





## CAD Technology-driven Teaching Ability Training Strategies for Early Childhood Education Graduates

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**Abstract.** In China, almost all kindergartens have set up early childhood education courses, but the learning effect of children is not very satisfactory. This is mainly because the traditional "preaching" teaching method cannot stimulate children's learning motivation, which seriously hinders children's initiative. Therefore, it is urgent to find a more effective way to carry out early childhood education. Fortunately, modern information technology dominated by computer multimedia provides us with a platform, and constructivist learning theory provides us with a theoretical guide. Under the dual support of theory and technology, it is of great theoretical and practical significance to explore new teaching methods for children and to promote the comprehensive and long-term development of children. This paper analyzes and researches the current situation of preschool education and the application of computer in preschool education, and takes the relevant theories of constructivist learning environment design as the support point, and uses computer to assist in creating preschool teaching situations. According to the specific situation of the children, select teaching topics, carry out specific teaching design for children, observe and evaluate the specific classroom performance of children, and use this as a data source. At the same time, the teaching cases are analyzed to find out the places and deficiencies that can be used for reference. Through data analysis, it is concluded that the children in the experimental class have significantly improved their ability to repeat, raise their hands, and concentrate through computer-aided and well-created situations for two months. The effect of force concentration is particularly pronounced.

**Keywords:** computer-aided technology; early childhood education; teaching ability.

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## 1 INTRODUCTION

The preschool education major is not to cultivate social elites, but to supply skilled talents with strong practical ability to front-line jobs. Early childhood education graduates generally go directly to the workplace after leaving the campus, which inevitably makes them pay more attention to practical skills closely related to front-line work, and are willing to invest more time and energy for this. Examining the current situation of language teaching in preschool education, we can find that language teaching in preschool education not only has practical disadvantages that cannot fully meet the needs of professional positions, but also faces the problem of lack of effective training strategies, which leads to preschool teachers. Das et al. [1] think that there is a big gap between the language proficiency requirements required for vocational positions and the current situation of students' language proficiency. Based on this, I draw on the summary and reflection of language teaching experience in relevant schools, and also combine my long-term language teaching practice work, from preschool education students. The basic principles and specific strategies of language ability training have been studied. It is believed that following the employment orientation will definitely be able to break through the difficulties of language teaching in preschool education.

Brinitha [2] considers the implementation of preschool teaching is generally organized by preschool teachers themselves. Their love for the course and the knowledge and skills they master will directly affect the quality of preschool teaching activities. Some kindergarten teachers do not have a deep understanding of the value of education, and most normal colleges' preschool education major training programs rarely involve language education content, and students are seriously lacking in relevant language training, which leads them to engage in preschool teachers in the future. Ioannis and Yannis [3] think there is no scientific guidance and can not meet the needs of children's physical and mental development. It can be seen that in order to better achieve teaching goals and complete teaching tasks, it is necessary to strengthen the cultivation of students' teaching ability. The modern teaching mode is based on the cooperation between schools and enterprises. Teachers and students are in the same problem situation for teaching and learning, which fully reflects that teachers teach students according to their aptitude according to individual differences. Adjustment, this model can not only further promote students' learning initiative and increase their interest in the content they are learning, but also allow students to participate in corporate work, conduct internships, experience the similarities and differences between schools and companies. The art friend system also emphasizes the importance of practice, and proposes that the central school method should be used to train teachers, which is similar to the professional development of teachers advocated in modern times. In general, the integration of teaching and doing in the art-friend system is the common theoretical basis of both the modern apprenticeship system and the art-friend system, and it has an inevitable connection. The training mode of education provides a reference, and we can also learn from it to train future kindergarten teachers. Hong et al. [4] think that as an important part of early childhood education, physical education can also lay a theoretical and practical foundation for cultivating students' physical education ability.

With the development of society and the advancement of science and technology, multimedia has entered the classroom. Chen and Jin [5] think the intuitiveness of multimedia can drive children's interest, make children's language teaching classrooms lively and interesting, and mobilize children's enthusiasm for language learning, thereby promoting the overall promotion of children's language learning. Improve children's language skills. Therefore, in the production or selection of multimedia for teaching, the unified combination of text, animation, sound, video and other forms can bring a perceptual impact to children, thereby deepening children's language learning and memory. Therefore, students majoring in preschool education should have a deep grasp of computer skills and multimedia technology, choose to make works that children like, and further improve the language teaching ability of students majoring in preschool education. With the continuous development of computer technology, it provides new possibilities for the creation of children's language environment [6].

