

The Understanding and Development of “Curriculum Gamification” and “Curriculum-Based Game” Concepts in Chinese Kindergartens

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Abstract: Games are one of the basic activities in kindergartens, so what do “Curriculum gamification” and “Curriculum based Game” mean? Could kindergarten games become the curriculum? Combined with the history of curriculum development in China, Piaget’s play-stage theory and Vygotsky’s scaffold teaching theory, this paper discusses the differences in the understanding of the concept of “the transformation of curriculum and games”. Using representative cases in Jiangsu and Zhejiang provinces as examples, and through the analysis of the reform process of “Curriculum Gamification” and “Curriculum-based Game” in the Early Childhood Education (ECE) field, it was found that further exploration both in concept and practice is required to achieve high quality kindergarten education.

Keywords: Children play; Theoretical concept; Policy analysis; Interview

Online publication: October 27, 2022

1. Introduction

Nowadays, the government has put greater emphasis on the significance of play in Early Childhood Education (ECE). In 2002, the “Directions of Preschool Education” released by the Ministry of Education pointed out that playing is an important part in the all-round development of children ^[1]. The “Guide of Learning and Development for 3-6-year-old Children” published in 2012 states that children learn new things from daily life experiences and through playing ^[2]. As one of the basic activities in kindergartens, ^[3] the emphasis at the policy level promotes the discussion of the relationship between curriculum and play in practice.

Faced with the tendency of pre-school education system resembling that of a primary school and the development of understanding about children, Nanjing Normal University has led the research about approaching “Curriculum Gamification” with a playful spirit. In 2017, Jiangsu Province issued the “Implementation Requirements of Kindergarten Curriculum Gamification Project in Jiangsu Province (Trial Draft),” which took “curriculum gamification” as a pilot project from the perspective of local policies, and declared that as a key content of kindergarten curriculum construction. “Curriculum Gamification” puts the “Guide of Learning and Development for 3-6-year-old Children” into effect and contributes to the improvement of the ECE quality.

Following the development of Anji games, Zhenyu Wang from East China Normal University proposed "Curriculum-based Game". He gave a speech at the Advanced Seminar on Kindergarten Curriculum Reform, putting forward "Curriculum based Game" as the goal of their research proposed in December 2015. Having seen the great impact of Anji games on Early Childhood Education in China, they hope this reform will continue along the path of "Curriculum based Game." Furthermore, the attempt in curriculum reform brings a new weather, a new path in China's ECE."

After the kindergarten curriculum reform in Jiangsu, Zhejiang, and many other provinces, many doubts about the concept of "Curriculum Gamification" and "Curriculum-based Game" emerged. To explore the difference between these two concepts and the impact they brought, this paper sorts out and distinguishes these two concepts in the theoretical and practical aspects, explore the problems and shortcomings of the two concepts, and summarizes and discusses about the understanding of curriculum and games based on development of policies and actual situations.

2. Research background

Since 2014, the number of relevant researches has increased rapidly and maintained a trend of continuous growth. In terms of definition, Xiaolian Huang made the distinction between two concepts: "Curriculum Gamification" seems like a theoretical operation, in which playing acts as an instrument for teaching. Therefore, students learn while playing. On the other hand, "Curriculum based Game" emphasizes the ontology of play and the generation of curriculum. Beginning with play, children learn from their playful experience. Based on the connection between kindergarten and primary school, "Curriculum Gamification" is more suitable for primary school education, while "Curriculum-based Game" is better for kindergarten education^[5]. Yu Qian criticized this point of view, pointing out that the "Curriculum Gamification" is the integration of a playful spirit, from the perspective of hermeneutics, based on the interactive subjectivity, emphasizing on the implementation. From the perspective of children's learning, it can promote the development of children's experience, and in terms of personality development, it contributes to the development of the children's freely playful spirit^[6]. Xueqing Qiu argued that the concept of "Curriculum Gamification," originated from the principle by Heqin Chen of turning teaching into playing and was integrated into preschool education, echoing Dewey's thesis of "learning from doing." It is believed that "Curriculum based Game" guarantees children's time and rights of playing, endowing daily life with playful spirit, improves learning experience, and forms good learning qualities based on life experiences^[7]. On the theoretical level, most researchers believe that curriculum gamification is the integration of a playful spirit into kindergarten curriculum.

