

## Investigation on O2O Online Offline Mixed Teaching Model of Preschool Education under the Background of "Internet Plus Education"

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**Key words:** Internet Plus education, Preschool Education Programmes, Hybrid Teaching Mode, Kohonen Network Algorithm

**Abstract:** With the "Internet plus" concept proposed, the Internet began to expand to the education industry, the current education industry has formed the "Internet plus education" development model. Based on this a variety of new education models began to emerge, such as moocs, flipped classroom, micro-classroom and so on. However, with the continuous application of the Internet in educational practice, many problems have also been revealed. At present, "Internet plus education" has entered a difficult period of development. In this case, O2O (online to offline) begins to enter the "Internet plus education" mode. The purpose of this paper is to explore an online-offline mixed teaching mode suitable for the future development of "Internet plus education" by virtue of the research on preschool education courses. This paper on the "Internet plus education" and O2O mode has carried on the summary of relevant, and with the aid of Kohonen network algorithm, the relevant experiment, it is concluded that the current pre-school education problems in the course teaching of mixed mode, and puts forward establishing preschool education on the basis of the specific strategies of the mixed education mode, effectively promote the reform and development of preschool education courses. The experiments in this paper show that there are still many problems in the O2O online-offline blended teaching model of preschool education courses in China, which need to be improved.

### 1. Introduction

Since premier li keqiang put forward the strategic plan of "Internet plus", the concept of "Internet plus" has gradually penetrated into various fields, realized the new development of all walks of life, and realized the deep integration of the Internet and traditional industries. On the basis of this concept, the education industry has also carried out a new reform, many students continue to promote the teaching information, to promote the "Internet plus education" model of continuous attempts, this model promotes the continuous advancement of education reform. With the continuous advancement of this model, the O2O model from the business sector began to influence the "Internet plus education" model, solved the obstacles in the development process of "Internet plus education" model, and tried to build an internet-connected online and offline mixed teaching model. At present, this teaching mode has been gradually applied to all subjects in school education.

However, with the rapid development of the online and offline hybrid teaching mode, a series of problems have also emerged, among which the most significant is the universality of the hybrid teaching mode, which fails to realize the deep combination with various disciplines, and fails to highlight the characteristics of disciplines to the maximum extent. Therefore, it is particularly important to realize the integration of mixed teaching mode with different subjects [1-2]. Taking preschool education courses as an example, this paper explores the O2O online-offline mixed teaching model of pre-school education courses under the background of "Internet plus education". The current domestic and foreign scholars on "Internet plus education" and O2O mode in a series of research, through access to relevant data, found that most of these studies focused on separate to two modes, such as the "Internet plus education" mode and researching the current situation of the development of O2O model, but few studies have involved is established on the basis of two modes

of teaching research, specific to the preschool education courses online mixing the discussion of teaching model are much rarer [3-4]. Therefore, from this perspective, there is still a lot of room for improvement in this research, which needs further improvement [5].

To explore "Internet plus education background before learningenglish O2O education course online teaching mode, make up the existing theory of the blank, this paper on the" Internet plus education "and O2O mode has carried on the summary of relevant, and with the aid of Kohonen network algorithm, the relevant experiment, it is concluded that the current pre-school education problems in the course teaching of mixed mode, and puts forward establishing preschool education on the basis of the specific strategies of the mixed education mode, effectively promote the reform and development of preschool education courses [6-7]. On the one hand, it promotes the establishment of the scientific mixed education model of preschool education curriculum; On the other hand, it lays a certain theoretical foundation for the future research.

## 2. Method

### 2.1 Internet Plus Education and O2O Model

"Internet plus education" means the application of Internet technology to the education industry, realizing the deep integration of Internet technology and education industry, and on the basis of giving full play to the advantages of the Internet, promoting the modernization development and brand new reform of China's education. This education model is proposed on the basis of the concept of "Internet plus", which is an inevitable trend of the continuous development of education [8]. The full name of "O2O" model is Online To Offline (Online To Offline), which first appeared in business. It mainly refers To the Online and Offline communication and negotiation between consumption and services through the network, aiming at bringing better consumption experience To consumer users. This model promotes the development of the whole business sector. The combination of O2O model and "Internet plus education" can solve various problems existing in the current Internet education background and achieve new breakthroughs in education [9-10]. In particular, the application of this business concept to the teaching of preschool education courses can build an O2O online-offline hybrid teaching model. Students can learn preschool education courses online through the Internet, and teachers can answer questions offline. Students can submit assignments online, take course exams, and take pre-school class hours offline. In this way, a deep integration of online and offline teaching has been formed. It breaks the traditional teaching model of preschool education and promotes the continuous improvement of teaching efficiency [11-12].

