Application of Information Technology in Early Education

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Abstract: The current mainstream view of the industry is to use information technology as an aid to early education. Early education should be guided by development suitability and information technology and early education courses. Effective integration promotes learning and development for early childhood. Looking at the development of preschool children from an ecological perspective, information technology supports the professional development of early education teachers is an important measure for information technology to effectively promote the development of early education quality. Information technology has penetrated into every corner of the professional development of preschool teachers, and has become an indispensable supporting factor in the professional development of preschool teachers. In the future, more emphasis should be placed on the role of digital resources, data and mobile learning in the professional development of early education teachers.

1. Introduction

Information technology, also known as Information and Communication Technology (ICT), refers to anything that allows us to access information, communicate with people, and influence the use of electronic and digital device environments, including computer technology and communications. Technology, microelectronics, optoelectronics, information security, smart technology and software technology. Today, the growth, learning and development of preschool children are closely linked to modern information technology. The use of information technology in early education has penetrated into every aspect. Early education, as the initial stage of education, has incomparable speciality and importance in the development of children's life. The application of information technology in early education should explore a more appropriate and effective road.

2. The pros and cons of using information technology in early education

Beginning in the 1980s, as computers entered the field of education, there were more and more studies on the use of computers by early childhood, and the relationship between computers and early childhood became a hot spot of concern. Many people are concerned that the use of information technology will affect the development of early childhood. They believe that the radiation of the screen media will harm children, and it will also affect vision, leading to obesity. Excessive use of information technology will also affect children's sleep, behavior and attention, resulting in less learning activities and society. Interaction and language behavior.

However, more studies have found that information technology has a positive impact on children's language, socialization, cooperation, and intellectual development. Information technology can create a good language learning environment, optimize the process of language learning and migration, and improve the participation of children in learning languages. Technology can also provide more opportunities for young children to cooperate, and they are more cooperative and cooperative. In addition, the environment created by ICT also provides important conditions for the development of children's creativity and intelligence.

Continued disputes call for a better understanding of early childhood children's use of information technology. Everyone realizes that it is not enough to simply argue whether "early children should use information technology" because we have little choice, computers are already here, and they will

become more popular. What we want to study is how to use it is appropriate and effective.

3. The positioning and principles of using information technology in early education

Many scholars have reached a consensus on whether early childhood children should use information technology – what really matters is the content of education, not the form in which it is presented.

The National Association for the Education of Young Children (NAEYC) has published two position reports on the use of information technology in early education: the first is entitled "Technology and Children 3-8 Years Old", another NAEYC's 2012 report with the Fred Rogers Center, "Technology and Interactive Media as a Tool for Early 0-8 Years of Parenting Program." The two reports have positioned information technology as one of the "accessibility tools for early education" and provided advice and guidance on how early educators can use information technology appropriately and effectively. The most important use of information technology in early education should adhere to the three principles of "appropriate", "effective" and "fair".

First, "suitability" is the basic measure of applying information technology. NAEYC pointed out in the 1996 edition of the report that "information technology can only promote children's learning and development under the guidance of development suitability practices." In the 2012 edition report, it was stated: "In early education, decide whether to use technology and what Time-integrated technologies and interactive media must be guided by the development of suitability practices2."

In addition, the new report is increasingly focused on the effects of technology use, ensuring that the use of technology is effective. NAEYC's emphasis on the "intentional" use of technology by educators in the 2012 version of the position report demonstrates its pursuit of educational effectiveness. The report states: "The use of technology and the media should be effective, that is, proactively practicing, personally participating and having the right to grant, giving appropriate control over children, providing scaffolding for children, and supporting their learning and task realization2."

Third, both reports call for "fair" use of technology in early education to reduce the "digital divide" brought about by technology. NAEYC believes that educators should try to eliminate the differences in socioeconomic status, gender, learning ability and physical integrity when applying technology to early education, and strive to use the fairness of technology. The 1996 edition of the report stated that "early educators should give all children and their families equal access to computers." The 2012 edition of the report focuses more on children with special needs, emphasizing that "assisted technology should be Children with special needs offer equal access to technology2."

4. A new vision - information technology to support the professional development of early education teachers

According to Urie Bronfenbrenner (1917–2005), the evolution of human ecology, the growth of organisms is a process of adaptation to the changing environmental systems in which they operate. Children and their environment together constitute the ecosystem of their growth. We should also examine the relationship between information technology, preschool children and preschool education from an ecological perspective. The development of children under technical support comes not only from direct contact between children and technology, but from the support, collaboration and efforts of the entire ecosystem in which he works. Teachers, as one of the important elements in this ecosystem, play a key role in the development of children. The use of information technology to promote the professional development of teachers, and thus promote the development of preschool children and the improvement of the quality of preschool education may be a more effective way to further develop the informationization of preschool education.

