INFLUENCE OF MIXED TEACHING MODE ON THE LEARNING OUTCOMES TO UNDERGRADUATE PROFESSIONAL COURSES AT CHONGQING COLLEGE OF INTERNATIONAL BUSINESS AND ECONOMICS STUDENTS IN CHONGQING, CHINA

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ABSTRACT
The objectives of this study were 1) to explore the influence of mixed teaching on the learning effect, 2) to improve the teaching quality of undergraduate professional courses. This research was mixed research. The conceptual framework of this research was applied from constructivism theory, deep learning theory, and COI inquiry community model theory. The population consists of a college student in Chongqing. The samples were student at a university in Chongqing as determined by descriptive statistics and reliability-validity tests. The instruments used in data collection was conducted by the questionnaire survey method. The statistics used for data analysis mean, standard deviation, and correlation analysis. The research results revealed that 1) the mixed teaching mode, the overall learning effect of undergraduates in professional courses is good, and there is little difference between different groups. 2) Students' learning characteristics, teachers' teaching factors and learning platform factors have a positive influence effect on the learning effect of undergraduates. 3) The high level of interactive behavior, self-regulation and psychological preparation in the mixed teaching mode, partly reflects the good fitness of undergraduates in the mixed teaching. In addition, undergraduates have a high overall evaluation of teachers' mixed teaching ability and learning platform.
Keywords: Mixed Teaching, Undergraduate, Learning Effect, Teacher Teaching, Learning Platform

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INTRODUCTION

The development of science and technology promotes the progress of education, and the development of economy promotes the reform of education. Many years ago, this expenditure was a huge pressure on the small office expenditure of any school, and almost no school could build a computer classroom. The economic depression makes the investment cost in education not high. Parents are their children's first teachers. At that time, there were only a handful of families who could buy computers at home, so students had no chance to have access to computers. In the 1980s, parents had no access to the Internet at all, and they could not give students good guidance. Internet teaching is almost a fantasy, but the environment now is completely different from that time. Due to the development of economy, the progress of science and technology, and the promotion of international status, our country attaches more and more importance to education. First of all, almost all schools in Chongqing have set up computer classrooms. With the purchase of computer equipment and the opening of computer courses in primary school, students can master the use of various software from an early age. It is also due to the progress of science and technology that we have invented the form of multimedia teaching, innovated the teaching mode, and carried out teaching reform, breaking through the traditional teaching in class, increasing the novelty and innovation of teaching, and greatly improving students' learning Interest and motivation to learn. In addition, in terms of family, the current family conditions have become better, and the computer has become an indispensable part of every family. Almost every child has access to the Internet since childhood, using the Internet to search for information and watch online courses, which has been used to it. In addition, the parents of today's students are basically post-90s, and the 1990s is the stage of rapid development of the Internet. This group of parents have been influenced and educated by the Internet, and the education concept is also relatively open, and they can give their children good guidance. In society, thanks to the development of the Internet, people can easily obtain materials anytime and anywhere. With the development of economy and society, not only the school office funds are in place, but also the education authorities at all levels pay more attention to and promote multimedia. In recent years, the change of our educational concept is to attach importance to quality education. In particular, the implementation of the new curriculum reform pays more attention to the cultivation and improvement of students' own quality, which requires us to adapt to the teaching methods and methods, including optimizing the teaching mode, ensuring the updating of the content and mode of Chinese teaching, and adapting the means and methods to the age and understanding of middle school students so that students have a higher language application and cultivation ability. Therefore, multimedia has naturally become people's first choice and outlet. Finally, we analyze from the social environment. Since 2019, due to the outbreak of the novel coronavirus epidemic in China, offline classes have been paralyzed, resulting in the loss of the advantages of traditional teaching. In these days of the epidemic, we can not affect the learning progress of students. Multimedia teaching is a must. First of all, teachers should innovate and change the teaching methods, from the original "blackboard class" to the current network class, and students can listen to the class anytime and anywhere. Even if he's quarantined at home, Even some students, due to illness and other special reasons, can also watch and replay to learn on their own, while students who do not learn well can also use this method to check the gaps and make up for the shortcomings. This method greatly improves the teaching efficiency of teachers, avoids repeated ineffective teaching, and allows teachers more time to prepare lessons and conduct curriculum research and development. Students who are not clear and do not understand can study independently, and will not affect the learning progress of other students. For today's 21st century, the popularity of computers, mobile phones and other electronic products is also another great support for online teaching, so that every student can have a different classroom in the absence of offline classrooms. For students themselves, this novel

way of learning can also improve their interest in learning, so that some students who have no interest in learning can rekindle the fighting spirit of learning. It also allows students to learn independently without reducing their learning efficiency, and students themselves have to change their learning mentality and adapt to the new education model. Independent learning loses the direct supervision of teachers, and relies more on their own consciousness of learning. The completion of homework and the state of class are very heavy Yes. However, it is precisely because of the influence of the environment that we need to overcome these difficulties and improve our online teaching and Internet teaching progress.