Researchers also noticed the difficulties that teachers' face in practicing these two concepts. Han Cai surveyed 3742 teachers in Jiangsu province using questionnaire and found out that although the teachers are proficient in teaching concepts, organizing activities, utilizing resources, curriculum review, and strategy selection, and so on, but they also need to strengthen the focus on the parents' demand, professional leadership in rural kindergartens and the degree of participation of teachers^[8]. Yueling Ding, a leader of Hai'an Kindergarten in Zhejiang Province, pointed out that in order implement "Curriculum Gamification" in kindergartens, teachers should pay attention to the current problems of being either too controlling or allowing too much freedom, and the lack of direction for "Curriculum Gamification" construction. With regards to children's playful spirit, and in the face of skill preparation for curriculum reform, leaders need to strengthen teacher training, clarify directions and optimize the academic evaluation mechanisms^[9].

Engaged in concrete education in kindergartens, educators have different understandings of the two concepts. Qiu Wang viewed the goal of outdoor games as improving learning quality, social development and scientific literacy, focusing on children's interests and individual growth. Planning, implementation (playing), and reviewing are the three activity steps in "Curriculum based Game" aimed at creating a

comprehensive evaluation of children development, game environment and teachers' professional development ^[10]. Yaming Zhou reviewed the experience of kindergarten-based local chess games curriculum, and pointed out the necessity to select the appropriate course objectives when integrating the concept into the curriculum, and apply multi-dimensional evaluation in curriculum ^[11]. Obviously, practical experience is not consistent with the "Curriculum based Game" proposed by Zhenyu Wang, which belong to the first-line attempt to integrate play into their curriculum construction.

Under the theme of "curriculum gamification," based on the cultural idea of "harmony between emotion and wisdom," Yueling Ding integrates local culture into the construction of gamified curriculum, promotes the integration of curriculum content, creates a gamified environment, and develops curriculum resources ^[12]. Yulan Cao evaluated the transformation and formalization of "Curriculum-based Game," putting forward the reform of teachers' concept of respecting children, paying attention to the significance of the symbiotic development of teachers and children and family cooperation in curriculum ^[13]. Chongtie Mei pointed out that the gamification method makes teachers' activities disorganized and inefficient. The design and interaction, the activity planning, hierarchical system, thematic context, organizational suitability, and innovative games factors that should be considered while implementing the gamification method ^[14]. In this paper, the professional qualities required for on teachers and integration of kindergarten-based courses, kindergarten culture and local resources is explored and discussed.

These concepts have received high attention and became a hot topic since 2015. Including the research of theory and the thoughts of the implementation in practice, literature reflects the development and construction of kindergarten curriculum. Researchers and educators focus on different aspects: Researchers tended to explore the origin and definition of this concept, whereas educators such as kindergarten principals pay more attention to the implementation of the idea, focusing on problems and solutions. In terms of research methods, there are few empirical studies. Most studies are speculative and summaries of experiences, thus the distinction between the concepts of "Curriculum gamification" and "Curriculum based Game" is still vague.

3.Theoretical analysis

3.1. The origin of "Curriculum Gamification" and "Curriculum based Game"

In order to implement the requirements of the "Guide of Learning and Development for 3-6-year -old Children" and avoid the tendency of pre-school education resembling that of a primary school, Nanjing Normal University has put forward the concept of "Curriculum Gamification." Yongping Yu pointed out that "Curriculum Gamification" is not about replacing all activities in kindergartens with games, (...) but to ensure that there is a time for playing other than having basic activities. Therefore, the concept of playing can be permeated into various activities of the curriculum implementation."

Zhenyu Wang from East China Normal University proposed the concept of "Curriculum-based Game." Following the practice of Anji games, he said in his speech at meeting, making play always interesting and continuing is "Curriculum based Game." "Curriculum-based Game" starts with playing and ends with playing, in the process, teachers grab the children's attention, follow their interests, help them solve difficulties, help them to continue playing, (...) Turning this process into a formula, which is P to P. The P is Play, "Curriculum based Game" consist of $P_1 \rightarrow P_2 \rightarrow P_3 \rightarrow P_n$. This process is "Curriculum based Game." Conceptually analyzed, these two concepts have not translated play and curriculum into one another, but is still a fusion of the two concepts. "Curriculum Gamification" emphasizes ensuring optional and specialized time for play, that permeates the playful spirit. As a mean of implementation curriculum activities, mining the extension point in playing as the content of the course, and paying attention to the resources and forms of playing. From this perspective, "Curriculum Gamification" has certain significance for reference. However, the implementation of "Curriculum-based Game" has been in line with the educational goals of

kindergartens. It can be seen from the system guidelines that the systematic and phased development educational goals cannot be achieved by playing without the guidance from adults. Playing is not necessarily education as it does not have clear goals. Achieving educational purposes in the form of playing seems to be too idealistic.

