Analysis of the Current Situation and Improvement Strategies of Digital Literacy among Preschool Children in China

Yuehong Sun [1,*]

[1] The First Kindergarten of Fengtai District, Beijing, China

*Corresponding author: 864186173@qq.com

Abstract: At present, in the process of comprehensive digital transformation in China, preschool children are exposed to and using digital media such as computers, mobile phones, and iPads, showing a trend of low age and excessive use. Although digital media enriches the learning methods of preschool children and accelerates their process of understanding and exploring the world, the uneven quality of digital content and the insufficient understanding and guidance of digital literacy for preschool children by the government, society, kindergartens, and parents, The digital survival of preschool children in a critical period of physical and mental development and intellectual development is at high risk and low literacy. In order to better enhance the digital literacy of preschool children and avoid the invasion of harmful digital media, this article analyzes the current situation of digital literacy of preschool children, and combines the physical and mental health characteristics of preschool children to scientifically promote the development of digital literacy and abilities of preschool children from three aspects: government, kindergarten, and family, striving to lay a solid foundation for the healthy growth and development of preschool children.

Keywords: Preschool children; Digital literacy; Home school co education

Introduction:

With the vigorous development of information technologies such as 5G, cloud computing, big data, virtual reality, augmented reality, and artificial intelligence, the whole society has fully entered the era of all media surrounded by digitization. This has also led to an increasing number of digital media devices used for entertainment and learning by preschool children, and a richer variety of personalized app products. In addition, technological progress has also brought users a variety of diverse, fast-paced, and stimulating experiences, so that these stimuli can be accessed and accessed anytime, anywhere through mobile terminals [AKYOL N A, Turanoğlu R, Parpucu N，2023；Bandara N A, 2023; Xi Wang, 2021]. The widespread popularity and convenience of new technologies and electronic media have enriched and enriched the lives of preschool children, expanded their horizons, innovated their learning methods, promoted socialist core values, and strengthened interpersonal communication, which have had a positive impact on their reading, consumption, clothing, language, thinking, and other aspects. However, there are also some preschool children who are taken care of by their grandparents or by young parents with dual employment. They are either busy with household chores or work, and may use digital devices such as mobile phones, televisions, and iPads as parenting assistants and "electronic nannies", resulting in some children being exposed to digital media too early and excessively without effective guidance, leading to poor learning, which has also led domestic and foreign governments and organizations to pay attention to children's digital literacy. In 2017, UNICEF reported on the state of the world's children in 2017: Children in the digital age, and in 2019, Wavemaker released a white paper titled "Chinese Children in the Digital Age.". In 2022, Dong Lu from Liaoning Normal University conducted a survey on 313 children aged 3-6 in two public kindergartens in Dalian, and found that the use of high-quality and low-quality electronic media had a predictive effect on the learning quality of young children [Lu Dong, 2020]; In 2023, Jiang Yunxiao [Yunxiao Jiang, Hongyu Gao, Gaoyang Song , 2023] and others from Capital Normal University conducted a study on 544 parents of young children in Beijing, and found that the level of exposure to electronic products among young children needs to be improved; In 2023, Ma Yuhan [Yuhan Su, Lina Su, Xingyu Zhang, 2023] and others from Fenghuang Street Central Kindergarten in Fangzi District, Weifang City conducted a study. The joint efforts of the kindergarten and parents to create a good living and learning environment for young children can effectively guide them to use digital terminals such as mobile phones correctly; In 2023, He Qian et al. discovered that electronic products pose a physical health crisis, interpersonal

communication and emotional challenges, and learning detachment for preschool children, and proposed coping strategies [Qian He, Boqiong Tian, 2023].

Starting from the question of how to effectively guide and cultivate good digital literacy in preschool children, this article analyzes the positive impact of digital media on expanding children's horizons, as well as the potential health risks caused by premature and excessive use of digital media terminals on preschool children, such as myopia and obesity. It also proposes promotion strategies for cultivating good digital literacy from the perspectives of the government, kindergartens, and parents.

1. The Opportunities of Electronic Media for Digital Literacy of Preschool Children

The widespread popularity and convenience of new technologies and electronic media have enriched and enriched the lives of preschool children, expanded their horizons, innovated their learning methods, promoted socialist core values, and strengthened interpersonal communication, which have had a positive impact on their reading, consumption, clothing, language, thinking, and other aspects.

