Application of Digital Cameras Toward Children Development Domain

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ABSTRACT

This research was carried out to create awaereness on the benefits of camera applications to young children development like social, language, and cognitive development. The initiative to introduce camera as teaching tool in preschool and home was one of fantastic ideas in effort of making children's learning more interactive and improved. Digital cameras provide children with a medium to express their creativity, capture and share moments, and engage in storytelling. This studies proved that the digital camera seccussfuly encouraged children to observe and appreciate the world around them, enhancing their visual literacy and observation skills. Furthermore, digital cameras foster social interactions and collaboration as children work together on photography projects, share their creations, and connect with others who share their interests.

Contribution/Originality: Study was found that digital cameras offers invaluable holistic development of children. Digital cameras can stimulate children's talent and creativity skills through photography, foster observation and artistic expression, also improve visual literacy skills and are important as a technological tool in the holistic development of children in the future.

1. Introduction

If previously education, upbringing and moral values among children were mostly applied by parents, teachers at school and the local community. However, life today is different. Society that also includes adults, teenagers including children has now been

influenced by modern technology, the internet and the development of social media and further formed a revolution that changes life. In this modern age as well, all forms of information, education and entertainment can be found at the fingertips. This makes technology very important and society's dependence on technology is also very high. Children are also no exception where a lot of time is spent just browsing social media, playing games and so on.

Unlike 20 years ago, most children spend their time happily with friends. Cycling, bathing in the river, having fun playing marbles, playing *teng-teng*, playing flip flops and not missing out on the favorite game of many, what time is the tiger grandfather. It is the natural nature of children created with the desire to play, explore, experiment, observe and indirectly these activities have stimulated their social and emotional development (Loebach & Cox, 2020).

The increase in the amount of time children is online is also very worrying. Based on some expert recommendations such as the American Academy of Pediatrics (AAP) in 2013, children under the age of six are recommended to limit the use of gadgets to less than two hours a day (Gupta et. al., 2022). However, in a study in this country in 2020, many preschool children between the ages of five and six were found to be using gadgets more than the recommended period. The use of excessive time has a negative impact on children's self-development such as vision problems, especially farsightedness (Ismawi et al., 2022).

Child-friendly digital camera content should be understood as programs, content and software suitable for that group by providing good effects and helping positive development in both physical, cognitive, socioemotional and psychospiritual aspects. In addition, the digital application in children learning bring benefits such as language skills, Integrated testing, relationship which is the main advantage of a child having a smartphone is connectivity. According to Muhammad et al. (2021), parents can communicate with their children anytime and anywhere. They can also use smartphones to track their child's location and future preparation. We all hate to admit this, but technology is advancing which allowing your child to use a smartphone or device will indeed prepare them for the future in school and future jobs.

Therefore, digital content in the form of video is more popular and is available in either original audio-visual or animated form. For children, digital content and technology play a big role in life because they grow up in an era of more advanced information and communication technology. The world is increasingly turning to dependence on digital technology and life will now continue to be driven by digital technology platforms.

1.1. Problem Background

Currently, the use of cameras among children is gaining momentum. Children have been exposed to the camera as young as in toddlerhood where they can modulate the camera and enrich their surroundings through the lens of camera by seeing different perspectives of defining the world. A few years ago, digital cameras were expensive and categorized as exclusive gadgets. As the world is moving forward with the revolution of technology, the price of technological gadgets is crashing down, helping most people able to afford to have at least one camera at home. Moreover, since the application of camera can be found almost everywhere such as in mobile phones, ipad, notebook, computer, tablet, children can easily get into touch of camera.

In addition, spending too much time in cyberspace also affects children's social skills and emotional management due to lack of exposure to physical social activities. The next concern is related to digital content software that if it contains more negative elements such as violence, pornography, falsehoods and hate crimes, it is certain that children will grow up with deviant lifestyles. Regarding the issue of child-friendly digital content, there are several things that should be given due attention by all parties, especially parents. There is digital content software that can increase the risk of addiction to children. Addiction to the internet, gadgets and online games has been found to be increasing until it needs to be controlled so as not to impoverish and affect health and social relationships.

According to Shatri (2020), Gjelaj et al. (2020) and Bay (2022) many past studies have stated that among the disadvantages of common digital use are such as:
   a. Physical activity. Smartphones and tablets encourage children to be inactive. This is a major concern for parents. This will affect creative play, no face-to-face social interaction, and will result in no physical effort! Why not try this fun activity to encourage your kids to put away their devices.
   b. Online security risks. Cyber security is a big concern for many parents. Children who use smartphones are at high risk, especially if they are allowed to use social media applications.
   c. Stimulation. It is important to enforce the digital rule 30 minutes before bedtime, because using devices like this will activate our brain. This will cause our children to stay awake and not be able to sleep in time to go to school the next day.
   d. Addiction. Too much time spent online can make children dependent on technology. Sometimes this can lead to addiction. The time set for looking at the phone screen must be set by parents to ensure that children do not become too dependent on technological devices.

More worryingly, a study by researchers from McGill University, Canada on smartphone use involving 34,000 participants from 24 countries between 2014 and 2020, found that Malaysia ranked third in the list of smartphone addiction (Khan & Khan, 2022). The basic thing to understand is to give priority to aspects of benefit and avoid harm in enjoying digital content and browsing the internet. But today, children grow up surrounded by modern technology. Most of childhood time is spent facing smartphones, laptops and the like. Technological progress in the latest innovation has produced various media equipment such as television, internet, computer, and smart phone which are all sophisticated and indirectly make it an important neccesity in the life of society. So much so that small children are also more interested in gadgets than in physical activities. The second factor is lack of time with family (Janius et al., 2023b).

This increases the possibility of children exploring more using a variety of tools in learning and playing in a fun way instead of traditional learning. According to Janius et al. (2023c) and Janius (2023d), both ways of learning combining traditional, and technology can ultimately speed up children learning if they are given opportunity to optimumly experiencing their potential by using different techniques. Instead of using camera at home, schools in Malaysia especially secondary schools start to implement the uses of technology like camera. The situation has become an eye-opener for other professionals related to education.

Recently, there's been an increasing number of kindergartens, especially in the city making initiatives upgrading their teaching tool by using camera (Algarni & Aljohani, 2021). As the initiative still considered as a 'new hit' and still not popularized throughout Malaysia, kindergarten teachers are still measuring the effectiveness of using camera in classroom. Educating parents and teachers is essential in proving that a camera can be a good educational tool for children.

