Parental Involvement Challenges in ICT-Based Early Childhood Education Attainment

Paul K. Komen[1] & Jackline A. Ongínjo[2]

[1]*Rift Valley Institute of Science and Technology, Kenya (komenpaulo@gmail.com)*

[2]*Rift Valley Institute of Science and Technology, Kenya, Kenya (*jackieonginjo@gmail.com*)*

https://doi.org/10.62049/jkncu.v4i2.118

Abstract

With the fast digitization of the world, ICT is taking a central role in ECDE and provides many learning opportunities. This study aimed to examine parental involvement in ICT-based ECDE attainment. The research objectives used for this study are to investigate the extent to which parents provide ICT tools for learning in ECDE programs in Kenya and to assess the level of parental involvement in assisting children with ICT-based learning in ECDE programs in Kenya. This research utilized existing literature from peer-reviewed academic journals. The researchers employed three search terms: ' parental involvement,' 'challenges,' and 'ICT-based early childhood education. The targeted journals included 9,000 articles. Articles that did not address the search terms were excluded. The final sample for review comprised only four scholarly articles. Content analysis based on Marcus's theory is used in the study, which shows that parents face some difficulties when using the ICT-based ECDE, significantly less educated parents. The study established that several parental involvement challenges exist in ICT. The study concluded that these challenges can be overcome by parental empowerment and multi-sectoral tools, which can be used to close the technology gaps and improve the ECDE quality. The paper suggests policy recommendations for the government, parents, teachers, policymakers, and institutional managers. This study reveals a vital part of parental engagement in forming the children's educational experiences and preparing them for the digital age, thus stressing the need to overcome the parental challenges to improve the ECDE effectiveness of ICT.

Keywords: Early Childhood Education, Challenges, ICT, Parental Involvement.

Introduction

Parental support of school activities is one of the decisive factors for student success, improving moral performance, behaviour, and academic achievement. Schools and parents work together to create a supportive atmosphere (Gamez et al., 2024). The COVID-19 pandemic profoundly boosts parents' involvement in their children's education, especially online learning (Lestari, 2024). Nevertheless, parents` lack of active involvement in homeschooling is observed, and parents with higher education are more engaged with their children's studies (Mwenje et al., 2020). Despite this, there still needs to be more exploration of the role of ICT in home-based learning. The most recent focus is on flipped lectures (Wen et al., 2021). While MOOCs have achieved a dominant position among adult learners, the future impact on younger students remains an open question for researchers (Papadakis et al., 2019). On balance, multi-sectorial interventions should be the order of the day to resource parents on the essence of home-based educational networking, which in turn will better the academic standing of the children (Mwenje et al., 2020).

ICT implementation in early childhood development settings requires more than mere technological developments, as it demands equal involvement of parents and the entire community (Yaşar Ekici, 2016). The early childhood period is characterized by children between the ages of 0-8. In contrast, early childhood development includes the physical, cognitive, and social developments in the early periods of children's lives. The 6-12 year ages are when the increase and the growth are the most rapid. From the early childhood years, children are introduced to technology, which in the case of information and communication technology (ICT) can be defined as any visual, audial, printed, and written means that makes information accessible and creates information that children can use since their young ages. (Yaşar Ekici, 2016).

The controversy remains over employing ICT tools in educating young children. Some people think it is evil because it could make kids less active, lonely, and worse at focusing and talking.

Chen et al. (2018), argued that ICT is a helpful learning tool. They point out research showing that technology can be suitable for young learners. For instance, it can provide new ways to explore and discover, offer challenging activities, and pique children's curiosity. It can also benefit creativity, play, learning, and social interaction. While there is still much to learn about ICT in early education, it has the potential to be a positive force.

Schools utilize more breakthroughs in ARCT innovation for better educational programs, causing product changes in the ICT section that impact the application of technology in education in the field (Chen et al., 2018). It has been argued that Information and Communication Technologies (ICT) have always jumbled the existing order in education.

According to (Lestari et al., 2020) ICT is integral to other emerging technologies involving tools such as social media, digital devices such as desktop computers, interactive whiteboards, mobile phones, iPads, and television, and the software that empowers these gadgets. Integration of ICT into the classroom could extend from simple activities of the students that were to develop the consumption of knowledge, for example, the use of multimedia (teachers' use of presentation software, DVDs, or podcasting), to those that

aim at developing students' abilities to produce knowledge. ICT holds the possibility of refining teaching and learning, and it is the teacher's responsibility to determine when and how to use it.