First, computer multimedia is much richer than traditional methods in terms of presentation and content of information. Multimedia information technology integrates pictures, audio, video, and animation, providing children with multi-sensory channels and multi-directional feelings. When multiple sensory stimuli act on different areas of the brain at the same time, the brain is in a more active state, learning occurs on a wider level, and the learning effect is doubled [7].

Secondly, computer multimedia is used in children's language teaching activities, with vivid sounds and animations for stories and children's songs. Novel, intuitive and realistic computer pictures can attract children's attention and stimulate children's curiosity and desire for knowledge.

Thirdly, multimedia can make up for the lack of professional teachers in Chinese kindergartens. Whether in urban or rural areas, children can receive standard voice input and improve their voice imitation ability. Standard pronunciation and simulated situations allow children to directly experience culture and life, construct language meaning through more meaningful information, and enhance their understanding of semantics, which can not only improve children's interest in language, but also deepen their understanding of language. Impressions of language itself and scenes of life [8].

In addition, multimedia can create many things that are difficult to see in reality due to time and space or various conditions. If the hardware facilities permit, we can also use the interactive functions of a variety of software to provide children with independent exploration situations, and can also design a variety of multimedia courseware for children to click and learn by themselves [9-10].

By reading a number of domestic and foreign related literature and related books, it can be found that the research on the physical education teaching ability of preschool education students is relatively lacking. Although a small part discusses the professional awareness and dance teaching ability of students in this major, there is still a lack of research. Contents related to the development of children's teaching ability. Some scholars have conducted various researches on early childhood education, including related concept connotations, enlightenment values for modern teacher education, and educational ideas advocated. Promote the continuous development of teachers' teaching ability. From the research results of the retrieved literature, we can also see that the teachers who are currently engaged in preschool education have poor teaching ability, and the state has not paid enough attention to the training in this area, and most scholars' research is still focused on reforming the curriculum and adding juvenile majors. , to promote the cooperation between the academies and other aspects to strengthen the quality of its training Although there have been many studies on multimedia computer-assisted language teaching for young children, and some influential research results have also been achieved, there are still many problems in the actual teaching process. Although preschool teachers use multimedia in teaching, they only use simple machines, most of which are played by playing cartoons, and lack classroom teaching design, especially the design of learning environment. Advocates of contemporary advanced educational ideas and teaching theories believe that information technology is not only an auxiliary tool for teaching, but more importantly, to use information technology to construct an ideal learning environment to support autonomous learning and enable learners to be autonomous and full of positivity. Today, when information is updated too fast, we have been committed to changing the traditional teaching structure, and the creation of a new learning environment is to support the new teaching method and is the main component of the new teaching structure.

## **2 COMPUTER-AIDED TEACHING ABILITY CULTIVATION STRATEGIES**

Practical teaching is divorced from the reality of early childhood teaching, and the teaching content lacks pertinence, and does not truly combine practical teaching with actual needs and the status quo of kindergartens. This often makes pre-school normal students fall into a blind state when they practice in kindergarten, not knowing what to practice and how to practice. With the development of society, the requirements for preschool teachers in all aspects are getting higher and higher, not only requiring academic qualifications, but also requiring colleges and universities

to cultivate outstanding normal students with high comprehensive quality and strong teaching practice ability. However, due to the lack of pertinence in practical teaching, the teaching practice ability of pre-school normal students is not high.

Curriculum practice is an important way for students to improve their professional skills. It is a practical teaching link based on professional theory courses and skill courses. It combines theory with practice and continuously improves the curriculum system. "Training is the main line, ability training is the goal", and the interactive and inquiry-based teaching mode is adopted to improve students' professional skills and application ability of professional knowledge, thereby improving students' teaching practice ability.

In the teaching process, teachers should actively interact with students to realize the change of students' learning methods, teachers' teaching methods and the interaction methods between teachers and students, so as to achieve the goal of common development. The main goal of interactive practice is to improve students' academic performance and exercise students' self-learning ability. It is beneficial to improve students' spirit of exploration and the comprehensive level of students, so that they can master knowledge actively, and have the basic abilities and basic qualities of early childhood educators, such as communication skills, exploration spirit, etc., so as to improve kindergarten educators. Game creation is one of the skills that kindergarten teachers are required to master. During the game, the language ability of kindergarten teachers can be improved. As a kindergarten teacher, learn to control the game reasonably, master the game language and organize each game well before starting the game. Try to choose games that you are familiar with. In the future, you can arrange games according to the actual situation of kindergartens and young children. Let every preschool education student effectively participate in the game teaching. In the game, create a comfortable learning environment for preschool students, and absorb language knowledge in a comfortable environment.

