

Равентхиран Вивеканантхараса, доктор, лектор факультета педагогики,
Открытый университет Шри-Ланки, Демократическая Социалистическая
Республика Шри-Ланка

e-mail: dokumarx@mail.ru

ИСПОЛЬЗОВАНИЕ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ В ДОШКОЛЬНЫХ ОБРАЗОВАТЕЛЬНЫХ УЧРЕЖДЕНИЯХ: СИСТЕМАТИЧЕСКИЙ ОБЗОР

Аннотация. Дошкольное образование играет ключевую роль, прокладывая путь к образованию на протяжении всей жизни человека. Дошкольное образование является основной частью дошкольного воспитания. Места, где предоставляется дошкольное образование, известны как дошкольные образовательные учреждения, где условия для образования должны быть благоприятными. Обычно дошкольное образование предлагается в возрасте от 3 до 4 лет, но иногда оно отличается от разных стран. Люди проявляют больший интерес к предложению дошкольного образования, поскольку оно является основой знаний и навыков детей. В успехе дошкольных образовательных учреждений существуют различные факторы, влияющие на него, особенно на улучшение дошкольного образования через учреждения. Одним из основных факторов развития дошкольного образования и дошкольных учреждений является использование информационных технологий. В этой статье четко объясняется использование информационных технологий в дошкольных учреждениях для развития дошкольного образования. Концепция развития дошкольного образования с использованием информационных технологий предусматривает, каким образом ресурсы, такие, как объекты инфраструктуры, дошкольники, воспитатели и родители, используются для достижения целей дошкольного образования. Как доказано, что информационные технологии

являются основным фактором развития образования XXI века, так и развивается дошкольное образование с развитием дошкольных учреждений. В этой статье речь пойдет о том, как информационные технологии помогают развитию детей дошкольного возраста и педагогов дошкольных учреждений. Кроме того, как инфраструктурные объекты, пространства проектируются с использованием информационных технологий и, наконец, как учебные и учебные помещения создаются при поддержке информационных технологий для улучшения детей дошкольного возраста. В этом современном мире важно увеличить использование информационных технологий со всеми стратегиями. Эта статья дает четкое влияние использования информационных технологий в дошкольных образовательных учреждениях для разработки концепции дошкольного образования.

Ключевые слова: дошкольные образовательные учреждения, дошкольное образование, информационные технологии, дошкольное преподавание и обучение.

Raveenthiran Vivekanantharasa, Faculty of Education, The Open University of Sri Lanka, Sri Lanka

e-mail: dokumarx@mail.ru

THE USE OF INFORMATION TECHNOLOGY IN PRESCHOOL EDUCATIONAL SETTINGS: A SYSTEMATIC REVIEW

Abstract. Preschools education plays a pivotal role paving the way for lifelong education in human life. Preschool education is a main part of early childhood education. The places where preschool education is given are known as preschool educational institutions where the settings for education must be conducive. Normally, preschool education is offered between the age level of 3 and 4 years, but it sometimes differs from different countries. People take more interest in offering preschool education as it is the foundation of knowledge and skills of children. In the

success of preschool educational institutions there are different factors influencing it, especially on preschool education improvement through institutions. One of the main factors of the development of preschool education and preschool institutions is the use of information technology. This article clearly explains the use of information technology in preschool institutions for the development of preschool education. Under the concept of development of preschool education with the use of information technology covers how resources, such as infrastructure facilities, preschool children, preschool teachers, and parents are utilized to attain the aim of preschool education. As it is proved that information technology is the main factor in the development of 21st century education, it also develops preschool education with the development of preschool institutions. In this article it will discuss how information technology helps for the development of preschool children and preschool teachers. Moreover, how infrastructure facilities, spaces are designed with the use of information technology and finally, how teaching and learning facilities are made with the support of information technology for the betterment of preschool children. In this modern world, it is important to increase the use of information technology with all strategies. This article gives a clear impact of the use of information technology in preschool educational settings for the development of the concept preschool education.