Children love to learn with a camera. Even though they are still young, with guidance from teachers following developmentally appropriate practice, children can engage in the activities, as they become more attractive and interesting (Janius et al., 2018). Reports found out that there were significantly many studies or research has been done on computer related to children but only a limited research base points to the benefits or deficits of using camera among young children. Thus, the purpose of this research was to investigate whether the digital camera application brings benefits to social, language, and cognitive development of young children or commonly called domain of development of children.

The literature on applying digital cameras to children indicated that it could help to develop children's social domain. Camera can become such an interesting educational medium for children to interact with each other. Using camera, children can learn about different levels of people who come from a variety of skin colors, backgrounds, appearance, hair colors, and other characteristics. While the application of a digital camera can be beneficial for children's social development, it is essential to ensure proper supervision and guidance. Adults should provide children with appropriate guidelines on photo-taking, sharing, and online safety. Additionally, encouraging face-to-face interactions and balancing screen time with other social activities is crucial to maintaining a well-rounded social development for children.

As digital cameras open the opportunity for children to communicate and relate to each other, children can practice and enhance their language. They can find many intriguing topics to talk about and share with their friends from photos. There's a saying portrayed that a picture worth a thousand words, is true indeed. Digital Camera acts as an open-ended tool in children learning can encourage children to explore more possibilities and trigger creativity through exploring imagination. They gain different ideas to propose new activities to learn and play using a camera. Children always look forward to different interesting changes in their play and learning. With support and guidance from adults like parents and teachers helping children integrating camera into their play can be helpful to the children.

In addition, most of past research suggests that cameras should become a tool for children to learn as digital imagery is one of the exciting technological applications and easily acquired by people. The ease and applicability of digital imagery in early childhood education makes it a desirable tool. Lately, research on the use of cameras in children's learning prove that camera facilitate children's development of cognitive. Children treat a camera as a set of binoculars they use to observe almost anything. They use photos to learn science, discuss and do problem solving with situations.

1.2. Research Objectives

This research has successfully identified a few objectives such as;
    i.   To identify camera application bring benefits to young children in social

> development.
>> ii. To identify camera application bring benefits to young children in language development.
>> iii. To identify camera application bring benefits to young children in cognitive development.

1.3. Importance of Research

The findings of this research hopefully will create awareness among parents and teachers to support the integration of cameras in children learning as young while they are in preschool. The findings are also hopefully able to give encouragement for parents and teachers to use cameras with children, not only for entertainment but relates to any education matters. Parents and teachers are also encouraged to learn more on tips and tricks handling cameras with children and benefit it as much as possible.

This research is also to give exposure to parents and teachers on the benefits side of camera for young children. Many parents and teachers still have not realized that cameras can help them to simplify their task of educating children. For instance, photo labeling at home and school helps children to understand spaces in the environment. Adults do not need to remind children every day about the rule of spaces like eating is only allowed in the dining room.

In addition, the findings also can help parents and teachers to understand the importance of upgrading teaching tools, especially toward the new young generation which they are gradually growing up with technology. Since it is totally hard to separate technology from the generation, it is not a good idea to leave the children behind from reaping the benefits of learning with cameras.

2. Literature Review

It is important to note that a literature review is not merely a descriptive summary of existing research. Instead, it should demonstrate the researcher's critical thinking and ability to synthesize information from various sources to support their own research goals.

2.1. Application of Digital Cameras on Children Development

In today's rapidly evolving digital age, children are growing up in a world vastly different from the one their parents experienced. Digital technology has become an integral part of their lives, shaping their learning, communication, and entertainment. While there are undeniable benefits to this digital revolution, it is essential to examine both the advantages and challenges it presents. This essay explores the impact of digital technology on children, highlighting its potential for education and growth, as well as the importance of responsible guidance and balance in their digital experiences.

The digital world holds immense potential for children's education, communication, and creative expression. Embracing digital technology can empower the next generation with knowledge, skills, and opportunities that were unimaginable before. However, responsible guidance, careful monitoring, and maintaining a healthy balance between digital and offline activities are crucial to safeguarding their well-being (Hassan et al., 2018). By fostering digital literacy and promoting responsible digital citizenship, we can

ensure that children thrive in the digital age while maintaining their well-rounded development as individuals. Let us nurture their digital experiences to create a future generation that can harness the power of technology for the greater good.

It's hard to imagine a child who wouldn't want to have their own camera. However, not all parents know how to choose it correctly. And it's not about the price but about the ignorance of the main selection criteria. Children's introduction to photography begins at different ages. Someone becomes interested in this later, others show interest in photography as early as 3-4 years old. At the same time, buying a plastic toy instead of a real camera can cause a child to lose interest. According to Bird (2019), Children's cameras contribute to the formation of the surrounding world, its reality.

There has been much research and debate among educators, policy makers, child experts and parents about the pros and cons of technology over the years (Gjelaj et al., 2020; Moursad et al., 2023). Here are some of them:

a. Make long-distance communication a reality. children can talk to friends and family far away.
b. Teaching cause and effect. spark your child's curiosity and encourage him to explore even from home. Pressing the keys and using the mouse helps in improving your child's motor skills by improving their eye and hand coordination. Studies conducted by independent researchers have found that the use of technology can support learning at home in the home.
c. Operative Learning. Parents can teach their children how to control and use technology; and this is an opportunity for parents to encourage children to give feedback using their own input. Expanding knowledge and understanding about the world: children can learn more about society, places and nature.
d. Willingness to learn. promotes focus and persistence, helps them to build self-confidence and self-worth and improves their efficiency in using technology.
e. The role of technology in everyday life. With the observation of parents, your child will learn how technology can help in everyday things such as researching destinations to visit, ordering goods, sending texts, communicating with people far away and others.

While the disadvantages of using cameras and technology are as follows;

a. In 2010, the American Academy of Pediatrics (AAP) warned that technology could impact the development of cognitive and social skills in preschool children. Toys for learning will affect educational potential because most interactive toys have been created based on common educational tasks. In the beginning, this toy will provide motivation to learn but young children will get bored and stop learning if they do not master the operation aspects of clicking, scrolling or pressing actions.
b. Operational problems can be solved by using a tablet computer, but the excessive use of a tablet computer will not encourage innovative learning because some of the uploaded applications are simply a copy of the original, for example electronic books.
c. There is no stimulation of conversation between adults and children. Technological interactivity cannot in any way replace human interaction because the latest technology cannot replace the human element in the interaction between parents and children. Increased aggressive responses resulting from playing violent video games.
d. Potential to disrupt sleep. children need at least 12 hours of sleep each day for

them to grow up healthy.
   e. Leads to technology addiction. The development of technology in the digital era has made the world of photography, which used to use film media to take pictures, transformed into a practical digital media. This makes it possible to take photos and delete photos at will when the photos fail. Also, it can print the results of the picture easily.