3.2. The difference between curriculum and play

The major conflict between play and the curriculum is that the playing is spontaneous and the curriculum is externally motivated. Teachers can create situations, provide appropriate materials to achieve educational purposes through playing. However, it is difficult to identify whether it is learning-time or playtime due to the nature of the activity. From emphasizing on the natural and spontaneous play of children in early stage, to teaching games after liberation, and then to the creative games of children in the 1980s, the curriculum itself includes playing and teaching. From the perspective of historical development, there is no concept of 'curriculum' in kindergarten education policy documents, the synonym is "educational activities". Furthermore, the curriculum belongs to the concept of practical field exploration.

Since the 1980s, the development of kindergarten curriculum has gone through three stages. In 1981, China promulgated the "Kindergarten Education Outline (trial draft)," which changed the traditional teaching form from being homework-based since the 1950s into subject-based curriculum, resulting in the kindergarten's educational system being similar to primary school system. In 1983, Nanjing Normal University and Nanjing Experimental Kindergarten discussed about comprehensive education structure reform. Meanwhile, Beijing Chongwen District Second Kindergarten also conducted a comprehensive education experiment, with common knowledge classes as the core. This top-down education reform broke the subject-based teaching mode, curriculum became a professional term in ECE field. In 1989, "Kindergarten Work Regulations (Trial)" proposed the concept of kindergarten education activities firstly, emphasizing playing as the basic activity in kindergartens^[15].

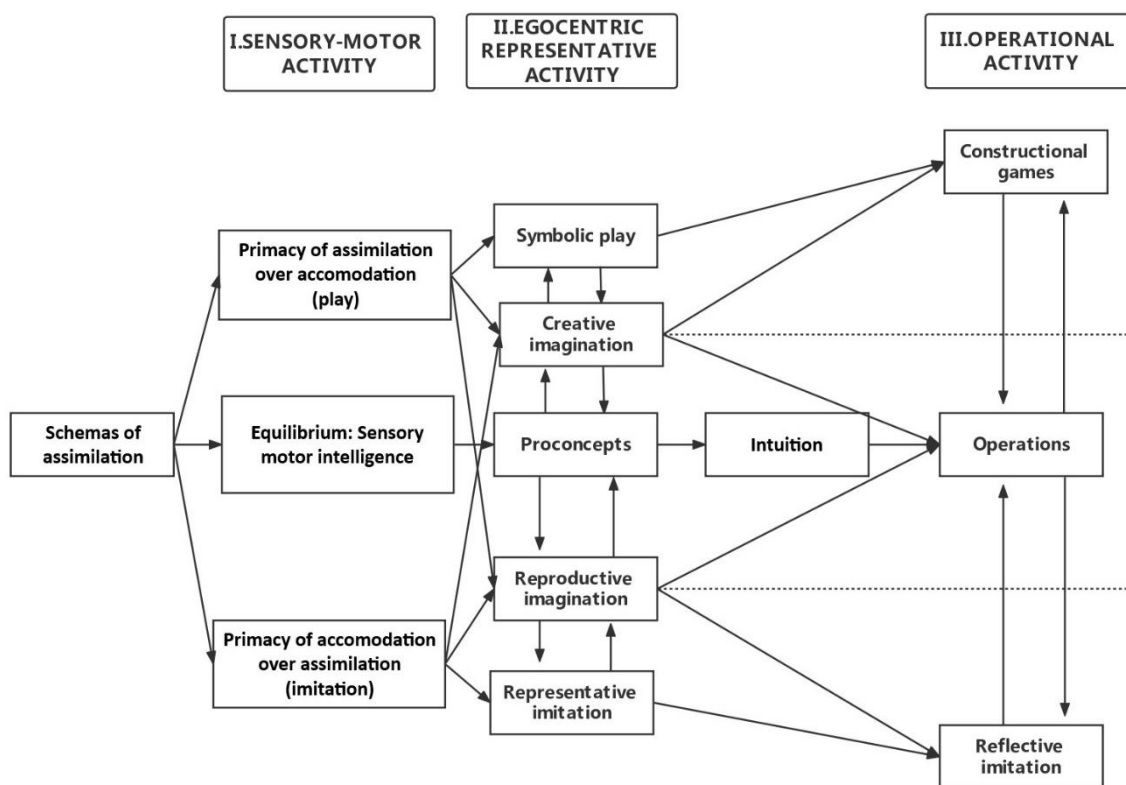


Figure 1. Three-stage of Piaget Theory in playing^[16]