Keywords: Preschool educational settings, preschool education, information technology, preschool teaching, and learning

Understanding the concept of preschool education

Early childhood is an important period of the growth and development of children that helps for the development of cognitive, psychomotor, and affective skills. In addition, education in early childhood is one main factor that decides all developments in children. The education given to children in early childhood is known by different names, such as play school education, kindergarten, Montessori education, and preschool education. Despite different names of early childhood education, it is commonly known as preschool education.

Preschool: Institutional educational establishment or formal learning space offering early childhood education to children before they begin compulsory education at primary school. For the purposes of this entry, preschool is used a term for children between 3 and 5 years of age and can be interchanged with other terms such as nursery school, pre-primary school, playschool, kindergarten, or Pre-K (Hassan Sattar and Sadaf Taimur, 2019). According to Burlacu and Florentina (2013), Preschool education comprising children aged 3 and 5 years old has certain features that facilitate the process of thinking among children. Through games, drawing and music children are taught things about the environment and about the society in which they live. Further the researchers explained that Preschool education has been considered as a tool for poverty eradication. Many theorists in this field consider that it is desirable for all children to go to preschool, but it is more necessary for disadvantaged children. Without preschool education there is very little possibility of achieving equality in education.

Preschool uses certain techniques designed to improve children's mental processes and skills with particular attention to conceptual and mental development, to improve language skills, to improve children's health, to help in their emotional and social development by encouraging self-confidence, self-esteem and dignity, spontaneity, and discipline (Hassan Sattar and Sadaf Taimur, 2019). Early childhood education and care is defined by the European Commission as “provision for children from birth through to compulsory and primary education that falls within a national regulatory framework, i.e. it has to comply with a set of rules, minimum standards and/or undergo accreditation procedures (Michel Vandenbroeck, et al., 2018)

Researchers on early education have also shown the importance of preschool education stating that children taught at an early age usually have improved social skills, fewer behavioral concerns, and better grades without special attention. Self-confidence gained by learning in a playful manner adds to the personality development of the child. A quality early childhood education provides children with cognitive, behavioral, and social skills they cannot learn at home. Therefore, to build

readiness for learning and immerse the child in inquiry-based learning, preschool education plays a pivotal role (Goonjan Kochar, 2024).

Importance of preschool education

Preschool education in early childhood is very important in the development of humans with various reasons. It helps for the holistic development of children. According to psychologists and their theories, it is emphasized that early education plays a vital role in the development of children. Yakup Balantekin (2016) stated that early childhood education plays a vital role especially in eliminating or minimizing the deficiencies resulting from socioeconomic structure of the family. In this respect, especially having or not having early childhood education experience has various impacts, from adaptation of the child to school to academic achievement and continuation of school. Moreover, the researcher cited that Research has shown that for a child to grow physically, socially, and emotionally healthy the environment needs to be free from stress and toxins. Researchers emphasize the importance of timing as follows: a) expecting children to acquire certain skills before they are ready causes stress for the child and damages brain development. b) age differences in a class create an unfair advantage especially for the older children in terms of the development of psychomotor and social skills.

Moreover, the importance of preschool education relates to the development of children in various ways. According to many studies, children who have attended preschool programs are ready for elementary school, with excellent phonetic, reading, and social skills, and with improved vocabularies than those who do not attend. Therefore, sending your child to a preschool is a good decision as it incredibly helps in the academic and social development of the child. This also provides a foundation for learning academically and socially. Kids are more observant and curious and learn things very fast. Teachers use creative and effective teaching methods and tools to keep the children engaged.

In addition to that, preschool helps a child develop socially and emotionally. It is where he/she learns how to compromise, be humble, and be respectful towards others. A kid will understand the sense of self-respect, play with other students, share

with others, explore, and build confidence, which is an excellent sign of child development. Kids in preschool are made independent. Additionally, how they eat food and use the restroom shows they can do such everyday things themselves. They learn small things such as setting food tables, keeping their belongings in the proper place, and so on.

Information technology in preschool educational settings

Computers have become an everyday tool in human life. They play an important role in each profession and they enable education. Information technologies attract children and today's generation is called "digital generation" or sometimes even "cyber kids". Children come across computers in their families which are equipped with mobile devices more and more. Children younger than eight years spend less time watching television and more time with smart phones and iPads (Vladimíra Sehnalová, 2014). In the success of preschool education information technology is an inevitable part in different ways. Preschool settings should accommodate different information technological strategies for the development of children. As cited by Lathifatul Fajriyah, Puji Fauziyah in 2018, ICT according to Elston (2007) ICT as the technology used to manage information and aid communication. While ICT in UNESCO (2003) ICT generally relates to the technologies that are used for accessing, gathering, manipulating, and presenting or communicating information.