In Belgium, no law prescribes preschools to use computers to teach their students. Nevertheless, a significant number of children make use of computers at home before they can even read and write. Researchers wanted to understand whether preschool teachers use computers and how they use them in the classroom. In preschool, learning is all about play, unlike in regular school, where there are more structured lessons. It does, therefore mean preschoolers can utilize computers in various ways other than in regular school (Aldhilan, 2024). The studies showed that teachers did not give children much computing instruction when using computers. They worry that too much instruction might take away from the play-based learning in preschool. However, if teachers do not give any instruction, the children can get bored and not learn at all. There are various applications through which computers can be introduced into those preschool years. For instance, kids can use them to play games, study new words, or create drawings.

In a study by Hammond (2014), England has been trying to make schools use technology for a long time. It provides money for computers, the internet and the training of the teachers and even new schools with advanced tech facilities were constructed. Besides, the government also created groups to assist schools in determining how to utilize all this technology (Unicef, 2014). Nonetheless, the administration has shifted towards more laid-back policies. They need to provide more help to the school with the usage of technology; even though they still insist on the fact that technology is essential, Hammond (2014).

In Australia, a policy target policy for ICT aims to make teachers include the latest tech applications in their classrooms, such as virtual reality. However, teachers wonder if the efficacy of this intervention is valid. For instance, a survey of 1,500 teachers conducted by the Western Australian Department of Education and Training (2006) revealed that almost all (95%) of them were comfortable with basic computer programs. However, only 18% of them used them regularly in class. Similarly, computer technology was applied for just 18% of the teachers who undertook to create new lessons or computer skills. One more research, which was conducted by a total of 2,500 students, showed that teachers commonly used technological tools in checking assignments, not in actual teaching.

In numerous cases in developing countries, classroom technology integration (ICT) has been challenging. An example from Tanzania shows educators need to become more familiar with technology and use it efficiently for the needs of pupils. The most challenging thing is money. Schools still need more computers, the internet, and competent teachers but due to a lack of finances neither did to support this technology. It can even be challenging to power gadgets as electricity can be unstable in some areas. The Tanzanian government has set up some policies to increase the use of ICT in schools, policies that look at the availability of technology in schools, teachers being trained, and the schools having great plans for running smoothly. The downside is that these scenarios are only sometimes practical in resolving the problem. Teachers are still primarily teaching traditionally, with very little use of technology in the classroom (Naik et al., 2020)

Uganda's education policy is geared towards integrating technology in schools and providing technology to all students. In 2004, a program was rolled out to equip schools with computers. This was seen in most primary and secondary schools funded by the government, where some schools had more. To deal with the

electricity issue, the schools were given solar power. The other aspect included training teachers on technology in education.

Moreover, three things are crucial for effective use of technology in schools: Everyone involved (teachers, administrators, and parents) should know how to use technology, and A clear and well-explained plan should be in place for how technology is used in the schools. However, technology should be inserted in all school operations, not just for learning; although there have been some attempts, technology use by school administrators still needs to be improved. Many still rely on manual systems for tasks like keeping student records and monitoring teacher attendance. This can lead to problems like lost documents, inaccurate information, and wasted resources(Lutalo & Bisaso, 2020).

Kenya's education system is being matched to fit the agenda of Kenya Vision 2030 and the new constitution. In 2011, a task force was set up to investigate the possibility of aligning education with the new constitution. However, a 2012 report revealed that only some schools in Kenya own computers or the internet. The report suggested the establishment of a national centre to facilitate the incorporation of ICT (Information and Communication Technologies) into education. A second report of the same year revealed that most schools in Kenya do not have computers, and only a few use them for teaching(Chris, 2015). A Policy Framework for Education, Training, and Research works to ensure that ICT is a household tool of education. This policy states that all schools and teachers should have access to ICT equipment and be competent in using ICT for teaching and learning. Besides the well-known and encouraging ICT policy in Kenya's education sector, it is also necessary to look into the problems parents face in involvement in ICT-based early childhood education in Kenya, which is the aim of this study.