### 2.2Kohonen Network Algorithm

The Kohonen network algorithm is used to make a deep analysis of the situation of online and offline teaching, which can not only judge the type of learning situation represented by the output learning data, but also understand the relevant data situation of online learning in real time, so as to obtain the characteristic analysis of relevant learning and teaching data [13]. Therefore, on the basis of Kohonen network algorithm, in-depth analysis of mixed mode teaching data can be realized, especially in the optimization of learning members and management. Members who participate in learning and teaching are optimized to integrate and arrange personalized learning resources according to the learning level of different students, so as to meet personalized needs. Among the selected learning members, the difference value ( $D_{ij}$ ) between the management demand of the network platform and the ability of the management members is as follows:

$$D_{ij} = \sum |a_i - b_j| \quad (1)$$

Where, input personnel is the manager of network learning, network platform device is represented as output neuron, and  $b_j$  represents the node weight contained in its neighborhood. To optimize the management of the course learning network platform is mainly to realize the integration of teaching methods to the maximum extent. The purpose of optimizing management matters is to realize the effective management of online and offline teaching by teachers [14-15].

The teaching design plan of class y is selected, and the teaching effect achieved by the teaching design of class x on the network platform of preschool education course is  $O_{xy}$ . The specific calculation formula is as follows:

$$O_{xy} = c_x \times d_y \quad (2)$$

### 3. Experiment

The first step is the collection and arrangement of experimental data. The teaching data of current preschool education courses are collected comprehensively by means of questionnaire survey and literature materials. The teaching data mainly involve the content, methods, means and overall effect of preschool education. In particular, the specific data of preschool education curriculum teaching in the context of "Internet plus education". When collecting relevant teaching data, it is necessary to pay attention to the comprehensiveness of the data, and on this basis, extract the main characteristics of preschool education course teaching in the background of "Internet plus education", aiming to find out the problems existing in the current course education.

The second step is group experiment. A total of 300 preschool education students were selected as the experimental subjects. These people were divided into three groups of experimental samples, namely traditional teaching mode group, O2O mixed teaching mode group and "Internet plus education" mode group. Experiments were conducted on these three groups of samples, including theoretical learning, practical learning, comprehensive learning effect and other aspects. Through comparative experiments, the differences of different modes in preschool education curriculum teaching are obtained.

The third step is the processing and analysis of experimental data. On the basis of the above experimental data records, Kohonen network algorithm was used to process the data, and Excel tool was used to draw the data table to get a more intuitive data analysis, and then relevant conclusions were drawn on this basis.

## 4. Discuss

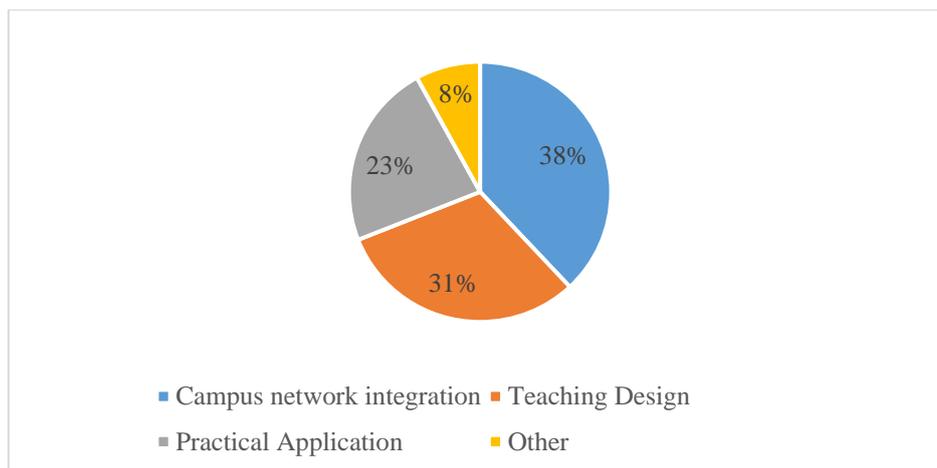
### 4.1 Experimental Results and Analysis