There has been an argument in the use of information technology in early childhood education, but the recent circumstances like COVID-19 pandemic and some other incidents have made the importance of the use of information technology in education. According to Healey (1998), ICT is not suitable for early childhood under 7 years, because children need verbal interaction with other humans, besides computers, do not teach intersensory children who can reduce other developmental tasks.

According to Lathifatul Fajriyah, Puji Fauziyah (2018), Literacy is an important development for the future of children. Rogers (2011) argues that literacy can no longer be defined in reading and writing only but also includes computers and

digital literacy to prosper all layers of society better in the information age. In this era which is all digital requires children to be able to master science so that they need literacy skills to understand it. However, the use of technology, especially ICT in children, still has a continuous limit. Moreover, the researcher cited that a study by Van Scoter & Boss (2002) ICT can provide a rich contribution to children's literacy in four areas, namely speaking, listening, reading, and writing. Moreover, according to the researcher, there are seven general principles for the use of technology by young children that can be used by parents, namely: 1. Ensure educational goals, 2. Encourage collaboration, 3. Interact with other aspects of the curriculum, 4. Ensure the child is in control, 5. Choosing a transparent application, 6. Avoid applications that contain violence and stereotypes, and 7. Be aware of health and safety issues.

According to Nancy Zomer (2014), early experiences with digital technologies help young children develop the necessary technological skills and fluency that will be needed in their future. Further, the researcher cited that several researchers recommend that practitioners take a thoughtful approach to the use of technology by carefully considering the design of the technology to determine if it supports creativity, curiosity, and play, promotes interaction among children and provides an authentic learning experience. Therefore, this article analyzes the use of information technology in preschool educational settings based on the two main aspects, such as impact on learning and impact on engagement.

The first impact of preschool education in using information technology is impact on learning. Information technology helps for the development of learning in various ways. It is important that preschool is not a place to learn but rather where the growth and development of children takes place. Though preschool settings give prominence to the growth and development of children, there are certain learning related skills to be developed, such as literacy, numeracy, and social interactions. First, under literacy skills development, children can develop the skills of phonological awareness, vocabulary, reading comprehension, and general literacy. To develop these literacy skills the role of information technology is very important.

Young children are eager and ready to learn. Current research emphasizes the importance of teaching young children the fundamental skills that lead to literacy. While our focus is on the development of early literacy skills that are tied to language development, best practice is to teach young children in such a way that all the important early childhood developmental domains, language, concepts, social, emotional, and motor skills are integrated and linked with children's background and prior knowledge. Because literacy competence opens the doors for all other academic learning, preschool and kindergarten children should receive instruction in emergent literacy skills to help ensure later success in school (Ann Casey, et al., 2004).

As cited by Burnett, Cathy in 2010, information technology in developing literacy skills influences the ways of teaching and practicing the skills successfully. Labbo and Reinking's review of research into computers and literacy in early childhood from the 1960s until 2002 (Labbo and Rienking, 2003) identified five broad categories of research, which relate variously to the use of technology to support existing literacy provision and to explore digital literacy. These included the use of computers to promote writing composition; individualized drill and practice in phonics; individualized reading; social interaction and collaboration; and engagement with digital texts. Moreover, according to Burnett, Cathy (2010), the following analysis organizes studies into three categories, which reflect the different ways in which researchers seemed to be characterizing the role of technology within literacy:

Technology as deliverer of literacy

Technology as site for interaction around texts

Technology as medium for meaning making.

The role of information technology as a delivery of literacy is very important and that helps to effective way of delivery of literacy skills. The second main aspect is information technology as a site for interaction around texts. The second aspect of information technology in preschool education is as site for interaction around texts. The third aspect of the use of information technology in preschool education is technology as medium for meaning making. The Internet brings with it assumptions about the nature and location of knowledge which perhaps do not sit well alongside

notions of fixed knowledge associated with traditional models of literacy provision. It also mediates multiple texts which all bring their own localized meanings. This raises questions about what happens as bounded classrooms are connected to diverse and fluid networked spaces with new possibilities for presenting, exchanging, and making meaning.