Digital cameras have become a weapon for professional photographers as well as beginner photographers because the world of photography has become a fun activity (Wojciechowski & Shelton, 2022). This makes many camera manufacturers continue to improve the quality of their products, especially digital cameras whose fans are increasing. However, this does not mean that film cameras are starting to be abandoned, because there are still many fans. The following are the types of digital cameras and their functions that are often used both for everyday needs and professional needs (Sun & Zhang, 2019; Fan et al., 2021; Tabatabaian et al., 2021).
   a. Compact camera. Also known as a pocket camera or point-and-shoot. This camera generally has a simple design and is easy to use. They are suitable for everyday use and beginners in photography. It usually has a fixed lens, limited optical zoom, and limited controls.
   b. Mirrorless cameras. Mirrorless cameras use a mirrorless system that is different from DSLR cameras. They are lighter and smaller, but still provide high image quality. Mirrorless cameras allow users to change lenses and have advanced features such as 4K video recording capabilities.
   c. DSLR Camera. DSLR stands for Digital Single Lens Reflex. This camera uses mirrors and prisms to reflect light to the viewfinder so that the user can see the picture to be taken. DSLRs generally have excellent image quality, advanced features, and flexibility in using different lenses.
   d. Full-frame cameras. Full-frame cameras use sensors that are the same size as traditional 35mm film format. This sensor offers excellent image quality and high performance in low light conditions. Full format cameras are often used by professional photographers and serious hobbyists.
   e. Action cameras. Action cameras are designed specifically for active and moving activities, such as extreme sports or outdoor activities. They are usually resistant to shock, water, and dust. Action cameras are also usually equipped with 4K video recording features and fast photo taking capabilities.
   f. Bridge camera. A bridge camera is a camera with a design like a DSLR, but with a non-replaceable lens. They offer advanced features and a wide zoom range. Bridge cameras are often a good choice for users who want to take good quality photos without having to carry a lot of extra lenses.

According to the American Academy of Pediatrics (AAP) it is recommended that children under the age of 2 should not be exposed to any form of activity on the screen (Lammers et al., 2022). Children over 2 years of age should be limited from using activities that involve screen viewing to only 2 hours per day. To quote Dr Marjorie Hogan, one of the pediatricians who helped draft the AAP's guidelines on viewing time for children, "media consumption can be seen as the same way as food intake". It's all about simplicity and choosing the right content.

Integrating digital cameras into children's lives allows them to develop technological literacy from an early age. They learn essential technical skills, such as operating the camera, adjusting settings, and transferring and editing images. Moreover, it provides

an opportunity to discuss the ethical and responsible use of technology. Educators and parents can guide children to understand copyright issues, respect privacy, and practice appropriate behavior when sharing photographs online. This digital citizenship education ensures that children develop a responsible and ethical approach to technology usage.

Digital cameras have become valuable tools for children, unlocking their creativity, self-expression, and technical skills. By providing them with the means to capture and share their unique perspectives, digital cameras empower children to explore their surroundings and discover the magic of photography. As they embark on this visual journey, children develop not only their artistic abilities but also vital life skills such as observation, patience, and storytelling. Encouraging children to engage with digital cameras can open a world of possibilities, nurturing their imagination and helping them thrive in the digital age.

2.2. Digital Camera towards Children Social Development

Children's social development is a developmental process that allows children to interact with others in a way that is acceptable to society and culture. In short, social development involves a socialization process that allows children to learn social behavior or make social adjustments in a certain environment or social environment. Children's social development can be studied through several important aspects of socialization such as the process of imitation and identification, play activities, the development of social connections, friendship, and relationships with peers.

Throughout the socialization process, children learn the traditions, beliefs, values, and customs of their social group. They also learn the social rules practiced by a social group. For example, they learn the appropriate way of displaying emotions, and how to interpret the behavior and emotional statements of others accurately. This socialization process is also determined by the cultural context (Adachi, 2021). Social behavior that is appropriate for one culture may be considered inappropriate for another culture. However, there are many social behaviors that are universal and cross various ethnic and cultural groups.

The explosion of technology has now led to enormous changes in our daily lives. Today, the use of gadgets can be owned by loyal community groups across age, economic status and even race. If seen in our environment, children as young as one year old are already allowed by their parents to play with their parents' smartphones or tablets (Dardanou et al., 2020). Over the past five decades social science scientists have extensively studied the relationship between exposure to violent programs and aggressive behavior in children. The studies conducted not only reveal the relationship but also try to understand the mechanism that occurs between the exposure and the cause and effect of it. Of the many studies done, there is a study that is an extension to the adaptation of an ecological approach that can be an explanation for the effects that may occur because of the use of digital cameras by children to antisocial behavior.

Quoting a source from Zain et al. (2022) based on the writing of Farah Aziz from *Hello Doktor* website states, "the results of a study by child education experts at the Michael Cohen Group found that 60 percent of parents with 12-year-old children often use gadgets, 30 percent use them very often, and 36 percent of those children own their own gadgets". However, there are a few parents who may not know the long-term effects of

excessive use of gadgets among children, causing them to take a shortcut by giving gadgets to their children instead. According to Putri Afzan Maria, the effects of excessive use of gadgets have an impact on health and the development of children, especially children who are still in the process of developing neurons (Small et al., 2022). This is because the use of gadgets for too long and excessively can interfere with balanced development involving physical, emotional, mental (cognitive) and social.

Digital cameras can have a significant influence on children's social development (Sun & Zhang, 2019; Fan et al., 2021; Tabatabaian et al., 2021). Here are some positive and negative impacts that may arise.

Positive Impact:
a. Creativity and Self-Expression: Digital cameras allow children to express themselves through photography. They can take photos, experiment with angles and compositions, and express their thoughts and feelings through pictures.
b. Technical Skills: Using a digital camera introduces children to technical skills such as camera settings, object selection, and photo editing. This can develop their understanding of technology and help them become more skilled in using digital devices.
c. Appreciation of Nature and the World Around: By photographing nature and objects around them, children can develop a sense of appreciation for the beauty of the world around them. They can learn to observe carefully, appreciate details, and realize the uniqueness in every moment.
d. Collaboration and Social Interaction: Digital cameras can also be used as a tool to encourage collaboration and social interaction. Children can work together to take photos together, share ideas, and produce creative projects together. This can improve their social skills and teach them about teams and cooperation.