Research Questions

1) To what extent has multimedia teaching contributed to the improvement of students' academic performance, and what specific aspects of academic achievement show notable enhancement?

2) How does multimedia teaching impact the learning efficiency of students, and what factors contribute to the observed improvements in efficiency within an educational setting?

Research Objectives

1) To investigate the extent to which multimedia teaching has contributed to the improvement of students' academic performance.

2) To examine how multimedia teaching impacts the learning efficiency of students.

LITERATURE REVIEWS

Piaget's theory of cognitive development was proposed by the famous developmental psychologist Jean Piaget and is recognized as the most authoritative theory in developmental psychology in the 20th century. According to Piaget, young children's cognition is a building process that builds on existing schemas and then continuously develops from lower to higher levels through mechanisms such as assimilation, Accommodation, and equilibrium. That is how individuals gradually understand the world through perception, thinking, and reasoning in adapting to the environment (Jun Lang, 2011).

Four fundamental concepts of cognitive development theory

1) Schema is a central concept in Piaget's theory. It refers to a cognitive structure or model used to organize and interpret an individual's experience and knowledge of the world. A schema is a mental structure based on an individual's experiences and perceptions that contains a set of concepts, ideas, thoughts, and memories that enable the individual to recognize, classification, and understand new information. Schemas plays an important role in cognitive development. According to Piaget's theory, young children form different schemas at different developmental stages, and these schemas gradually evolve and change with cognitive development. Initial schemas are generally based on concrete experiences and sensations, and young children build and modify schemas through continuous experimentation and experience. Young children develop more abstract and complex schemas as cognitive development progresses to better process and understand new information and experiences. The formation and development of schemas are also affected by the cognitive conflict and balance of the individual. When an individual encounters new information or experience, it causes cognitive equilibrium if it is compatible with the existing schema; if it is not compatible with the existing schema, it causes cognitive conflict. Individuals re-establish cognitive balance by adjusting or modifying schemas and gradually develop and improve their cognitive abilities.

2) Assimilation refers to the process by which an individual, when confronted with new experiences or information, incorporates the new experience or information into existing cognitive structures and knowledge frameworks. In other words, individuals make new experiences and information understandable and interpretable by comparing and matching them with pre-existing knowledge and experience. Assimilation helps individuals connect new experiences and information to their existing cognitive structures, enabling them to understand

better and process the new experiences and information. Through assimilation, individuals can classify, sort out, and understand new experiences and information based on their pre-existing cognitive structures.

An important feature of assimilation is that individuals when confronted with new experiences and information, may attempt to classify them into pre-existing cognitive structures, even though such classify may be erroneous or inaccurate. In the early stages of cognitive development, this is because individuals often rely on pre-existing cognitive structures to interpret and make sense of new experiences and information.

3) Accommodation refers to the process by which an individual regulates his or her internal structure to adapt to a specific stimulus. When an individual encounters a new stimulus that cannot be assimilated with the original schema, he or she has to modify or reconstruct the original schema to adapt to the environment. This will force the individual to change the existing cognitive schema and form some new schema suitable for the new experience, causing the cognitive structure to evolve and change.

RESEARCH METHODOLOGY

Population and sample Group

Population: 4012 teachers from 120 kindergartens in Chongqing Municipality as the research subjects. Sampling: The sample group consisted of 351 teachers from 120 kindergartens in Chongqing. The sample group was determined using Krejcie and Morgan (1970) tables to determine the number of young children and was selected using simple random sampling based on the size of the kindergarten.

Research Instruments

The research instrument used in this study was a questionnaire, which was divided into the following three parts:

Part 1: This is an important information collection, including the teacher's gender, age, kindergarten, and teaching class.

Part 2: Investigating the effects of gamified teaching based on Piaget's four types of games in Kindergartens in Chongqing, China, and ask teachers about young children's interest and participation in games and how games promote development of young children in gamified teaching. It is mainly categorized into the following four types of games:

1) Sensorimotor games
2) Symbolic games
3) Structural games
4) Rule-based games

Data collection

To achieve the objectives of this study, the researcher used the following methods to collect the sample data: The researcher requested a letter from the graduate school to apply to the local education authority to allow the researcher to conduct a questionnaire survey in 120 kindergartens in Chongqing on the sample of this study, and The researcher collected questionnaires from a sample of 120 kindergartens in Chongqing. Instruments for experiment.