The second main impact of information technology in preschool education is the engagement of children. How information technology helps for the engagement of preschool children is an important idea. Špela Golubović, et al. (2022) stated that fully inclusive and qualitative programs in early childhood education should meet children's needs and provide all children with opportunities to actively participate in classroom activities and routines. The two subdomains of participation, involvement, and engagement are regarded as key priority outcomes of inclusive practices in early childhood education. As stated in the literature, involvement refers to an internal state of interest towards an activity itself, while engagement refers to the specific behavior, emotions, and thoughts. The researchers further stated that with regard to early childhood education, engagement is expressed through the time the child spends engaged in activities, as well as the level of interaction with the social and physical environments and timeframe in which they are achieved in a developmentally and contextually appropriate manner. Thus, children's engagement during early childhood education mainly refers to the manipulation of objects and materials, involvement in games with peers or adults, and participation in the activities of everyday life.

The impact of digital technology on children and adolescents' social interactions has been significant. With the proliferation of electronic devices and media, many children now grow up in a world where technology is ubiquitous. The spread of harmful content, social isolation, and a decreased ability to form meaningful relationships, and social isolation can also be negative consequences of digital technology. Technology can enhance learning and provide meaningful connections outside of one's immediate circle. We describe social media, video games, and online relationships as examples of digital technology's effects on children's social interaction (Teelia L Lowery, 2023). Moreover, information

technology in preschool settings is very important for children with special needs for their learning impact and social interaction. Different technological devices are found to improve the status of special needs children with preschool education. Though information technology in preschool educational settings has many positive impacts, there is a negative side with negative impacts. As educators we must use information technology in preschool educational settings for positive purposes.

Conclusion

In a nutshell, information technology in preschool educational settings is very important and making the ways for the future development of children successfully. As discussed, there are two main aspects of impacts of information technology in education, such as impacts on learning and impacts on engagement of children. The main responsibility of the government of the countries is improving the skills of preschool teachers in line with the successful attainment of benefits through information technology in preschool educational settings.

References

1. Burlacu, Florentina. (2013). The importance of pre-school education in child development Euromentor Journal; Bucharest Vol. 4, Iss. 2, (Jun 2013): 153-165.
2. Burnett, Cathy. (2010). Technology and literacy in early childhood educational settings: a review of research. Journal of early childhood literacy, 10 (3), 247-270
3. Casey, A. (2004). Early Literacy Skills Development NASP Communiqué, Vol. 32, № 6.
4. Golubović Š, Đorđević M, Ilić S, Nikolašević Ž. Engagement of Preschool-Aged Children in Daily Routines. Int J Environ Res Public Health. 2022 Nov 9;19(22):14741. Doi: 10.3390/ijerph192214741. PMID: 36429460; PMCID: PMC9690864.
5. Hartal, H., & Balantekin Y. (2016). The Importance of Early Childhood Education and School Starting Age in the Reading-Writing Learning Process <http://dx.doi.org/10.17275/per.16.05.3.1> Vol. 3(1), pp. 79-101, April, 2016

6. Kochar, G. (2024). What Is The Importance Of Preschool Education | JBCN Education <https://www.jbcnschool.edu.in/blog/importance-of-preschool-education/>
7. Sattar, H., Taimur S. (2019). Preschool Education: A Foundation for Lifelong Well-Being 10.1007/978-3-319-69902-8_66-1
8. Sehnalova, Vladimira. (2014). Using ict in education of preschool children. Journal of Technology and Information Education. 6. 4-18. 10.5507/jtie.2014.001.
9. Vandenbroeck, M., Lenaerts, K., & Beblavý, M. (2018). Benefits of Early Childhood Education and Care and the conditions for obtaining them https://eenee.eu/wp-content/uploads/2021/05/EENEE_AR32.pdf
10. Zomer, N. (2014). Technology Use in Early Childhood Education: A Review of Literature https://ir.library.ontariotechu.ca/bitstream/handle/10155/511/Zomer_R_Nancy.pdf?seq