This study was guided by a theory called Marcus's Theory, which states three things matter: how much effort it takes (cost) if parents have the tools and knowledge (resources), and how valuable parents think it is (value). This theory helps to understand what makes it hard or easy for parents to use new technology for their kids' education (Chris, 2015)

Statement of the Problem

This research deals with the insufficient parental participation in Kenya's ECDE programs based on ICT. Parental input in ICT-based ECDE programs has enormous advantages, such as improving learning outcomes, communication between parents and teachers, and creating a more supportive learning environment for children. There is a growing tendency to use ICT tools in the ECDE programs. Although this carries some advantages, parents should be more involved in the children's participation in this new pedagogical method.

However, despite researchers' efforts to examine them, challenges remain. Parents need to be empowered and fully involved in helping their children. This study intends to fill this gap by offering remedies to the problems parents face, like the lack of ICT devices that their children need to use.

These include factors like affordability, internet connectivity, and the availability of computers in the communities. This study aims to address this gap by providing solutions to the difficulties parents encounter about the availability of ICT devices that their children need. This involves looking into the factors of

affordability, internet connectivity, and availability of computers in their communities and taking parental roles in helping their children use ICT tools while partaking in the ECDE programs. This study offers insights into the existing problems and practices relating to ICT-based ECDE in Kenya. This knowledge can inform strategies to improve access to technology, equip parents with the necessary skills to support their children's learning, and ultimately enhance the overall effectiveness of ICT-based education in early childhood development. Many studies have targeted these challenges, and more needs to be done to empower parents to overcome these challenges. Against this background, this study sought to assess the extent of parental involvement challenges in engaging in ICT-Based Early Childhood Education attainment in Kenya. The studies have targeted these challenges, and more needs to be done to empower parents to overcome these challenges. Against this background, this study sought to assess the extent of parental involvement challenges in engaging in ICT-Based Early Childhood Education attainment in Kenya.

Objectives

- To investigate the extent to which parents provide ICT tools for learning in ICT-Based Early Childhood Education Attainment in Kenya
- To assess the level of parental involvement in assisting children with ICT-Based Early Childhood Education Attainment in Kenya

Methodology

This research utilized existing literature on parental involvement challenges in ICT-based early childhood education attainment. Data collection targeted peer-reviewed academic journals. The researchers employed the search term ‘Parental Involvement,’ ‘challenges,’ and ‘ICT-based early childhood education.’ In order to ensure comprehensive coverage, there was no specific starting point for the search timeline. The search included all articles published from 2019 to May 3, 2024, resulting in 9,000 articles. Upon review, it was observed that many articles mentioned parental involvement challenges in ICT superficially rather than as a theoretical or empirical concept. Articles that did not thoroughly address parental involvement challenges in ICT-based early childhood education or briefly mention it were excluded. After careful screening, the final sample for review comprised four scholarly articles that detailed parental involvement challenges in ICT-based early childhood education attainment. Therefore, data was collected from different literature reviews.

Results and Findings

This study scrutinized the literature from journals authored by Pirani and Hussain (2019), Gjelaj et al. (2020), Nikolopoulou et al. (2018) and Lestari et al. (2020). The research by Pirani and Hussain (2019) based its data on qualitative research methods. This research utilized qualitative data, which was analyzed to determine how people understand their experience with the use of technology in early-year children and what meaning they got from their personal experiences. The research article by Gjelaj et al. (2020) included in-depth interviews and content analysis. Moreover, the four dimensions from Kelly’s model of 2014 were utilized as the criteria and guiding elements in creating many themes and discussions. The next step was content analysis, and then the online questionnaire was analyzed using descriptive statistical analysis.

The Extent to Which Parents Provide ICT Tools for Learning in ICT-Based Early Childhood Education Attainment.

Gjelaj et al. (2020) demonstrated that parents' opinions on technology use in early childhood classes included positive and negative features. Well-planned classes that include technology should be used to teach them. According to their opinions, parents are adopting technology to help them learn more than in the past.