Negative Impact:
a. Addiction Potential: If not managed wisely, the use of digital cameras by children can lead to dependence on technology. They may become too focused on taking photos and editing them, spending hours in front of a screen and neglecting important physical and social activities.
b. Privacy and Security: Children need to be taught the importance of privacy and security when using digital cameras. They should be aware of the limitations in sharing photos online and understand the risks associated with sharing personal photos with strangers.
c. Influence of Media and Body Image: The use of digital cameras can also influence children's perception of their own body image and the body image of others. They may be influenced by unrealistic beauty standards promoted in the media or feel tempted to compare themselves to others based on photos they see.

Provide proper supervision and guidance when children use digital cameras and discuss safe use, teaching about privacy and ethics, and ensuring a balanced time between technology use and other activities are important steps in optimizing the positive impact of digital cameras on children's social development.

2.3. Digital Camera towards Children Language

When many aspects of life are now beginning to shift and be carried out online due to technological advances as well as due to the Covid-19 that has hit the world, an expert says parents need to try to keep up with digital trends and online terms to protect their children. According to Dorasamy et al. (2021), said the language used in the digital world changes quickly and children may not realize they are being targeted by predators if parents do not monitor.

To do this, parents need to have the necessary knowledge and skills to protect and educate children about the dangers that exist in the virtual world, he said. Almost all social media apps and platforms used by children have inappropriate content and interactions where predators use acronyms and slang to communicate with children.

Language development is a critical aspect of a child's overall growth and plays a pivotal role in their cognitive, social, and emotional development. In today's digital age, technology can serve as a powerful tool to support and enhance language acquisition in children. This essay explores how digital technology can aid in the development of language skills, including vocabulary, reading, writing, and communication. By harnessing the benefits of digital resources, we can create a rich and engaging learning environment for children, fostering their language proficiency and literacy.

Babies and children need continuous language stimulation so that their language development develops in parallel with cognitive and physical development. Studies show that the development of hearing and language can be stimulated as early as in the mother's womb to hear the details of the language used by parents (Firdaus & Andini, 2019). There is a hypothesis about the critical period for children's language development that is a debate between psycholinguistic and cognitive linguistics researchers, but on average they agree that the age of 1 to 5 years is a period called a sensitive or optimal period that needs to be paid attention to for the development of children's speech and language reach their maximum potential.

Digital Technology has had a significant influence on children's language development (Small et al., 2022; Haleem et al., 2022). Here are some of the ways in which technology has affected children's language developments:
   a. Access to information: With technology such as the internet, children now have easier access to various types of information. They can use search engines or educational applications to find answers to their questions. This helps to increase their vocabulary and expand their knowledge.
   b. Educational apps: There are many educational apps available that are specifically designed to help children learn languages. This application uses games, pictures, and interactivity to help children understand new words, improve reading and writing skills, and improve their understanding of grammar.
   c. Digital media: Children are now often exposed to digital media, such as videos, animations, and interactive television programs. This media can help children develop their listening skills, language comprehension, and communication skills. They can learn new vocabulary, listen and repeat words, and follow the story as it develops.
   d. Communication applications: Text messaging and video calling applications have become an integral part of many families' daily lives. Children can use

this application to communicate with their friends, family, and community members. This helps them practice speaking and writing in the correct language, develop social skills, and improve their understanding of language use in different contexts.

e. Distance learning: During the COVID-19 pandemic, many children are experiencing distance learning where technology is the main means of interaction with teachers and classmates. This affects children's language development because they have to rely on online communication to participate in discussions, express opinions, and understand instructions. Although there are some challenges in this regard, such as the lack of direct social interaction, the use of technology in distance learning can also enrich children's language experience by introducing them to a variety of language resources and different language models.

Although technology can provide significant benefits in children's language development, it is important to ensure that the use of this technology is properly supervised and directed. Parents and educators need to monitor the time children spend using technology and ensure they remain engaged in language activities that involve direct social interaction and real experiences. For children with language challenges or learning disabilities, digital technology offers assistive tools and applications that can support their language development. Speech recognition software, text-to-speech tools, and language therapy apps provide additional resources and strategies to enhance language skills, improve communication, and overcome specific challenges. These assistive technologies empower children to actively participate in language learning and bridge any gaps they may face.

Digital technology holds tremendous potential to facilitate and enhance language development in children. Interactive learning apps, e-books, multimedia content, communication tools, personalized learning, and assistive technologies can all contribute to improving vocabulary, reading comprehension, writing skills, and communication abilities. However, it is crucial to strike a balance between digital and offline experiences, ensuring that children engage in a well-rounded approach to language learning. By harnessing the benefits of digital resources while incorporating meaningful interactions and experiences, we can create an environment that nurtures children's language.

2.4. Digital Camera towards Children Cognitive Development

In this digital age, technology has become a part of our lives, including children's lives. Digitalization has a profound effect on their cognitive development. In this essay, we will discuss the digital and cognitive influence on children, touching on the positive aspects that also need to be considered.

Cognitive development is the development of individual thinking about a certain knowledge through the environment. The intended environment involves social interaction, exposure to knowledge repeatedly, and action from the experience passed. Cognitive development can change according to the individual's age. This is because cognitive development is generated by external factors or environmental challenges that encourage high-level thinking (Babakr et al., 2019).

For children, digital technology such as cameras play a big role in life because they grow up in the booming era of more advanced information and communication technology. The world is increasingly turning to dependence on digital technology and life will now continue to be driven by digital technology platforms (Konca, 2022). There is no denying that all of this is a direct effect of COVID-19 due to the huge impact of the pandemic when all children are forced to follow online learning, thus increasing the influence of digital technology in their lives. It certainly has a direct influence and relationship on development either physically, mentally and socially or behaviorally.

Learning through digital or technology refers to learning situations that involve the use of modern technology such as computers, cameras, digital network equipment, and the integration of various software as a facilitator in the learning scenario. According to Gjelaj et al. (2020), a digital learning environment can take place anywhere and regardless of time limits. Learning also does not require teachers to meet face-to-face with students because learning can be applied with the convenience of internet access without the need for learning face to face.