Western free play tradition consists of some elements of the curriculum in the play. In Piaget's three stage theory (**Figure 1**), play equips more assimilation than adaptation, in which children's representation and intelligent mutual adaptation are different from gratification in other activities. Playing can help children assimilate the new things. In the process of children's socialization, playing can help them acquire rules and gradually adapt to symbolic imagination in a constructed way. As a spontaneous behavior that is no longer self-centered, playing can produce collective rules or objective representative symbols through individual symbols, changing reality to meet their self-needs. In Western countries, playing can replace courses because of their free play orientation of preschool education contains teaching and learning, which emphasizes on children's personality development.

However, under the teaching background of "learning from Soviet Union" and the traditional view of teaching, playing cannot act as a substitute for the curriculum^[17]. Vygotsky pointed out that children can learn following the education syllabus, but the teaching method should be interesting and attractive. Playing cannot replace the curriculum, and in the same way, curriculum cannot become playing. In instructional scaffolding, teachers, as a representative of culture, lead students to acquire and internalize skills that enable them to engage in higher cognitive activities. Such acquisition and internalization are consistent with their age and cognitive level. Once obtaining these skills, they can develop self-learning abilities^[17]. In kindergarten, Vygotsky defines playing itself as zone of proximal development (ZPD), or a kind of self-help tool driving children to get higher level of cognitive function. Teachers should think about the children's need for safety and sense of belonging, and support the integration of their new ideas into playing. Instructional scaffolding in playing is nearly equivalent to zone of proximal development (ZPD) of teachers' student scaffolding guide. Based on actual situations, the teachers' suggestions and playing are more likely to trigger children's reactions, while abstract questions and instructions will lead to mechanical thinking.

Conversely, although young children can play freely, they have lost interest in games because their abilities have exceeded the level of play, and it is only mechanical manipulation of materials. Is this kind of game meaningful to them? In short, the nature of a game is double-sided and should not be viewed linearly. The definition of traditional playing focuses on the purpose and the structure of the game. Nowadays, the definition of playing focuses on children's participation. Playing will seem like a joyful activity rather than a method or a process.

4. Example analysis

Through the analysis of cases of "curriculum gamification" in published literature, research points out that teachers become faithful records and positive praise of the development of children; the original desks and chairs in the activity room are not designed with the district corner; the meal is changed to "children self-help" style; A resource library and with various collected materials was set up in the relatively large space in the park; the kindergarten daily schedule and activities is arranged by the teachers.^[18] A teacher said: the class plan board namely selection panel and record of daily activities, can help children record time, understand the main activities of the day, and improve the autonomy of children's activities. In addition, the use of choice panel for children to choose area process added some symbolic factors, and can tell children the importance of their choice task. Even if the selection panel is applicable only for only once a day, it can also add order to children's selection process and game experience. There is no difference between the concept of curriculum gamification and that of game curriculum. In terms of autonomy, teachers can help children in making reasonable game plans and choices. The children will have complete control over their own games and are the masters of their own games. All materials and areas are open to all children, and they can choose whatever they want freely and independently.

In terms of the organization and implementation of the course, the theme activity link mentioned in Ding Yuling's paper is not significantly different from the currently advocated "generated curriculum."