The fundamental purpose of inquiry-based practice is to stimulate students' awareness of problems, to cultivate students' innovative spirit, and to raise problems independently and analyze and solve them as the basic characteristics. Teachers must have the ability to set up and discover problems skillfully, and at the same time be good at creating an atmosphere for exploring problems. In the inquiry-based practice, it can open up ideas for students and resolve the difficulties and confusions encountered by students in their learning. As a teacher, we must have a generous mind, and we must be good at encouraging and supporting students' unconventional viewpoints. The development of inquiry learning should be as colorful and realistic as possible.

Discovery practice means that under the guidance of teachers, students can independently discover problems and propose solutions. In this kind of practical teaching, the method of students' mastering knowledge has been changed, and they have a deeper understanding of how to learn and how to find problems, help students to master the methods of information processing, greatly improve students' logical reasoning ability, and promote teaching. The improvement of practical ability. In the future teaching, being able to explore the problem in a rigorous and scientific way of thinking is conducive to the cultivation of students' teaching practice ability.

Teachers can use the actual teaching of kindergartens as the basis to form a complete set of practical teaching system for the training of preschool education majors. Prospective teachers can create a practical atmosphere or teaching environment similar to reality, create multiple resources, and create a three-dimensional teaching environment for students. For example, courseware production, lesson plan design, classroom simulation, summary and reflection after each training session, etc. Hire kindergarten front-line teachers and key teachers to teach related courses and guide preschool normal students in their study, practice and research. Through these methods, students can not only have good language skills, performance skills, teaching skills, etc. that early childhood educators should have, but also have good comprehensive skills, such as communication skills, good on-the-spot response and problem-solving skills, and autonomous learning.

Educational practice is an important link to improve teaching practice ability. The first stage is teaching practice experience. Students have a one-week teaching practice experience every semester during their freshman and sophomore years. They observe kindergarten teachers in

class, contact with children, conduct kindergarten games, and design childcare activities to help students understand children. The characteristics of the position of the teacher and the formation of professional awareness. The second stage is teaching practice. Under the guidance of college teachers and kindergarten teachers, kindergarten teaching activities are carried out, so that students can realize the transformation from "students" to "teachers".

### 3 CASE STUDY

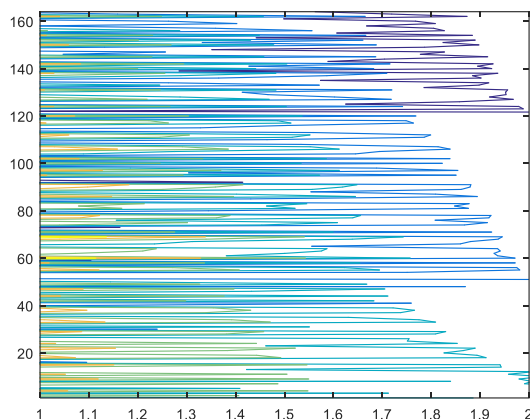
Taking English education for young children as an example, early childhood teaching has a certain degree of flexibility and requires teachers to continue to be creative. We cannot blindly rely on old experience and old methods for teaching, because young children are always more interested in novel things. The subject and content of the teaching should be selected according to the actual situation. For example, the lunch on Tuesday is rice and there are many kinds of vegetables. The unit "vegetables" can be put in the English class on Tuesday morning, and the English words learned in the morning can be used for lunch. The sentences are applied to the dining activities, imitating the clips in the teaching videos. Teachers can help design the content of the activities, such as role-playing chefs, waiters, guests, etc., so that children can easily and happily complete the cognitive transfer. At the same time, teachers cannot copy the teaching materials, and should selectively expand the teaching content according to the real life of children. For example, when learning "food" food, in addition to learning foreign staple foods such as "hamburg" and "pizza", it is necessary for children to understand Our Chinese daily diet, such as "noodles", "dumpling", etc., makes it easier to apply what we have learned, and it is convenient for us to transfer knowledge to real life. The actual operation process of the case is as follows:

The teacher first plays the cartoon, and then discusses with the children what the cartoon is about, allowing the children to raise their hands to speak. Dongdong: Teacher, I know, they ordered food in the restaurant, and the waiter was the one who brought the plate. Teacher: Oh, so that's the case, then how do they order food, what do they order? Yaoyao: They speak English and can't understand it, but I heard him say "bread", we learned "bread" when we learned "B". Teacher: Well, that's great! Doudou: I saw they ordered burgers, dumplings, noodles, which are all my favorites. Teacher: What a good boy, no wonder he grows so tall, only if you are not picky eaters can you grow fast! The other children also scrambled to say what food they saw. Teacher: Children are very smart. If we go to a foreign country, we must speak English so that others can understand and we can buy things, so we must learn their language, then let's learn together!