Parental support and ICT tools are the main factors that define the extent of children's involvement with technology from birth. Studies have shown a solid connection between parents' attitudes to the media and how their children use technology. Hence, the parents are telling how they can achieve easy access to the technological tools the children need and guide them in their interaction with the ICT tools. Although the parents are worried about screen time and the possible adverse effects, most parents regard technology as an essential part of their children's development; via vocabulary, cognitive, and early learning skills, the children acquire their abilities. Parents provide their kids with various digital technologies, such as smartphones, tablets, and computers, enabling them to explore new ways of exploring, creating, and learning. Aside from this, parents play an essential part in the supervision, and the directing of the use of technology by the children, the aim which is to promote the responsible and balanced use of ICT tools; that is to say, the digital experiences should be the support of the children development and well-being and not the reason for them to get into problems (Gjelaj et al., 2020).

ICT is now considered the backbone of preschool education, the beginning of a life that will ultimately prepare a child for life in the modern world. At a time when technology is changing so fast, schools must re-write their curricula to fit the new needs of learners so that they will be included. Although ICT has already changed many fields of society, such as culture, education, and communication, its use in preschools still needs to be explored more. Nevertheless, the advantages of ICT applications in the early stage are evident, as they widen access to knowledge, improve the learning processes, and create the keys to language development, literacy, mathematical concepts, cognitive abilities, and creativity. Besides, ICT provides a unique chance to work together, adapting the teaching methods to the students' diverse needs and transmitting the children's thoughts. The parental supply of ICT tools makes this learning environment even better by increasing the children's exposure to technology outside of the classroom. This creates the continuity between the home and school experiences and thus promotes digital literacy from an early age. The development of the area of early childhood education is changing. As such, the cooperation of parents and educators in providing and supporting ICT tools becomes ever more necessary to enable children to acquire the skills and competencies needed to succeed in a technologically-driven world (Kaindio & Wagithunu, 2014).

As Kaindio and Wagithunu (2014) have demonstrated, the parental supply of ICT is very significant in the ECE for the development of the digital literacy of the teachers and the improvement of the technology access in the ECDE classrooms. The outcomes show the need for parents' participation in the ICT training of ECDE teachers at public schools to cover the gap created by the absence of ICT training at the tertiary level. Besides, the parents can assist teachers by giving them training materials and encouraging the introduction of technology infrastructure. The shrinking of the gap between private and public schools in terms of computer usage and availability is a project carried out by parents, school managers, and

policymakers. Besides, the parents can be the major influences in how students are directed to ICT integration by communicating information about its benefits and requesting curriculum reforms. Through direct interaction with the schools and the education experts, parents can be the ones who help to make the place where the technology will be applied to enhance early childhood education.

Nikolopoulou et al. (2018) researched the access to and use of Information and Communications Technologies at home, a broad class of electronic devices and interactive toys for young children. It indicates that children aged 3-6 face slow learning when not involved in exciting and interactive activities. Five people have observed that they are in those chairs that change their world into a different and unrealistic place. The gender variation is shown in the technology use, where boys are more interested in ICT-related activities. The parent's and family's values regarding the children's learning at home with technology are critical in developing the children's spending habits and rules regarding the use of technology. Hence, socio-economic factors, such as parental education and income levels, strongly affect children's ICT access. The research demonstrates the relevance of parents' ICT tools supply in the early formation of children's tech usage at home. Hence, the importance of parental mediation and support to the children's tech learning experiences is shown. Moreover, it proves the relevance of the partnership between teachers who work with young children and parents to help children develop in the digital age by discussing practical ICT usage and giving the parents guidance on how to use technology for educational purposes and at the same time, they can limit the possible threats.

The Level of Parental Involvement in Assisting Children in ICT-Based Early Childhood Education Attainment

According to questionnaire results from a study by Gjelaj et al. (2020), the majority of parents (66.67%) said they were in favour of their young children (ages 0 to 5) using digital tools. According to the statistics, the majority of parents provide their young children (ages 0 to 5) access to TV (74.44%), smartphones (50.50%), and tablets (30.00%). The benefits of technology use, such as learning the English language, developing technological skills, and general development, were mentioned by parents who expressed satisfaction with how their young children access and use it at home. Approximately 43% of parents strongly believe that allowing their children to use technology will help them become more prepared for school. Approximately 57% of them oppose this.

The research results show that parents highly support using technology in classrooms to develop 21st-century skills. The above idea was supported by interviews showing that technology provides children access to various resources, enabling them to become multi-taskers. Also, the use of technology improves the communication skills of children as they can connect themselves to the world through which they can read new concepts and, thus, learn through visual learning. Consequently, the motivation to read and understand complex concepts becomes more accessible; thus, information is retained for longer. The importance of schools in promoting technology-based teaching in the early year classrooms was also stressed as one of the significant aspects by the research participants.