Technology has a significant influence on children's cognitive development. On the one hand, the use of technology in education can provide benefits for children's cognitive abilities (Blumberg et al., 2019; Kosmas et al., 2019; Gjelaj et al., 2020). The following are some of the influences of technology on children's cognitive:

a. Access to Information. Technology allows children to access a variety of information quickly. They can explore knowledge and learn about various topics interactively. This can improve problem solving skills, critical thinking, and conceptual understanding.
b. Visual and Interactive Learning. Applications, games, and other digital media can provide visual and interactive learning experience. This can help children understand difficult concepts in a more interesting and fun way. For example, math applications that combine game elements can help children learn math more effectively.
c. Cognitive Skills. The right use of technology can help children develop cognitive skills such as memory, attention, problem solving, and logical thinking. For example, online puzzles or strategy games can stimulate problem-solving skills and improve abstract thinking.
d. Creativity. Technology can also stimulate children's creativity through various creative tools such as graphic design software or music applications. Children can use technology to express their ideas, create digital artwork, or develop other creative skills.

However, it is important to note that the use of technology also has some negative impacts on children's cognitive development. Some of them are:

a. Attention Disorders. Excessive exposure to technology, especially attention-grabbing devices such as smartphones and tablets, can disrupt children's ability to concentrate and maintain attention in daily activities.
b. Lack of Social Interaction. Excessive use of technology can reduce direct social interaction between children. This can affect their ability to communicate, form social relationships, and understand emotional expressions verbally and nonverbally.
c. Dependency. Children who rely too much on technology may miss out on opportunities to play physically and use their imaginations. Physical activity and creative play are important for healthy motor and cognitive

development.

According to Shatri (2020), the use of digital technology among children can positively benefit their cognitive development. Access to digital devices and learning software helps children develop problem-solving skills, creative thinking, and math skills. Interactive learning programs and digital games can provide a fun learning experience, stimulate children's interest, and increase their knowledge absorption.

In addition, digital technology also plays an important role in expanding children's knowledge. Access to the internet allows children to access a wide range of information and learning resources. They can access e-books, educational videos, and educational apps that provide access to a world of knowledge quickly and easily. This opens opportunities for lifelong learning and helps them develop their interests in various fields.

However, the use of digital technology also has some negative aspects that need attention. Children who rely too much on technology may be at risk of lacking social interaction and physical activity. Excessive use can lead to increased physical health problems such as obesity and poor posture. Therefore, it is important for parents and teachers to monitor and control the use of digital technology in children's lives to ensure that it happens in a balanced way. In addition, uncontrolled use of digital technology can interfere with children's cognitive development. Too much time spent on video games or other digital activities can reduce the time allocated to important activities such as reading, physical play, and interacting with peers. This can hinder the development of their social and cognitive skills which are important in shaping their personality and social intelligence.

3. Research Method

This study is completely qualitative based on purposively sampling with interviewing 3 teachers which at least 3 years of experience. Research have identified three kindergartens such as *"Tadika Tadika Little Caliphs, Tadika Smart Reader Kids dan Tadika Genius Aulad"* in Sabah. These three kindergartens offer different approaches but equally emphasize the use and application of digital camera technology in addition to offering comprehensive development of children academically, spiritually, and socio-emotionally. The results of the study data were analyzed using qualitative methods manually such as recording interview sessions with participants, data transcription, data coding, making themes and making models that can be referred to in the discussion section of the study.

4. Results

Digital cameras can be a valuable tool for children, promoting creativity, observation, storytelling, and technological literacy, while also fostering social connections and communication skills. It provides opportunities for more interactive learning, expanding knowledge, and improving cognitive skills. However, it should be remembered that the use of digital technology should be controlled wisely. The Table 1, Table 2 and Table 3 shows the research result from interviews with participants from selected kindergartens.

Table 1: Example interview answer scripts from three participants discussing how a camera application benefits young children in social development

School/ Kindergarten	"Tadika Tadika Little Caliphs, Tadika Smart Reader Kids and Tadika Genius Aulad"
Objective 1	To identify camera application bring benefits to young children in social development.
Interview Question	1. How do you think a camera application can benefit your student's social development?
	2. Can you provide an example of a specific instance where you saw this benefit in action?
	3. In your experience, how does using a camera application contribute to children's social development in the classroom?
Participant 1 (Tadika Tadika LittleCaliphs) Teacher Answers	Question 1: *"I've noticed that my student has become more engaged with others since we started using a camera application. They love taking pictures of their friends and family, which has become a fun way for them to interact with others. When they show these pictures to their friends, it sparks conversations and helps them bond. It also boosts their confidence because they feel proud of their work and are excited to share it".*
	Question 2: *"Sure! At my student's last birthday party, they used the camera app to take pictures of the decorations and guests. Later, they created a little photo album on the app and shared it with their friends at school. This activity made them more popular among their peers and gave them something to talk about, which strengthened their friendships".*
	Question 3: *"In my classroom, I've observed that children who use camera applications are more likely to collaborate and communicate with each other. They often work together on projects that involve taking pictures, such as documenting a science experiment or creating a storybook. This collaboration helps them develop teamwork skills and learn to listen to and appreciate each other's ideas".*
Participant 2 (Tadika Smart Reader Kids) Teacher Answers	Question 1: *"A camera application can benefit students' social development by providing them with a tool to express themselves creatively, collaborate on projects, and share their work with peers and teachers. For instance, students can work together on a multimedia project, using the camera app to document their progress, record interviews, or create a video presentation. This process encourages teamwork, communication, and the sharing of ideas, which are essential components of social development".*
	Question2: *"I assigned a group project where students had to create a short documentary about a local community issue. One group decided to focus on the importance of recycling. They used the camera application to interview community members, capture footage of recycling facilities, and record their own discussions and reflections on the topic. Throughout the project, I observed*