Secondly, open the pre-made courseware. The courseware contains exploded diagrams and dialogue sounds in the animation, explaining picture by picture, and guides the children to read along, "What do you want? I want eggs (bread, dumpling... ). After being proficient, let the children voluntarily raise their hands to read. The predicted results are shown in Figure 1.

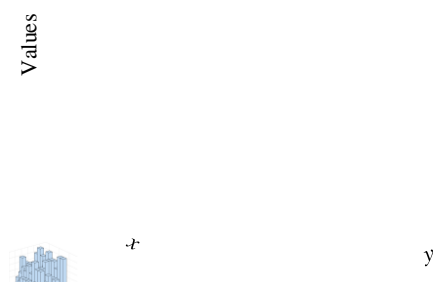
Then, ask the children to talk about the foods they like to eat, and learn the English of these foods (the teacher should prepare English cards for various foods in advance, and try to collect various foods in the slideshow courseware). Combining the favorite foods that the children say, make up English children's songs, such as Rice rice (can be adapted into various foods), I like rice. Noodles noodles, I like noodles. Dumpling dumping, I like dumping. Yummy yummy yummy!

Finally, collect English snippets about ordering in real life to understand the eating habits of foreigners. Let the children watch and imitate, and try to speak in English. At the same time, improvements can be made to include our Chinese food (free play by young children). The activities are carried out in the activity area where the table and props are arranged in advance. The teacher arranges the guidance and tries to let every child participate in the activity.



**Figure 1:** Predicted results.

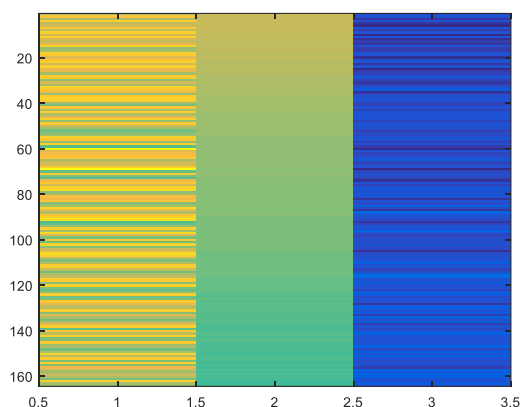
In this teaching case, firstly, the learning content is presented in cartoons that children like to touch, creating a relaxed and happy atmosphere for children. Secondly, the selected learning content is the scenes that children often see and experience in real life, which can easily arouse children's experience extraction and emotional resonance. Especially young children are more interested when they see what they eat, and the colorful pictures in the animation arouse their strong curiosity. Introduce young children to English learning by taking advantage of the picture and text, so that children can change the slides within the time range of attention that can be maintained (it can be repeated several times, but do not stop reading and learning on one page). After systematically learning the pronunciation of various foods, the children can create and learn independently, and can adapt the English nursery rhymes in the accompanying CD according to the names of the foods they like. This will give full play to the autonomy and creativity of children, but because children are young, if they do not provide some learning references, it is easy to lead to imaginative and deviating from the theme. The evaluated values are shown in Figure 2.



**Figure 2:** Evaluated values.

The theory of learning environment design emphasizes the authenticity of the situation, so we should not only provide standard pronunciation, but also let the children understand the real-life scene. Therefore, in this case, in addition to providing children's favorite animation videos, they also collected exotic real-life clips and integrated them into our teaching activities, providing a life

prototype for children's activities. Community of practice is the focus of the "student-centred learning environment", which requires all community members to engage in common tasks and share common sense and practical reasons. In this case, the whole group of young children belongs to a community of practice, and the role of the group is fully demonstrated. Because they have many experiences of "playing the house", they can almost completely break away from the teacher in learning "ordering food" and arranging the scene, organize themselves, and generate various ideas, for example, they will arrange the biscuits into various shapes, will match vegetables according to color, will imitate the content in the video to make "burgers" with steamed buns, etc., and give full play to their experience and share with each other. In such a game atmosphere, English learning has also become a part of the game, out of the boring. The evaluations are shown in Figure 3.



**Figure 3:** Evaluations.

Based on principal component analysis, this paper analyzes the influencing factors of preschool education students' teaching ability training in a school, and through reading literature, consulting relevant materials, and with the guidance and help of tutors and other experts, the influencing factors of its training are analyzed. After screening and modification, an influencing factor scale was finally designed.