1). Electronic media can help preschool children achieve "early puberty"

The ubiquitous digital media also allows preschool children to be exposed to and start reading earlier. At the beginning of 2023, the "Research Report on the Development of Chinese Children's Reading" released by the People's Data Research Institute, the "iEnglish 2022 Digital Reading Report" released by the iEnglish Future Education Research Institute, and the "20th National Reading Survey" released by the China Press and Publication Research Institute showed that the reading rate of minors under the age of 18 accounted for more than 80%, of which three-quarters of children began to engage in reading at the enlightenment stage. Preschool children have excellent imitation ability. At the same time, new digital media such as Tiktok and Kwai have further expanded their learning and imitation channels. Albert Bandura, a famous contemporary American psychologist, introduced in his "model demonstration effect" in his social learning theory that preschool children can learn through direct experience and indirect experience [Albert Bandura, 1977]. The emergence of new digital media such as Tiktok, volcano and Kwai has also made preschool children's life and learning colorful. Neil Postman, a renowned media culture researcher and critic in the United States, pointed out in his book "The Disappearance of Childhood" that "maintaining

childhood consciousness depends on the principles of adult information management and providing children with an orderly learning process" [Neil tman,1982]. However, for this generation of preschool children who have been immersed in digital terminals and the Internet since birth, they understand more and earlier, manifested in the breadth and breadth of consumption, clothing, language, thinking, and cognition, and the "principles of adult information management" are gradually being broken.

2). Electronic media enhances learning and enhances character

The arrival of digital media enables red themed party building education to enter schools earlier, allowing children to feel the warmth brought by the Party earlier, understand the superiority of socialism, cultivate patriotism, and establish a worldview, outlook on life, and values to strive for. Health public welfare programs can help preschool children recognize the dangers of smoking, alcohol, and drugs earlier; Traffic public welfare programs can help preschool children recognize traffic lights and follow road rules from an early age, which has a positive impact on cultivating preschool children's rule compliance, civilized etiquette, and social ethics education.

With effective guidance from parents, children can utilize digital media for earlier language and subject development. With the help of digital media, children can learn English through children's animations and electronic picture books, and further use some apps to facilitate and interesting face-to-face communication and practice with foreigners. You can also learn ancient poetry and subject related online courses through animations on digital media. At the same time, under the guidance of parents, children can also play some puzzle games, such as "cutting fruits", "jumping notes", and "super Mary", which can effectively stimulate their enthusiasm for exercise, stimulate their creativity, and improve their hand eye coordination. This can effectively exercise children's abilities in fine motor skills, rapid reading, team writing, and decision-making cooperation.

2. The Challenge of Electronic Media to Digital Literacy of Preschool Children

American computer scientist Nicholas Negroponte mentioned in his book "Digital Survival" that "every gift of technology or science has its dark side". Preschool children have weak awareness of digital self-management, and their single and daily cumulative digital screen exposure time exceeds the health standards recommended by the education department to

varying degrees. Through questionnaire surveys, it was found that nearly 70% of preschool children have experienced crying and losing their temper due to unsatisfied needs such as watching TV or playing with mobile phones and short videos. Nearly 30% of preschool children have also experienced "secretly using digital media such as mobile phones and iPads", which has led to preschool children becoming "confined" and having insufficient outdoor activities, further exacerbating health risks such as myopia and obesity.

Excessive and premature exposure to and use of digital terminal media such as computers, mobile phones, and iPads can also lead to addiction and excessive dependence on preschool children, wasting a lot of energy and time, which may lead to negative effects such as difficulty concentrating on learning and work, low academic motivation, and even headaches, mental fatigue, memory decline, and sleep disorders.

3. Strategies for Promoting the Good Development of Digital Literacy in Preschool Children

To establish a good digital literacy cultivation for preschool children, it requires the joint efforts of the government, kindergartens, teachers, parents, and other parties, making promoting the digital literacy of preschool children a top priority and incorporating it into the overall planning of the government and education authorities.

1). Strategies of the government and education authorities to promote digital literacy among preschool children

Firstly, the government and education authorities should elevate preschool education to the same level of importance as other stages of education, and accelerate the formulation of policies and regulations that are in line with the improvement of digital literacy for preschool children in China. This will help promote the informatization status of preschool education, safeguard children's right to use digital technology to obtain information, and establish a safe and good information environment for children. At the same time, due to national policies and legal guidance, parents can also increase their attention to the digital literacy of preschool children, which is conducive to creating a digital literacy environment for all.

Secondly, the Cyberspace Administration, public security, and education authorities should strengthen the screening and filtering of information content published on the Internet to avoid negative guidance on the behavior and values of preschool children. For example, the

Cyberspace Administration can establish ethical standards for data and privacy industries, as well as other codes of conduct aimed at safeguarding the rights and interests of online children and promoting their online protection, to prevent criminals from using their networks and services to collect and carry out other types of violations against children. Market regulatory agencies such as industry and commerce should strengthen effective supervision and urge producers and operators of various early education and early childhood education products to fulfill their social responsibilities. They should not only produce and sell electronic products that are detrimental to the physical and mental health of preschool children for profit.

Once again, streets and communities should take advantage of direct contact and familiarity with families to regularly carry out rich and colorful parent-child scenario games and other activities. This can invisibly encourage parents to spend more time with their children, and also enable children to interact with more peers of the same age, play and play together, thereby reducing their dependence on digital media terminals such as computers, phones, and iPads, and creating a good atmosphere for healthy interaction with them.