Data Analysis

The statistics used in this study are as follows:

1) Frequency distribution
2) Percentage
3) Average value ($\overline{X}$)
4) Pearson correlation coefficient

RESEARCH RESULTS

This part is to investigate the effectiveness of applying sensorimotor games, symbolic games, structural games, and rule-based games to teaching in promoting the development of young children in kindergartens in Chongqing, China, and to analyze the mean, standard deviation, and the results of the analysis are as follows:

Table 1 Examining the effectiveness of gamified teaching based on Piaget's four types of games in promoting development of young children in kindergartens in Chongqing, China.

Effectiveness of gamified teaching based on Piaget's four types of games	$\bar{X}$	**S.D.**	**Level**	**Rank**
Sensorimotor games	4.39	1.003	high	1
Symbolic games	3.99	0.947	high	4
Structural games	4.28	1.044	high	2
Rules-based games	4.24	1.077	high	3
Total	**4.22**	**1.020**	**high**	

Table 1 Examine that the effectiveness of gamified teaching based on Piaget's four types of games to development for young children in kindergartens in Chongqing is at the high level ($\bar{X}$ = 4.22, S.D. = 1.020). When looking at each item individually, it is found that each item is at the high level which are in orders from the highest to the lowest as follows: Sensorimotor games ($\bar{X}$ = 4.39, S.D. = 1.003), structural games ($\bar{X}$ = 4.28, S.D. = 1.044), rule-based games ($\bar{X}$ = 4.24, S.D. = 1.077), symbolic games ($\bar{X}$ = 3.99, S.D. = 0.947).

Table 2 Examining the effectiveness of sensorimotor gamified teaching to development for young children

Effectiveness of sensorimotor gamified teaching	$\bar{X}$	**S.D.**	**Level**	**Rank**
Ability to develop and enhance young children's senses, motor abilities, body control and coordination	4.36	1.029	high	3
Can develop young children's ability to perceive objects, space, and time	4.38	1.023	high	2
Ability to promote the mental health and physical development of young children	4.41	0.983	high	1
Total	**4.38**	**1.011**	**high**	

Table 2 Examine that the effectiveness of sensorimotor gamified teaching to development for young children in kindergartens in Chongqing is at the high level ($\bar{X}$ = 4.38, S.D. = 1.011). When looking at each item individually, it is found that each item is at the high level which are in orders from the highest to the lowest as follows: Ability to promote the mental health and physical development of young children ($\bar{X}$ = 4.41, S.D. = 0.983), can develop young children's ability to perceive objects, space, and time ($\bar{X}$ = 4.38, S.D. = 1.023), ability to develop and enhance young children's senses, motor abilities, body control and coordination ($\bar{X}$ = 4.36, S.D. = 1.029).

Table 3 Examining the effectiveness of symbolic gamified teaching to development for young children

Effectiveness of symbolic gamified teaching	$\bar{X}$	S.D.	Level	Rank
Can develop young children's imagination and creativity	3.95	1.042	high	3
Can promote the development of expressive language, social and emotional abilities in young children	3.97	0.905	high	2
Develops self-confidence and self-expression.	3.98	0.953	high	1
Total	**3.97**	**0.967**	**high**	

Table 3 Examine that the effectiveness of symbolic gamified teaching to development for young children in kindergartens in Chongqing is at the high level ($\bar{X}$ = 3.97, S.D. = 0.967). When looking at each item individually, it is found that each item is at the high level which are in orders from the highest to the lowest as follows: Develops self-confidence and self-expression ($\bar{X}$ = 3.98, S.D. = 0.953), can promote the development of expressive language, social and emotional abilities in young children ($\bar{X}$ = 3.97, S.D. = 0.905), can develop young children's imagination and creativity ($\bar{X}$ = 3.95, S.D. = 1.042).