	how the students had to negotiate roles, resolve conflicts, and make collective decisions about the direction of their documentary. This experience not only enhanced their technical skills but also significantly improved their ability to communicate and collaborate effectively with one another". Question 3: *"In my experience, using a camera application in the classroom contributes to children's social development in several ways. Firstly, it encourages collaboration and teamwork as students often need to work together to plan, shoot, and edit their videos. Secondly, it enhances communication skills since students must articulate their ideas clearly and listen to others' perspectives during the project. Thirdly, it fosters a sense of community and shared achievement when students present their work to the class, receive feedback, and celebrate their collective efforts. Overall, the use of a camera app promotes a more interactive and socially engaging learning environment".*
Participant 3 (Tadika Genius Aulad) Teacher Answers	Question 1: *"Using camera apps in the classroom can significantly improve students' social development. It encourages collaborative projects, encourages creative expression, and helps students build important communication skills. When students collaborate on multimedia projects, they learn to share responsibility, give and receive constructive feedback, and celebrate each other's strengths. This experience fosters a sense of community and improves their ability to work effectively in a team".* Question 2: *"Last semester, our class worked on a project where students created a short documentary about their favorite community helper. Students are grouped into teams and tasked with interviewing local professionals, recording interactions and editing their footage to create a coherent story. During this project, I observed a student who was usually quite quiet become more active and communicative. She took on the role of interviewer and demonstrated exceptional leadership skills, mentoring her peers and making sure everyone had a role. The experience boosted his confidence and improved his social interactions in the classroom".* Question 3: *"By using a camera app fosters an inclusive and interactive learning environment. It encourages students to engage with each other in meaningful ways, whether through collaborative brainstorming sessions, planning and executing video recordings, or editing their work together. This process helps students develop empathy as they learn to understand different perspectives and stories. Additionally, the collaborative nature of the project helps students practice problem solving and conflict resolution, as they navigate different opinions and ideas to create a final product".*

Table 2: Example interview answer scripts from three participants discussing how a camera application benefits young children in language development.

School/ Kindergarten	"Tadika Tadika Little Caliphs, Tadika Smart Reader Kids and Tadika Genius Aulad"
Objective 2	To identify camera application bring benefits to young children in language development.

Interview Question	1. How do you think a camera application can benefit your student's language development? 2. Can you provide an example of a specific instance where you saw this benefit in action? 3. In your experience, how does using a camera application contribute to children's language development in the classroom?
Participant 1 (Tadika Tadika LittleCaliphs) Teacher Answers	Question 1: *"Camera applications can benefit students' language development by encouraging them to express themselves verbally and narratively. The app helps them practice vocabulary, sentence structure and storytelling skills as they describe what they recorded and explain their ideas".* Question 2: *"Yes, last month, students did a video book report. They record themselves summarizing and discussing the plot, characters, and themes of their chosen book. This practice improves their speaking skills and increases their confidence in using new vocabulary".* Question 3: *"Camera apps in the classroom improves children's language development by giving them opportunities to practice speaking and listening. The app encourages them to express their thoughts clearly, practice pronunciation and engage in meaningful conversations with their peers during collaborative projects".*
Participant 2 (Tadika Smart Reader Kids) Teacher Answers	Question 1: *"Camera application can help your child's language development by giving them a fun and engaging way to practice speaking, storytelling, and using new vocabulary".* Question 2: *"Yes, when the students created video book reports, I saw many children become more confident in their speaking abilities. They practiced summarizing stories and explaining their thoughts, which helped improve their language skills* Question 3: *"Using a camera application encourages children to express themselves clearly and creatively. It helps them practice speaking and listening, improves their pronunciation, and allows them to communicate their ideas with their classmates".*
Participant 3 (Tadika Genius Aulad) Teacher Answers	Question 1: *"Camera application can help your child's language development by giving them a fun and engaging way to practice speaking, storytelling, and using new vocabulary".* Question 2: *"Yes, when the students created video book reports, I saw many children become more confident in their speaking abilities. They practiced summarizing stories and explaining their thoughts, which helped improve their language skills* Question 3: *"A camera application encourages children to express themselves clearly and creatively. It helps them practice speaking and listening, improves their*

pronunciation, and allows them to communicate their ideas with their classmates".

Table 3: Example interview answer scripts from three participants discussing how a camera application benefits young children in cognitive development

School/ Kindergarten	"Tadika Tadika Little Caliphs, Tadika Smart Reader Kids and Tadika Genius Aulad"
Objective 3	To identify camera application bring benefits to young children in cognitive development.
Interview Questions	1. How do you think a camera application can benefit your student's cognitive development?
	2. Can you provide an example of a specific instance where you saw this benefit in action?
	3. In your experience, how does using a camera application contribute to children's cognitive development in the classroom?
Participant 1 (Tadika Tadika LittleCaliphs)	Question 1: *"A camera app can boost my student's cognitive development by encouraging them to think critically and creatively while planning, recording, and editing videos".*
Teacher Answers	Question 2: *"Yes, my children's worked on a school project where he had to create a video presentation on a scientific topic. Ther had to research, write a script, and organize his ideas, which helped improve his critical thinking and organizational skills".*
	Question 3: *"Using a camera app in the classroom helps children develop cognitive skills by engaging them in complex tasks that require planning, problem-solving, and teamwork. It encourages them to think deeply and apply what they have learned in practical and creative ways".*
Participant 2 (Tadika Smart Reader Kids)	Question 1: *"A camera application can benefit cognitive development by enhancing critical thinking, problem-solving, and creativity as students plan, shoot, and edit their projects".*
Teacher Answers	Question2: *"Yes, when students created a documentary on local history, they researched, organized information, and planned their shots. This project improved their ability to analyze and synthesize information".*
	Question 3: *"Using a camera application in the classroom promotes cognitive development by engaging students in hands-on, creative tasks that require planning, decision-making, and collaboration. It helps them develop higher-order thinking skills and apply knowledge in new ways.".*
Participant 3	Question 1:

(Tadika Genius Aulad)	*"A camera application can enhance students' cognitive development by fostering critical thinking, creativity, and problem-solving skills as they engage in multimedia projects".*
Teacher Answers	
	Question 2: *"During a community event, students created video interviews with local leaders. They had to plan questions, conduct interviews, and edit the footage, which helped improve their organizational and analytical skills".*
	Question 3: *"Camera application in the classroom contributes to cognitive development by involving students in activities that require planning, critical analysis, and creative expression. It encourages them to think deeply and collaborate effectively with their peers".*

4.1. Social Development of Young Children

In the digital age, children are exposed to an array of technological advancements that have reshaped their lives (Mantilla & Edwards, 2019; Konca, 2022). One such advancement is the digital camera, which has revolutionized the way we capture and share moments. While some may argue that excessive screen time can hinder children's social development, this study aims to highlight the benefits of the application of digital cameras on children's social skills. By exploring how digital cameras promote creativity, self-expression, and collaborative learning, we can understand the positive impact they have on children's social interactions.