2). Strategies for Promoting Digital Literacy of Preschool Children in Kindergartens

Firstly, kindergartens should standardize and cultivate the digital literacy of preschool teachers who directly interact with preschool children, so that they have good knowledge and experience in digital media applications and can actively think critically when selecting digital content. Secondly, kindergartens should focus on real-life educational scenarios, using games, courses, and activities to help children scientifically understand digital media terminals such as mobile phones and iPads, so that preschool children can return to nature and their bodies, directly perceive, personally experience, and strengthen their physical participation, practical operation, imagination, and creativity in the process of activities in time and space. When using digital media, preschool teachers should provide effective guidance to preschool children and maintain high-quality interaction. Once again, through methods such as parent teacher meetings, parent salons, and parent case counseling and guidance, parents are guided to have a correct understanding of the relationship between preschool children and digital terminal media such as computers, mobile phones, and iPads. Following the principle of "controllable but not scary, and not letting go", based on the scientific principles of children's development and development, parents and children are helped to solve problems together.

3). Strategies for Parents to Promote Digital Literacy in Preschool Children

Firstly, parents should have a correct understanding of the impact of digital media on the digital literacy of preschool children, combining "controlled use" with "reasonable utilization". They should not simply treat electronic media as "electronic nannies", but cultivate good digital literacy of preschool children through guidance. They should avoid being left unattended and not resort to rough methods. Parents should first exercise self-discipline, establish a good demonstration effect, and regularly communicate and negotiate with preschool children, establish "rules and regulations" with their children, so that they can learn good habits of compliance and self-discipline. In addition, content such as cartoons, games, and short videos on mobile devices such as mobile phones, televisions, and iPads can serve as an assistant for parents to screen content that is beneficial to their children, allowing preschool children to subtly influence their attitudes and ways of handling problems through the use of electronic media, and helping them establish correct values. Secondly, parents should often lead preschool children to play games outdoors, which can strengthen their interaction with peers, reduce the frequency and frequency of electronic product use, and ensure the healthy and healthy growth of young children.

Conclusion:

The development of electronic media and the internet is an inevitable trend in economic and social development, becoming an essential tool in daily life. Electronic media has had a positive impact on expanding children's horizons, promoting socialist core values, and strengthening interpersonal communication, but the negative impact of electronic media cannot be ignored. According to the survey results of the National Health Commission, the myopia rate among children and adolescents in China reached 53.6% in 2018, and the incidence of myopia is severe. According to monitoring, 67% of students engage in outdoor activities for less than 2 hours per day. Children's daily outdoor activity time is entirely occupied by learning and electronic devices. The prolonged and unscientific use of electronic devices has become an important cause of myopia. Meanwhile, the reduction in outdoor activity time leads to a decrease in children's physical activity, resulting in an increase in their obesity rate and a significant impact on their physical health. Therefore, it is necessary to fully understand the various impacts of electronic media on children's socialization process, guide children to use electronic media correctly, and prevent children from overly relying on

electronic media.

Author Contributions

Yuehong Sun: Conceptualization, methodology, resources, writing—original draft preparation, writing—review and editing. All authors have read and agreed to the published version of the manuscript.

References:

[1] AKYOL N A, Turanoğlu R, Parpucu N.(2023). Digital Technology in Preschool Education: A Systematic Review. International Journal of Educational Research Review,

8(3): 638-658. DOI: 10.24331/ijere.1260176

[2] Bandara N A, Vallani T, Gamage R, et al. (2023). A Multi-Faceted Approach to Communicate the Risks Associated with E-Cigarette Use to Youth. Youth, 3(1): 437-446. DOI: 10.3390/youth3010030

[3] Xi Wang, Limin Zhang, Jinghui Zhao (2021). Effects of Electronic Devices Use on Preschool Children's Sleep from the Perspective of Family Media Ecology：Latent Class Analysis Based on 26381 Samples in China. Studies in Preschool Education ,12 (324) doi:10.13861/j.cnki.sece.2021.12.004.

[4] Lu Dong (2020). Study on the current status of the quality of electronic media use and its impact on learning quality in children aged 3-6. Liaoning Normal University, China. DOI: 10.27212/d.cnki.glnsu.2022.001178

[5] Yunxiao Jiang, Hongyu Gao, Gaoyang Song (2023). Family Education in the Digital Era: The Impact of Parental Media Interventions on Children's Exposure to Electronic Products. The Family Education of China, 03: 64-71.

[6] Yuhan Su, Lina Su, Xingyu Zhang (2023). Home and school work together to guide young children to become "good" friends with electronic products[J] Technology & Management, 06: 262-264.

[7] Qian He, Boqiong Tian (2023). Challenges and responses to the development of preschool children in the digital age[J]. Journal of Heilongjiang Institute of Teacher Development, 42(09): 125-128.

[8] Albert Bandura (1977). Social Learning Theory.

[9] Neil tman (1982). The Disappearance of Childhood.