The study by Pirani and Hussain (2019) reveals findings on the perspective of parents and teachers on integrating technology in early-year classrooms. The author confirms that Parents are assisting technology based on the results they see in their children's mental development. They talked about some of the

observations when their children face problems with mathematics problems at the beginning of school; however, the improvement is noticed gradually with the use of mobile phone applications and games. This makes their learning to be better. Research findings during the application of technology in classrooms also proved that with time and practice, the use of technology in daily lessons increased productivity. Besides, it was also observed that students gained skills such as sight reading and making predictions to finish complex tasks independently (Lestari et al., 2020). This development recognized technology integration as a valuable tool for year one children to have the experience. Students who did not have the chance to learn through technology were also often responsive during the discussion. However, they could not finish complex tasks due to the monotonous tasks, use of resources, and teaching style. To sum up, this influenced their attention span.

In the study by Pirani and Hussain (2019)The parents explained how schools could close the innovation gap in the teaching and learning process by using technology. Parents were delighted with the school's endeavour to merge technology with the classroom by the way the storytelling example was given. They say multimedia can be used as part of book presentations during library time. It has a more significant effect when we bring the kids to an auditorium when they are in a new situation, and they get too much information. It was found that parents had good feelings about making lessons using multimedia. It is suggested that students should study in an auditorium or other type of room where they are likely to be in front of giant screens since this is the most effective learning environment for kids.

Discussion

The Extent to Which Parents Provide ICT Tools for Learning in ECDE Programs

The scale of the degree to which parents give ICT tools for learning in ECDE programs is dependent on the number of factors that can affect it, like access to technology, parents' attitudes towards ICT, and socio-economic status. Researches reveal that parental help and the ICT tools provided by them are the main factors in which children become involved in technology at an early stage of their lives (Lestari et al., 2020). However, with the issue of the cost, internet, and computer access in the communities, the parents may need help giving these tools to their children. Even though there are difficulties, parents are increasingly interested in the fact that technology is an essential tool in early childhood education. This is supported by Brigas et al. (2016) parents are ready to spend money on digital resources to help their children improve in the classroom. The joint work of the parents, teachers, and policymakers is a necessary thing to do in order to solve the problem of unequal access to technology and digital literacy among the young ones (Gjelaj et al., 2020).

The extent of parental support in the ICT-based learning of the children in the ECDE programs is different for all these factors, such as parental attitudes, technological literacy, and the availability of resources. Thus, the first group of parents can be used for educational purposes, and they are ready to help their children with it; on the other hand, the second group of parents may not be so sure or do not have the skills to give their children enough guidance (Cooper-Kahn & Dietzel, 2024). The authors proved that parental support is a significant factor in children's technology usage and learning results. Hence, the home environment has to be supportive. Still, well-thought-out programs are required to help parents study the technology and the skills that will enable them to control the digital resources and help the children in the ECDE programs.

The parents, the teachers, and the education authorities should not only support the students but also give them the chance to have ICT-based learning experiences at home and in early childhood education settings.

The Level of Parental Involvement in Assisting Children With ICT-Based Learning in ECDE Programs

Parents also believe that technology has replaced literature because of the online information that is so easy to find and research, as shown by a study by (Gjelaj et al., 2020). Moreover, the research has shown that a child could learn using this multitasking strategy, leading to many opportunities. Whether students use too much technology or not, the ones who follow strict regulations will never be able to multitask. It is a good idea for kids to get reliable information on technology from different sources. The parents, who used multimedia to look at the visual parts of the text and images, said that they agreed with the concept and that the students could be more attracted and motivated to read. They believe that when students view multimedia and read books, they acquire the same concepts from two angles. As books are so vital, they can be displayed on the screen to catch the students' attention and enthusiasm while also providing them with a feeling of safety(Lestari et al., 2020).