Through the above grouping experiments, we can draw a conclusion: on the one hand, compared with the other two teaching models, O2O model shows great advantages and effectively promotes the progress and development of preschool education curriculum teaching; On the other hand, there are still many problems in the O2O online-offline teaching model, which need to be further improved. The specific experimental data are shown in table 1 and figure 1. The data in the chart are the results of the author's experimental arrangement.

**Table 1.** Comparison of teaching data under different teaching modes

Training Mode	Theory of Learning	Practice Learning	Comprehensive Effect	Fit with the Internet
Traditional Model	92.25%	61.17%	72.29%	43.65%
Internet plus Model	87.97%	88.51%	89.42%	72.29%
O2O Model	93.54%	92.17%	93.34%	96.34%

\*Data came from the in-depth analysis of financial data in the experiment



**Figure 1.** Main problems with mixed mode

It can be seen from the data in table 1 that among the three modes of preschool education teaching, the traditional mode of teaching has the worst effect and cannot meet the development requirements of the new era. The "Internet plus" model has been improved to some extent, but has not achieved the desired effect. The teaching effect of the mixed teaching mode is obviously higher than that of the other two modes. It can be seen from the data in figure 1 that there are still many problems in the current mixed teaching mode, among which the main problems are reflected in the three aspects of teaching design, integration with campus network and application of information network. The following is the construction strategy of O2O online and offline mixed teaching mode for preschool education courses.

#### **4.2 Construction Strategy of O2O Online-Offline Mixed Teaching Model for Preschool Education Courses**

(1) Build a teaching platform deeply integrated with O2O on the basis of campus network

The primary task of constructing O2O online-offline mixed teaching model for preschool education courses is to build a teaching platform deeply integrated with campus network and O2O. As can be seen from the data in figure 1, the current hybrid model is divorced from the Internet. Despite the emergence of various forms of Internet courses, these courses are based on the satisfaction of business needs and do not effectively rely on the campus network, resulting in the separation between online course resources and offline teaching, which is not conducive to the development of teaching. Therefore, it is necessary to pay attention to the effective integration of teaching resources, pay attention to the effective sharing of preschool education course resources, and meet the learning needs of different subjects such as students, teachers, schools and social personages. Therefore, we must rely on the campus network, only in this way can we realize the deep integration of online teaching resources and offline teaching, and ensure the continuous improvement of teaching efficiency of preschool education courses.

(2) Build an appropriate teaching design based on the O2O mixed teaching model

The establishment of teaching platform does not mean the smooth development of teaching activities, in which teachers still occupy a dominant position. The teaching design of teachers is related to the smooth application of mixed teaching mode in teaching. Traditional teaching design cannot adapt to the O2O teaching mode under "Internet plus education", so teachers must combine the significant characteristics of the mixed mode to carry out a new teaching design. The teaching design under the mixed online and offline teaching mode must cover the following aspects: first, teachers' preparation before class and students' independent learning; In designing, teachers should improve all aspects of online and offline teaching. In designing problems, they should conform to the characteristics of O2O model, realize effective integration of pre-class learning resources, and help students to learn independently. Second, in terms of cooperative learning in class, teachers should conduct data analysis on problems encountered by students in online learning during teaching design, understand a series of problems existing in students' learning process, and provide

personalized offline learning guidance. After the end of the learning process, students should be guided to participate in the offline cooperative learning, and students' learning status should be evaluated comprehensively. The third is that the teaching design should be able to give effective feedback to students' learning situation, constantly improve the teaching design according to various data of online learning, and promote the effective progress of preschool education courses.

(3) Constantly improve teachers' theoretical basis and application ability of information technology

The establishment of scientific O2O online and offline mixed teaching model needs to give full play to the leading position of teachers. Therefore, under the background of "Internet plus education", teachers must constantly strengthen their ability to use various information technologies, learn basic theoretical knowledge, promote the constant updating of teaching concepts, establish the concept of online and offline mixed teaching, and constantly adapt to the new era of education. Teachers to understand the characteristics of the preschool education courses, to implement the curriculum and the effective integration of information technology, the design of the teaching on the basis of this, in to carry on the thorough understanding of the students' learning situation and, effectively integrate better network course for student to study the preschool education curriculum resources, help students to improve the efficiency of learning this course.