a. Enhancing Creativity. Digital cameras provide children with a medium to express their creativity and imagination. Photography allows them to explore their surroundings from different perspectives, encouraging them to view the world through a unique lens. By framing shots, experimenting with lighting, and capturing moments, children can unleash their artistic abilities. This creative outlet not only boosts their self-confidence but also encourages them to share their creations with others, sparking conversations and fostering social interactions.

b. Encouraging Self-Expression. Through digital photography, children can communicate their thoughts, emotions, and experiences in a visual and tangible way. They can document their daily lives, capture significant events, or convey their feelings through photographs. The ability to express themselves visually helps children develop a sense of identity and promotes self-awareness. Moreover, when children share their photos with others, it opens avenues for conversations, discussions, and connections based on shared experiences, enabling them to develop their social skills further.

c. Promoting Collaboration and Group Activities. Digital cameras provide an opportunity for children to engage in collaborative learning and group activities. When children work together to take photos, they learn to communicate, share ideas, and negotiate with one another. Collaborative photography projects can involve planning, organizing, and executing tasks as a team, fostering teamwork and cooperation. Furthermore, when children review and discuss their photographs together, they learn to give and receive constructive feedback, which strengthens their communication and interpersonal skills.

d. Building Digital Literacy. As children engage with digital cameras, they acquire valuable digital literacy skills. They learn to navigate the camera's functions,

understand basic photography principles, and explore photo editing software. These skills not only empower children to create visually appealing photographs but also equip them with essential digital literacy skills necessary for their future endeavors. With the rise of visual content in the digital realm, being able to capture, edit, and share photos effectively can significantly enhance children's ability to connect with others in the digital age.

e. Expanding Social Networks. Digital cameras enable children to document their experiences and share them with a broader audience. Whether through social media platforms, online galleries, or family albums, children can connect with others and expand their social networks. By sharing their photos, children can initiate conversations, receive feedback, and establish meaningful connections with individuals who share similar interests. This process fosters a sense of community, belonging, and social support, which contributes positively to their overall social development.

The application of digital cameras provides numerous benefits for children's social development. By fostering creativity, self-expression, collaboration, and digital literacy, digital cameras become powerful tools for enhancing children's social skills. While it is crucial to balance screen time and ensure proper supervision, the positive impact of digital cameras on children's social interactions cannot be overlooked. As technology continues to advance, embracing its potential to augment social development in children can pave the way for a brighter and more connected future.

4.2. Language Development Of Young Children

Children are exposed to a wide range of technological devices and gadgets. Among these, digital cameras play a significant role in capturing and preserving moments. While some may argue that excessive screen time can hinder language development in children, this essay aims to shed light on the benefits of using digital cameras to enhance children's language skills (Mantilla & Edwards, 2019; Gjelaj et al., 2020). By exploring how digital cameras promote storytelling, vocabulary expansion, and communication, we can understand the positive impact they have on children's language development.

a. Storytelling and Narrative Skills. Digital cameras provide children with a medium to capture visual stories, encouraging them to develop their storytelling abilities. By composing photographs and creating narratives around them, children engage in the process of constructing stories and sequences. This practice enhances their narrative skills, as they learn to organize their thoughts, develop a coherent plot, and convey meaning through visual imagery. The act of capturing and sharing their visual stories also stimulates their imagination and encourages them to communicate their ideas effectively.

b. Vocabulary Expansion. Using digital cameras, children encounter various objects, people, and places in their surroundings. As they explore and photograph different subjects, they develop a natural curiosity that drives them to seek knowledge and understand the world around them. This curiosity leads to meaningful conversations and inquiries, allowing children to expand their vocabulary. Furthermore, as they share their photos and discuss them with others, they engage in discussions that require them to use descriptive language, thus enriching their vocabulary even further.

c. Visual Literacy and Interpretation. Digital cameras provide a platform for children to develop visual literacy skills, which are crucial for understanding

and interpreting visual content. As children take photographs, they learn to observe and analyze their surroundings, paying attention to details, patterns, and visual elements. This process enhances their ability to interpret visual cues, understand symbolism, and express their observations through language. Digital cameras empower children to communicate their interpretations effectively, as they learn to describe the emotions, narratives, and meanings behind the photographs they capture.

d. Communication and Expression. Photography through digital cameras enables children to express themselves in a unique and powerful way. As they capture moments and experiences, they are encouraged to communicate their thoughts and emotions associated with those images. Whether through verbal discussions, written captions, or multimedia presentations, children develop the ability to express themselves coherently and confidently. The process of sharing their photographs and engaging in conversations with others enhances their communication skills and fosters meaningful connections with peers and adults.

e. Cross-Cultural Understanding. Digital cameras facilitate the exploration of diverse cultures and perspectives. Children can document their experiences and encounters with different cultures, traditions, and lifestyles through photography. By capturing images of cultural events, diverse communities, or global landmarks, children develop an appreciation for cultural diversity and gain insights into the lives of others. This exposure fosters empathy, understanding, and respect for different cultures and languages, contributing to the development of their intercultural communication skills.

The application of digital cameras offers numerous benefits for children's language development. Through storytelling, vocabulary expansion, visual literacy, communication, and cross-cultural understanding, digital cameras become powerful tools for enhancing children's language skills. While it is essential to maintain a balance between screen time and other language-rich activities, the positive impact of digital cameras on children's language development cannot be overlooked (Scherger et al., 2023; Janius et al., 2023a). Embracing the potential of digital technology in promoting language skills opens new avenues for children to express themselves, connect with others, and develop into effective communicators in the digital age.