Parents would still use diverse digital technology resources, even though they think the technological world is terrible for children. The primary studies demonstrate that the different behaviours of parents have a significant effect on their children. According to researchers, nowadays, parents must give their children quality time and not read to them for a long time. Besides, the research has shown that the parent's attitude towards media is strongly related to their use of technology and that of their children. The later research shows that the time a child spends on phones or other electronic devices is a result of both the child and the parent and that the parents' attitudes are the factor that plays a significant role in this (McCloskey et al., 2018). Overall, parents viewed the media as a beneficial tool for the development of children. Therefore, many disagreed with the experts' recommendations on how much time children should be exposed to the media.

The research proves that parents have a positive attitude toward using digital technologies in early childhood education. (McCloskey et al., 2018). Besides, they also support the procedure of giving their children technology supplies, saying that the technology has a good effect on their children's development. Alelaimat et al. (2020) showed that both parents and teachers were in complete agreement with the part of technology digital media in forming child culture.

Pirani and Hussain (2019), claims that children can meet people from different backgrounds in school and may need more technology at home. A parent has pinpointed this problem and said that because some kids do not have a computer in their homes, they should make a task that can be done on paper, too. For example, the notes app on the phone is so good that my child even types his and his friend's names. The few who disagree with this proposition say that we are not equipped with technology, for we might not even be able to operate it. According to Mwenje et al. (2020) parents have been quite favourable to technology in the classroom, and schools may be further promoted by using different software programs for efficient instruction. Moreover, schools also aspire to be outstanding in introducing new concepts, which, in turn, will enable students to learn. Parents stated that if schools could do homework involving research and work on a project using technology, we could also teach our kids to use technology responsibly.

Conclusion

The most apparent reason parents give ICT tools to children in the ECDE programs is that parental support and the provision of ICT tools are the most critical factors affecting children's technology use from the first age. The research proves that parents' attitude towards the media is connected to the children's use of technology. In this way, the evidence shows that parents have a significant role in supporting access to digital resources and guiding their children's interactions with ICT tools. Technology has many good sides, but that is not the core problem. On the one hand, many parents use technology as a tool to foster their children's growth. On the other hand, some people say that technology is the cause of language skills, cognitive abilities, and early learning competencies. Children are given electronic devices such as smartphones, tablets, and computers by their parents; thus, on the one hand, they are allowed to be creative, go on a journey, and learn in a new way, and on the other hand, they can move in the world. Besides that, the parent's involvement in the supervision and control of their children's technology use is the foundation for the development of the good and the balance between the children's digital and non-digital activities. Therefore, digital experiences will help instead of hindering the development and well-being of the children (Gjelaj et al., 2020).

On the contrary, the degree of parental help given to the children in ICT-based learning in ECDE programs differs. Although some parents favour using digital technologies for their young children and are happy with how they access and use technology at home, other parents need to be more aware of its benefits. Nevertheless, when appropriately conducted, the research shows that exposure to technology can improve children's learning achievements and equip them for modern life. Parents greatly assist their children with technology by allowing them to use it, taking part in its integration into schooling, and encouraging responsible use. The combination of parents, teachers, and policymakers is the key to dealing with the problems and providing the necessary technology. Thus, children will be able to acquire the necessary skills and competencies to be successful in the digital age (Gjelaj et al., 2020; Pirani & Hussain, 2019).

Recommendations

- The government should prioritize initiatives to promote digital literacy among parents. This can be done through awareness campaigns, workshops, and training programs that equip parents with the knowledge and skills needed to be in the digital world alongside their children.
- Educational institutions should emphasize programs to increase parents' digital literacy awareness.
- The parents should keep in communication with their child's teachers. That way, they can know how ICT is being put into the curriculum and how they can help the learning at home.
- The policy should adjust the curriculum to be more flexible and adaptive so that educators can integrate digital technology seamlessly into the existing pedagogical practices, and, at the same time, critical thinking, creativity, and digital citizenship among young learners should be promoted.
- Policymakers should work with stakeholders to create detailed guidelines and standards for ICT's ethical and responsible use in early childhood education. These guidelines should stress the need to find a balance between screen time and other forms of learning and play; at the same time, they should also deal with the issues related to privacy, safety, and digital equity.

References

Aldhilan, D. (2024). The Incidence of Information and Communication Technologies in Early Childhood Classrooms: A Systemic Literature Review. *Pedagogical Research*, *9*(2).