Table 4 Examining the effectiveness of structural gamified teaching to development for young children

Effectiveness of structural gamified teaching	$\bar{X}$	S.D.	Level	Rank
Can exercise fine motor abilities, spatial cognition and creative thinking of young children	4.30	1.007	high	1
Ability to develop patience and concentration in young children	4.29	1.028	high	2
Ability to develop independent thinking and problem solving abilities in young children	4.27	1.064	high	3
Can enhance young children's interest in exploring the characteristics and structural attributes of objects	4.26	1.063	high	4
Total	**4.27**	**1.052**	**high**	

Table 4 Examine that the effectiveness of structural gamified teaching to development for young children in kindergartens in Chongqing is at the high level ($\bar{X}$ = 4.27, S.D. = 1.052). When looking at each item individually, it is found that each item is at the high level which are in orders from the highest to the lowest as follows: Can exercise fine motor abilities, spatial cognition and creative thinking of young children ($\bar{X}$ = 4.30, S.D. = 1.007), ability to develop patience and concentration in young children ($\bar{X}$ = 4.29, S.D. = 1.028), ability to develop independent thinking and problem solving abilities in young children ($\bar{X}$ = 4.27, S.D. = 1.064), can enhance young children's interest in exploring the characteristics and structural attributes of objects ($\bar{X}$ = 4.26, S.D. = 1.063).

Table 5 Examining the effectiveness of rule-based gamified teaching to development for young children

Effectiveness of rule-based gamified teaching	$\bar{X}$	S.D.	Level	Rank
Can foster the development of cooperation, competition, self-control and social interaction abilities in young children	4.27	1.051	high	1
Can develop logical thinking, decision-making and problem-solving abilities in young children	4.26	1.075	high	2
Can help young children learn to accept the psychological resilience of competitive failure	4.22	1.070	high	3
Total	**4.25**	**1.065**	**high**	

Table 5 Examine that the effectiveness of rule-based gamified teaching to development for young children in kindergartens in Chongqing is at the high level ($\bar{X}$ = 4.25, S.D. = 1.065). When looking at each item individually, it is found that each item is at the high level which are in orders from the highest to the lowest as follows: Can foster the development of cooperation, competition, self-control and social interaction abilities in young children ($\bar{X}$ = 4.27, S.D. = 1.051), can develop logical thinking, decision-making and problem-solving abilities in young children ($\bar{X}$ = 4.26, S.D. = 1.075), can help young children learn to accept the psychological resilience of competitive failure ($\bar{X}$ = 4.22, S.D. = 1.070).

DISCUSSION & CONCLUSION

The results of the study highlight the significant impact of gamified teaching strategies, particularly those based on Piaget's four types of games, on the developmental outcomes of young children in kindergartens in Chongqing, China. The findings indicate that all four types of games—sensorimotor, symbolic, structural, and rule-based—are effective at promoting various aspects of development, with each type contributing uniquely to children's growth.

Influence of Mixed Teaching on Learning Effectiveness

The analysis reveals that sensorimotor games have the highest effectiveness, closely followed by structural games. This indicates that incorporating a variety of teaching methods can cater to different learning styles and developmental needs. Sensorimotor games, which focus on physical interaction and sensory engagement, enhance children's motor skills, body control, and overall physical health. Structural games foster fine motor skills, spatial awareness, and creative thinking, essential for problem-solving. The combination of these game types in mixed teaching can create a comprehensive learning environment that addresses multiple developmental domains, thereby improving the overall learning effect.

Symbolic games also contribute significantly by nurturing children's imagination and creativity, which are vital for cognitive development. By integrating symbolic play with rule-based games that promote social interaction and logical thinking, educators can create a balanced approach that enhances both individual and collaborative learning experiences. This mixed teaching strategy not only fosters academic skills but also encourages essential life skills such as cooperation, competition, and emotional resilience.

Improving Teaching Quality of Undergraduate Professional Courses

The implications of this study extend beyond kindergarten education to the teaching of undergraduate professional courses. By understanding the effectiveness of gamified teaching strategies, educators can adopt similar methods in higher education. Incorporating game elements into professional courses can engage students more effectively, promote active learning, and enhance motivation. For instance, using simulations and role-playing activities can help students apply theoretical concepts in practical scenarios, thus bridging the gap between theory and practice.

Additionally, the findings suggest that developing a curriculum that includes a variety of interactive and gamified teaching methods can lead to higher student satisfaction and improved learning outcomes. By prioritizing the use of diverse instructional strategies that engage students actively, educators can foster a more dynamic learning environment that supports critical thinking, problem-solving, and collaboration—skills essential for success in today's professional landscape.

Conclusion

The effectiveness of gamified teaching based on Piaget's framework demonstrates a high level of impact on young children's development in kindergartens in Chongqing, China. This study underscores the importance of integrating various teaching strategies to promote holistic development, enhance learning experiences, and improve teaching quality in both early childhood and higher education contexts. By adopting a mixed teaching approach that leverages the strengths of different game types, educators can significantly enrich the learning process, ultimately leading to better developmental and academic outcomes for students. Future research could explore longitudinal effects of these teaching methods and their adaptability across different educational levels and subjects, further contributing to the discourse on effective educational practices.

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