## 5. Conclusion

With the rapid development of Internet information, the O2O online-offline mixed teaching mode has realized the deep integration of various teaching methods, realized the complementary advantages between different information, and promoted the further development of "Internet plus education". However, there are still many problems in the current mixed education model. Therefore, when constructing the mixed online and offline teaching model, it is necessary to combine relevant curriculum characteristics and arrange it scientifically and rationally according to the subject situation and teaching characteristics, so as to give full play to the advantages of mixed online and offline teaching effectively.

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## References

- [1] ZHANG Yue, YU Meng-ting. Application of Action-oriented Teaching Method in the Teaching of Preschool Education Courses[J]. Journal of Xiangyang Vocational & Technical College, 2017, 32(17):112-115.
- [2] TU Pin. Practice and Analysis of O2O Mixed Teaching Mode in Higher Vocational Colleges under the Background of Wisdom Learning[J]. Journal of Heilongjiang College of Education, 2019, 3(14):118-121.
- [3] Xisan Wei, Qiong Gu, Ying Luo. The reform of computer experiment teaching based on O2O model[J]. Computer Applications in Engineering Education, 2018, 19(5):428.
- [4] Liu Guihua. Innovation on the Teaching Modes of Universities Under the Background of "Internet Plus"[J]. Journal of Higher Education, 2017, 27(18):417-421.
- [5] Diner, Ayemine, Yavuz, Hatice idem. Evaluation of Preschool Education Program According to the Views of Prospective Teachers (A Case of Ankara University)[J]. Procedia - Social and Behavioral Sciences, 2017, 152(33):100-104.
- [6] CHANG Hui, ZHOU Jing-Rong. Construction and Practice of Mixed Online and Offline Teaching Based on Cloud-with the Course of Installation and Testing of Automatic Production Line

- as an Example[J]. Journal of Anhui Vocational & Technical College, 2019, 34(11):374.
- [7] Duan Maojun, Li Jianhui, Wei Yang. Application of Four Online and Offline Mobile Phone-assisted Methods in Teaching[J]. Journal of Higher Education, 2017, 52(33):614-618.
- [8] Megan S C Lim, Spring Cooper, Larissa Lewis. Prospective mixed methods study of online and offline social networks and the development of sexual agency in adolescence: The Social Networks and Agency Project (SNAP) protocol[J]. BMJ Open, 2019, 9(5):439.
- [9] Shom Prasad Das, Sudarsan Padhy. A novel hybrid model using teaching–learning-based optimization and a support vector machine for commodity futures index forecasting[J]. International Journal of Machine Learning & Cybernetics, 2018, 9(1):97-111.
- [10] Ramanpreet Singh, Himanshu Chaudhary, Amit K Singh. A new hybrid teaching–learning particle swarm optimization algorithm for synthesis of linkages to generate path[J]. Sadhana, 2017, 42(11):1-20.
- [11] Kavalari, Paraskevi, Kakana, Domna–Mika, Christidou, Vasilia. Contemporary Teaching Methods and Science Content Knowledge in Preschool Education: Searching for Connections[J]. Procedia - Social and Behavioral Sciences, 2017, 46(12):3649-3654.
- [12] Bonk C, Graham. The handbook of blended learning:Global perspectives,local designs[J]. New York Pfeiffer, 2018, 18(5):172-173.
- [13] Driscoll M. Blended Learning:let’s get beyond the hype[J]. E-learning, 2017, 3(12):117.
- [14] Anonymous. The Use of Computer Assisted Instruction in Preschool Education: Making Teaching Meaningful[J]. Early Childhood Education Journal, 2017, 33(2):99-104.
- [15] Song Shuqiang, Gao Xuan, Zhong Xiaoliu. From Flipped Classroom to Flipped Conference:A Study on Academic Conference Mode and Its Technology-Supported Platform in O2O Environment[J]. Journal of Distance Education, 2017,16(31):479.