Alelaimat, A. M., Ihmeideh, F. M., & Alkhawaldeh, M. F. (2020). Preparing preservice teachers for technology and digital media integration: Implications for early childhood teacher education programs. *International Journal of Early Childhood*, *52*(3), 299-317.

Brigas, C., Ravasco, C., Fonseca, C., Mateus, J., & Bolota, U. (2016). Use of ICT in school context: pupil's, parents' and teachers' perceptions. *ICT in education: Multiple and inclusive perspectives*, 97-113.

Chen, L., Chen, T.-L., Lin, C.-J., & Liu, H.-K. (2018). Preschool teachers' perception of the application of information communication technology (ICT) in Taiwan. *Sustainability*, *11*(1), 114.

Chris, L. A. (2015). Barriers hindering implementation, innovation and adoption of ICT in primary schools in Kenya. *International journal of innovative research and development*, *4*(2), 2278-0211.

Cooper-Kahn, J., & Dietzel, L. (2024). *Late, lost, and unprepared: A parents' guide to helping children with executive functioning*. Taylor & Francis.

Gamez, A. M., Hernandez, R. A., Garcia, A., & Navarro, J. S. (2024). Strategies That Promote Student Success and Wellness Through Parental Involvement and Engagement in K-12. In *Parental Influence on Educational Success and Wellbeing* (pp. 110-129). IGI Global.

Gjelaj, M., Buza, K., Shatri, K., & Zabeli, N. (2020). Digital Technologies in Early Childhood: Attitudes and Practices of Parents and Teachers in Kosovo. *International Journal of Instruction*, *13*(1), 165-184.

Hammond, M. (2014). Introducing ICT in schools in E ngland: Rationale and consequences. *British Journal of Educational Technology*, *45*(2), 191-201.

Kaindio, M. P., & Wagithunu, M. N. (2014). Integrating information communication technology skills in preschool education in Kenya. *Mediterranean Journal of Social Sciences*, *5*(5), 89.

Lestari, A. (2024). *Parents' Involvement In Primary School Online Learning During Covid-19 Pandemic* Universitas Islam Indonesia].

Lestari, T., Herawati, N., Permatasari, E., & Ariningrum, P. (2020). Developmentally Appropriate Digital Practice (DADP): Integration of ICT with game-based self-care learning in early childhood education. In *Borderless Education as a Challenge in the 5.0 Society* (pp. 173-181). Routledge.

Lutalo, F., & Bisaso, S. M. (2020). Information communication technology integration in school systems and management of secondary schools in Nakawa Division, Uganda. *Islamic University Multidisciplinary Journal*, *7*(4), 136-149.

McCloskey, M., Johnson, S. L., Benz, C., Thompson, D. A., Chamberlin, B., Clark, L., & Bellows, L. L. (2018). Parent perceptions of mobile device use among preschool-aged children in rural head start centers. *Journal of nutrition education and behavior*, *50*(1), 83-89. e81.

Mwenje, M., Githui, P., & Mwarari, C. (2020). Assessment of parental involvement in home-based learning activities in public primary schools: A case of children in early years of learning in Nyeri and Nairobi counties, Kenya.

Naik, G., Chitre, C., Bhalla, M., & Rajan, J. (2020). Impact of use of technology on student learning outcomes: Evidence from a large-scale experiment in India. *World Development*, *127*, 104736.

Nikolopoulou, K., Gialamas, V., & Batsouta, M. (2018). Young children's access to and use of ICT at home. *Review of Science, Mathematics and ICT Education*, *4*(1), 25-40.

Papadakis, S., Zaranis, N., & Kalogiannakis, M. (2019). Parental involvement and attitudes towards young Greek children's mobile usage. *International Journal of Child-Computer Interaction*, *22*, 100144.

Pirani, S., & Hussain, N. (2019). Technology is a tool for Learning: Voices of Teachers and Parents of Young Children. *Journal of Education & Social Sciences*, *7*(1), 55-66.

Unicef. (2014). Early childhood development: The key to a full and productive life. *UNICEF: New York, NY, USA*.

Wen, Y., Gwendoline, C. L. Q., & Lau, S. Y. (2021). ICT-supported home-based learning in K-12: A systematic review of research and implementation. *TechTrends*, *65*(3), 371-378.

Yaşar Ekici, F. (2016). Parents' views on the use of technology in the early childhood period. *Journal of Education and Training Studies*.