4.1 The status quo of information technology support for the professional development of early education teachers

4.1.1 Information technology application in self-professional development of early education teachers

Information technology mainly supports the professional development of early education teachers

through the sharing of digital resources, supports the teaching practice research of teachers, and supports them to organize, refine and publish the research results. From all over the world, the digital resources that support the professional development of early education teachers are very rich. Among them, the resources supporting early education teachers to conduct self-learning and education and teaching research mainly include the following three categories: journal database, which mainly provides news, magazine literature and education-related resources; e-book database, which mainly provides full-text academic e-books. A professional website that includes informational websites provided by government organizations and professional organizations on early education policies, data, trends, disputes, hotspots, regulations, etc., as well as curriculum resource-based websites that provide direct teachers for classroom instruction.

4.1.2 Information Technology Application in Early Education Teacher Education and Training

Education, training, teaching and research and technical support are the main ways to promote the professional development of teachers at home and abroad. The main way in which information technology is applied to early education teacher education and training is to create an online learning platform that supports teacher autonomy and personalized learning. In China, many colleges and universities and provincial and municipal education authorities have also developed a number of teacher distance training platforms and regional teaching and research websites. In addition, in some specific early education teacher training programs, due to the small number of participants, based on cost considerations, off-the-shelf social software has also played an important supporting role, such as Wiki, Blog and so on. At present, distance education and training for early education teachers at home and abroad are striving to explore how to combine online learning with offline learning to create different online and offline combination training models. The role of information technology in the distance education and training of early education teachers is gradually shifting from "delivering training content" to creating an online community with "feeling" and "trust".

4.1.3 Information Technology Application in Professional Development Management of Early Education Teachers

In foreign countries, information technology mainly supports the management and professional development of early education teachers through the collection, statistics, analysis and application of data related to early education teachers. In recent years, in order to further enhance the professionalism of practitioners in the early education field, the United States strives to promote the construction of a high-quality, comprehensive Early Childhood Professional Development System (ECPD system), expecting all for the early stage. Childcare, professional preparation of early education teachers representing the interests of all children, and continued professional development provide systematic and effective support that ultimately promotes the quality of early education6. In China, in recent years, the Ministry of Education has organized and developed a national pre-school education information management system. The main purpose of the system construction is to timely, comprehensively and accurately grasp the information on the construction and management of kindergartens in various places, so as to provide a major project for the implementation of national preschool education. Reliable data support while monitoring the state of preschool education development7.

4.2 Prospects for information technology to support the professional development of early education teachers

Information technology has played an important supporting role in the professional development of early education teachers, and constitutes a new environment and new means for the professional development of early education teachers in the information age. While we are reviewing the status quo of information technology to support the professional development of early education teachers, we should look to the future and further develop the support potential of information technology in the professional development of early education teachers.

4.2.1 Pay attention to the resources construction of professional development teachers in early education

Whether it is teachers' independent study and research, or participation in education, training and teaching research, digital education resources (hereinafter referred to as resources) are important carriers for teachers to carry out professional development activities. Using network technology to realize resource construction and sharing is information technology support early education. The main way of professional development of teachers. The role and function of digital education resources in kindergartens not only provide assistance for early education teachers to design and implement teaching activities, but also provide support for teachers to reflect on teaching activities and communicate and cooperate with peers and parents. The construction and application of digital resources should help the professional growth of early education teachers, support teachers to further understand young children, improve the quality of curriculum implementation, strengthen reflection on the curriculum and enhance the connection between homes.

4.2.2 Emphasis on the role of data in supporting the professional development of early education teachers

In recent years, with the rapid development of information technology, how to use data to further support learners' learning has become a research hotspot in the field of education. The era of big data has further promoted data mining and analysis in the field of education, and data-based and empirical decisions are gaining more and more attention. In this context, learning analysis has become a typical application of data mining and analysis technology in the field of education. Whether at home or abroad, learning analysis has become another wave that leads the development and transformation of educational information. Early education teacher professional development activities supported by information technology will enable teachers to leave learning track information on various learning platforms. Collecting and analyzing these data can more clearly understand the learning behavior, learning attitude and learning of early education teachers. Interests and learning styles, anticipating trends in learning, and then providing personalized learning advice. Currently, there are so many data about teacher behavior in the early education teacher management system and online learning system. More and more data will be collected in the future. How to use this data to further support the professional development of early education teachers will be early One of the future research directions of education informatization.

4.2.3 Mobile learning can become a new way for information technology to support the early development of teachers' professional development

In recent years, a new learning model has emerged quietly and gradually appeared under the public's view. This learning mode is M-learning. Simply put, mobile learning is where learners use mobile devices (notebooks, cell phones, PADs, etc.) to learn anywhere, anytime. First, mobile learning allows early education teachers to learn anytime, anywhere. Second, mobile learning can enable early education teachers to learn individually. Professional development is a long-term process that requires a series of related and different stages. Each early education teacher faces different problems and confusions in different stages of professional development. The professional guidance and support required. The content and extent are naturally different. Mobile learning can meet the needs of early education teachers as "adult" "self-directed learning" and "solving practical problem-based learning."

Today, whether at home or abroad, information technology has penetrated into the various channels of professional development of early education teachers, providing a large amount of educational resources for early education teachers, and building a platform for dialogue between teachers, experts and peers, effectively supporting teachers. Self-learning, training, education, and teaching research. At the same time, we must also acknowledge that there is still insufficient support for information technology in the professional development of early education teachers, and further exploration of its potential is needed.

Acknowledgements

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