4.3. Cognitive Development Of Young Children

Digital cameras have become a ubiquitous tool that has transformed the way we capture and document our lives. While concerns may arise about the impact of excessive use of digital cameras on children's cognitive development, this research aims to explore the benefits of the application of digital cameras on children's cognitive skills (Gjelaj et al., 2020; George et al., 2020). By examining how digital cameras promote creativity, observation, problem-solving, and critical thinking, we can understand the positive impact they have on children's cognitive development.

a. Enhancing Creativity. Digital cameras provide children with a platform for creative expression and exploration. By framing shots, experimenting with angles, and capturing unique moments, children are encouraged to think outside the box and unleash their imagination. This creative outlet stimulates the brain's divergent thinking, allowing children to develop their own unique perspectives and visual interpretations of the world around them (Amdan, Janius, Jasman, & Kasdiah, 2024a). The act of capturing and editing photos

nurtures their artistic abilities and fosters a sense of self-expression.

b. Improving Observation Skills. Through digital photography, children learn to observe and pay attention to details in their environment. They develop a heightened sense of awareness as they search for interesting subjects, explore different textures, colors, and patterns, and capture moments that others might overlook. This process enhances their observation skills and cultivates a keen eye for detail, which can have a positive impact on various areas of their cognitive development, such as attention span, memory retention, and overall perceptual abilities.

c. Promoting Problem-Solving and Critical Thinking. Digital cameras present children with opportunities to solve problems and think critically. From adjusting camera settings to framing shots, children engage in a series of decision-making processes that require problem-solving skills. They must consider lighting conditions, composition, and subject positioning to capture the desired image. Moreover, photo editing software allows children to experiment with different effects and enhancements, encouraging them to think critically about how to achieve the desired outcome. These processes enhance their ability to analyze, evaluate, and make informed decisions, which are valuable cognitive skills applicable in various aspects of life.

d. Encouraging Reflection and Self-Evaluation. Digital cameras enable children to review their photographs and reflect on their work. They can assess their compositions, analyze the effectiveness of their choices, and identify areas for improvement. This process fosters self-evaluation skills, as children learn to critically reflect on their work and adjust accordingly (Amdan, Janius, & Kasdiah, 2024b). Through this iterative process of capturing, reviewing, and refining, children develop the ability to assess their own performance, set goals, and strive for continuous improvement, thus promoting metacognitive skills.

e. Facilitating Digital Literacy. The use of digital cameras introduces children to various technological tools and software. They learn to navigate the camera's functions, explore photo editing applications, and share their photographs through digital platforms. These experiences contribute to their digital literacy, equipping them with essential skills required in today's digital world. By mastering the use of digital cameras, children develop technological proficiency and gain confidence in navigating digital interfaces, thus preparing them for future academic and professional endeavors.

The application of digital cameras offers numerous cognitive benefits for children. By enhancing creativity, observation skills, problem-solving abilities, critical thinking, and digital literacy, digital cameras become valuable tools for cognitive development (Zulkafli et al., 2024). While it is crucial to maintain a balanced approach to screen time and encourage a variety of cognitive activities, the positive impact of digital cameras on children's cognitive skills cannot be overlooked. Embracing technology to stimulate cognitive growth enables children to explore their creativity, develop critical thinking skills, and adapt to the digital world they inhabit (Fadel et. al., 2022).

4.4. Model of Application of Digital Camera Todards Children Development

Based on Figure 1, the application of digital cameras in children's development has proven to be a valuable and impactful tool. Through promoting creativity, self-expression, social interactions, language development, and cognitive skills, digital

cameras have opened new avenues for children to explore, learn, and grow. While it is important to strike a balance between screen time and other activities, the benefits of digital cameras cannot be ignored. In terms of language development, digital cameras enable children to expand their vocabulary, develop narrative skills, and communicate their thoughts and emotions through visual imagery. Additionally, digital cameras contribute to the development of critical thinking, problem-solving, and decision-making skills as children adjust camera settings, frame shots, and explore photo editing software.

As technology continues to evolve in children (Dorouka et al., 2020), the application of digital cameras in children's development provides numerous benefits. It empowers children to become active participants in documenting their lives, stimulates their curiosity, and prepares them for the digital age. However, it is crucial for parents, educators, and caregivers to guide children in using digital cameras responsibly and ensure a healthy balance between screen time and other forms of developmentally enriching activities.

Figure 1: Model of Application Digital Cameras Toward Children Development
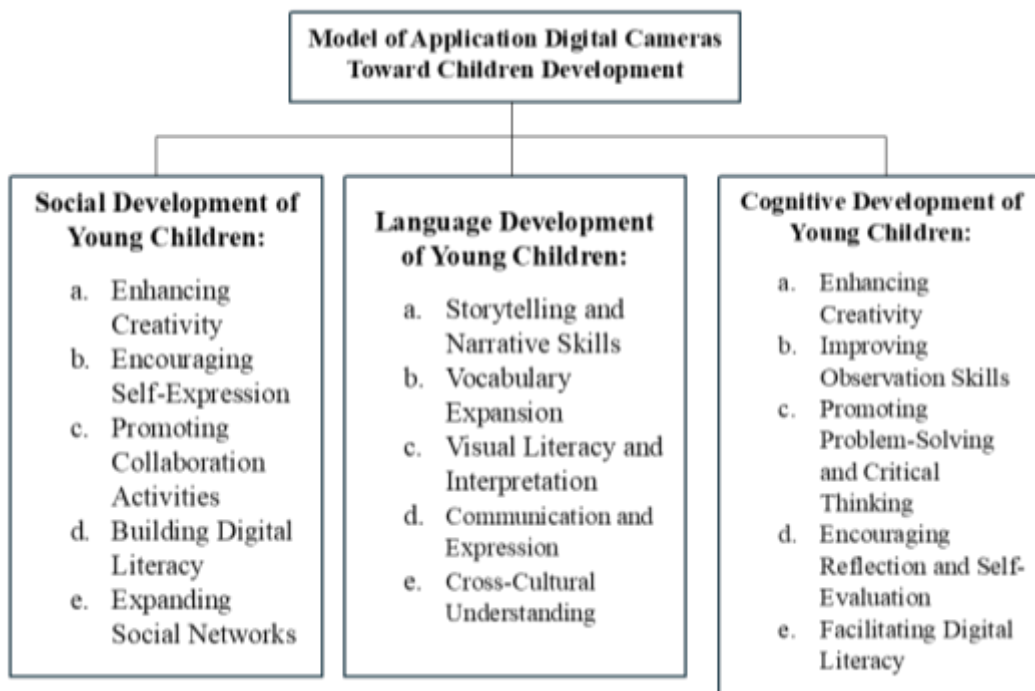
5. Conclusion

In conclusion, the model of applying digital cameras in children's development has demonstrated its potential to foster creativity, social skills, language development, and cognitive growth. By embracing this technology and harnessing its benefits, we can provide children with opportunities for self-expression, learning, and connection in today's digital world. With proper guidance and supervision, digital cameras can be powerful tools that enhance children's overall development and prepare them for the challenges and opportunities of the future.

Conflict of Interest

The authors declare that the study was conducted without any commercial or financial relationships that could be interpreted as a potential conflict of interest. The main purpose of these studies is for education and subject to early childhood education future.

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