children's self-evaluation. Evaluation has a multifaceted value.

First, evaluation can help teachers summarize the performance of young children in the activity, accurately grasp the development of young children's musical rhythm sense, and provide guidance for teachers' subsequent preparation of the activity and teaching according to students' needs.

Secondly, the purpose of evaluation is to motivate children, to evaluate children's sense of music rhythm with appropriate encouraging language, and to stimulate children's interest, initiative and confidence in learning music rhythm. Although visual rhythm animation makes music rhythm more visual and vivid, music rhythm is essentially abstract, and young children may encounter frustration in the process of learning music rhythm. Teachers' timely and positive evaluation can, to a certain extent, help young children to maintain their interest and confidence in music rhythm, and promote young children's active learning and development of music rhythm sense.

6. Conclusion

Digital transformation is both an opportunity and a challenge for preschool education. Using visual rhythm animation to cultivate children's sense of music rhythm is a response to empowering preschool education through digitization, and it is an exploration and attempt. This research conducted a questionnaire survey and interviews with teachers from five kindergartens to understand the current low usage rate of visual rhythm animation in kindergartens, and some teachers have biases in their understanding of cultivating children's musical rhythm sense through visual rhythm animation. The reasons for these situations include complex teaching situations in kindergartens, insufficient teacher literacy, and significant individual differences among children. Based on the existing problems and their underlying reasons, as well as the characteristics of visual rhythm animation, optimization paths for using visual rhythm animation to cultivate children's musical rhythm sense are proposed. However, from the overall perspective of current preschool education, there is still a lack of systematic and widely applicable visual rhythm animations in the field of preschool education. Continuous efforts are still needed from teachers, kindergartens, and education related departments to continue developing, applying, adjusting, and innovating visual rhythm animations, in order to better promote the development of children's music rhythm sense and other

abilities, improve the quality and effectiveness of music rhythm teaching in kindergartens, and help solve problems such as conceptual difficulties, application difficulties, and resource difficulties in the digital transformation of preschool education.

Acknowledgments

Supported by The Innovation Fund of Postgraduate, Sichuan University of Science & Engineering. “Exploring the Path of Applying Visual Rhythm Animation to Cultivate Children’s Rhythm Sense” (No. Y2022197).

References

- [1] Gordon. On the Developmental Basis of Children’s Musical Talent [M]. Pu Kaiyuan, Translation. Shanghai: Shanghai Music Press, 1989:51,131.
- [2] Bruner. Educational Process [M]. Shao Ruizhen, Translation. Beijing: Cultural Education Press, 1982:49.
- [3] Li Yapei. Research on the Cultivation of Young Children’s Sense of Rhythm and Ability Development [D]. Fuzhou:Fujian Normal University,2011:13.
- [4] Zhang Yibing. Knowledge Construction the Change of Teaching and Learning Under the Vision of New Educational Equity [M]. Nanjing:Nanjing Normal University Press, 2018:121.
- [5] Li Xiaofeng. Integration of Information Technology and Early Childhood Education in the Digital Era:Dilemma, Value and Path [J]. Journal of Kaifeng Culture and Art Vocational College,2023,43(01):73-75.
- [6] He Tao,Ni Xuhao. Research on the Strategy of Enhancing the Sense of Rhythm of Older Children in Percussion Performance Activities[J]. Science Popular(Science Education),2019(06):93.
- [7] Huang Xia. Exploration of Strategies for Cultivating Musical Rhythm Sense in One-Day Activities of Young Children[J]. Reading, Writing and Counting,2021(08):35-36.
- [8] Chen Dongyue. Action Research on Cultivating Rhythmic Sense of Kindergarten Children Based on Orff Teaching Method [D]. Shanghai: Shanghai Normal University,2021:46-48.
- [9] Zhang Panpan. Action Research on Cultivating Rhythm Sense of Kindergarten Children through Thematic Music Games [D]. Shanghai: Shanghai Normal University,2022:44.
- [10] Lv Hunquan. The Meaning and Method of Children’s Music Rhythm Training[J]. The Great Stage,2011(10):207-208.