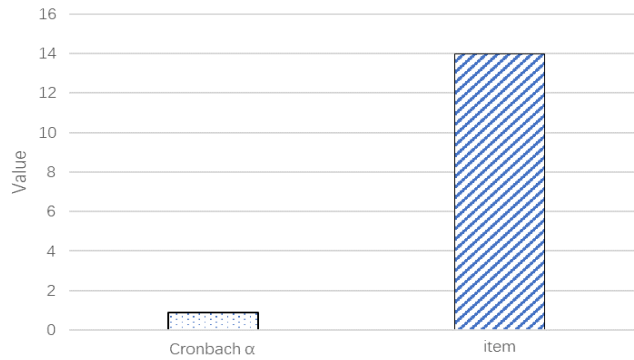
This paper mainly uses the method of measuring Cronbach  $\alpha$  in the reliability analysis module of Scale in SPSS to carry out the reliability test. As shown in Figure 4, the Cronbach  $\alpha$  value is greater than 0.7, which proves that the measurement consistency level is high. It can be seen from Figure 5 and Figure 6 that the average scores for the selection of these 14 indicators are all around 3 points, and the selection fluctuations of students' interest in majors and students' cognition of physical education ability are slightly higher than those of the other 12 items.

According to the intra-group correlation coefficient in Figure 7, the selection reliability of the 459 students is relatively high (0.884-0.911). There is a high consistency in the distinction of different indicator variables.

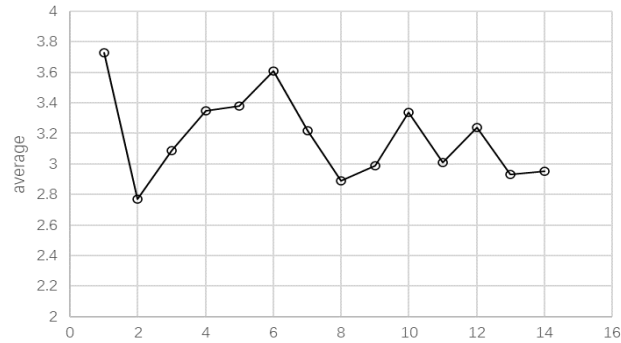
#### 4 CONCLUSION

The application of computer is the inevitable development trend of preschool education. Although the application of computer in early childhood education is still controversial, and some disadvantages of computer are also highlighted with the wide application, the powerful role of computer in early childhood education is irreplaceable, so we can boldly predict that the use of computer multimedia The application of modern information technology in preschool education is

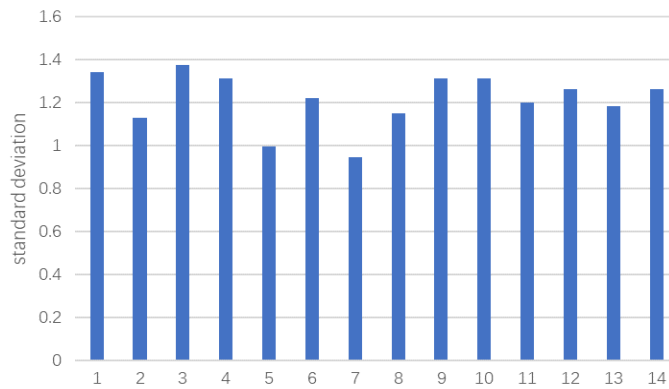
the future development trend of preschool education, and the application will become more flexible and richer.



**Figure 4:** Reliability statistics.

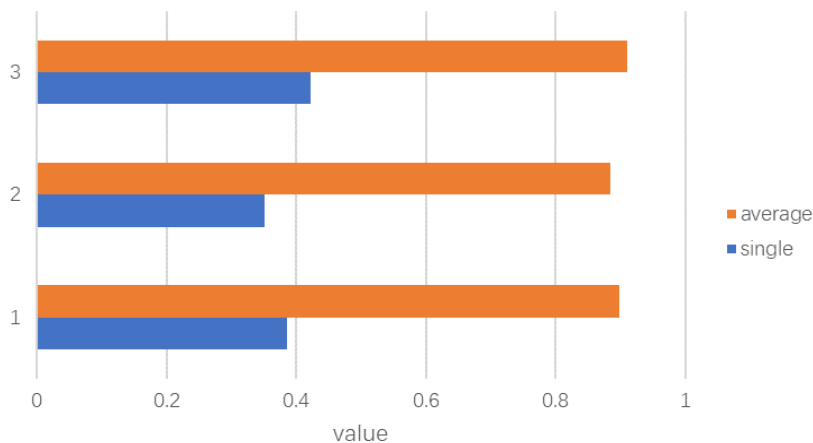


**Figure 5:** Average value.



**Figure 6:** Standard deviation.





**Figure 7:** Basic information of the respondents.

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