“Haian Flower Drum” theme activity started when the teachers were asked to participate in the “county square dance” contest by the children. Based on the theme of “Haian Flower Drum,” the “I know the Haian Flower Drum” teaching activities were first carried out. Then, children began to imitate their teachers and create their own moves and beats. Thereafter, the activity of making the flower drum was carried out in the activity area. With the help of the teacher, the children began to make the “Haian Flower Drum” with Sprite bottles, stickers, small sticks, and other materials. Finally, the children used the flower drum made by themselves to create a flower drum dance. The teacher filmed and displayed the children’s dance, so that they can appreciate and learn the ideas of their peers while watching their own performance ^[19]. In the process of carrying out themed activities based on the children’s interest by activities like imitation and creation, art and craft, and followed by a dance performance, combined with children’s performance to guide thinking. Based on the array of activities, it is no different from the current kindergarten curriculum, which emphasizes on the generation of the curriculum rather than the presupposition. From the historical origin, Chen Heqin advocated that the concept of gamification in teaching methods has not been highlighted ^[20].

Anji Game, as a representative of what Wang Zhenyu called “game curriculum,” is indeed a successful practice for Anji County in Zhejiang Province, to develop park-based courses according to local conditions, but it should not be blindly imitated. Instead, the actual situation, location, and other factors should be taken into consideration. Anji games are not defined by bamboo and outdoor games, but it is designed with the integration of community resources, and with respect for the children’s right to play and their individual development. First of all, according to Professor Yu Yongping, “The gamification of kindergarten curriculum is a concept and practice.” Anji game is also suitable for such an expression — “Value the process and the spirit of the game,”

Through communication with many teachers in Jiangsu (more than ten different areas of Jiangsu preschool teachers / principal / superintendent), it was found that their understanding of curriculum gamification is different, but mentioned a point, the concept of “curriculum gamification” is easy to understand, but is difficult to implement with the current conditions of kindergartens.

5. Comments on “Curriculum gamification”

(1) Too much emphasis is given to slogans.

The focus is on pursuing what others have, not really thinking from the perspective of the children’s personal development and without considering their character and personalities, and not allowing them to do things by themselves. The efforts of administrative management are superficial, making the teachers too tired to cope with their workload. The issue of false acting still exists. (For example, children’s painting competition not being a competition where the students’ artworks are compared)

(2) Life itself is a form of education.

Children’s education is mainly in the form of game, then why bother “gamifying” the curriculum? When the behavior of children was not exploratory during games and activities, why was the problem ignored? The idea of gamification has been around even before the official implementation of these concepts and requirements.

The “curriculum gamification” concept is easily understood, but its implementation will be difficult due to the traditional way of thinking of education among the older generation, which only emphasizes on children’s health, such as whether their children are eating well and whether they are injured. In this way, not only do teachers need great observation skills, but they also need to be in charge of organizing projects and activities. However, their capacities are limited. It is unrealistic to urbanize rural kindergarten with the power of rural kindergarten teachers. However, every kindergarten and class now have project activities and every teacher has to create an observation video of the children that can be shared publicly as a result

of comparisons and introspection.

In Zhejiang, where the concept of “game curriculum” is popular, researchers have also found that educators can “skillfully” integrate the curriculum into the game, and educators can try to control the game content to a certain extent with certain situations and materials. However, is it feasible?

6. Discussion

It is worth noting that this group of concepts reminds preschool educators that playing is the way for children to learn actively. Teachers should pay attention to children’s games and support the enrichment and expansion of those games. From the perspective of researchers, the requirements for teachers’ professional quality are put forward. Children playing and teachers’ support while they are playing should not be deviated from each other. Teaching takes children’s understanding as the fulcrum to build the scaffold during their play, but whether teachers can provide or how to provide children’s current needed experience and interest points still needs to be further discussed.

In terms of building initiative, individuality, and social skills, the concept of “Curriculum Gamification” and “Curriculum-based Game” can be regarded as a beneficial attempt in kindergarten. However, there will still be challenges in implementing these concepts. Firstly, the expanded suitability of individualized practical experience needs to be considered such as whether “Anji games” can be applied in other places since it was created based on the unique environment of Anji. Secondly, it is necessary to pay attention to the perspective of front-line teachers. To change the teachers’ perception of playing, teachers should understand what makes children happy and be highly involved in their daily life so that the child will feel like they are “actually playing,” reducing their conflict between “spontaneous playing” and “teaching”. Lastly, in terms of administrative requirements, the principals also need to start from his own kindergarten conditions and teachers, and try to delegate responsibilities accordingly within their capacity.

Acknowledgments

This paper is the research result of the Preschool Game and Guidance (XM-6-94) of the excellent online vocational education course of Hebei Province Higher Vocational Education Innovation and Development Action Plan (2019–2021).

Disclosure statement

The authors declare no conflict of interest

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