Jurnal Pedagogi dan Pembelajaran
Volume 7, Number 3, Tahun 2024, pp. 457-468
P-ISSN: 2614-3909 E-ISSN: 2614-3895
Open Access: https://doi.org/10.23887/jp2.v7i3.90470

Analyzing Parental Perceptions of Smartphone Usage in Early Childhood: Educational Potential and Risk Management

Desni Yuniarni[1*], Endang R. Surjaningrum[2], Triana Kesuma Dewi[3]

[1,2,3] Faculty of Psychology, Universitas Airlangga, Surabaya, Indonesia
[1] Faculty of Teacher Training and Education, Universitas Tanjungpura, Pontianak, Indonesia

ARTICLE INFO

Article history:
Received August 05, 2024
Accepted October 17, 2024
Available online October 25, 2024

Kata Kunci:
Anak Usia Dini, Persepsi Orang Tua, Smartphone

Keywords:
Early Childhood, Parents' Perception, Smartphones

ABSTRAK

Penggunaan smartphone *mengalami peningkatan signifikan di berbagai kalangan usia, termasuk anak usia dini. Fenomena ini memunculkan kekhawatiran sekaligus peluang bagi orang tua dalam memanfaatkan teknologi sebagai media stimulasi tumbuh kembang anak. Penelitian ini bertujuan untuk mengeksplorasi persepsi orang tua mengenai manfaat dan dampak negatif penggunaan smartphone bagi anak usia dini serta menganalisis perbedaan persepsi berdasarkan karakteristik demografis orang tua. Penelitian ini menggunakan pendekatan kuantitatif deskriptif dengan analisis komparatif. Teknik pengambilan sampel dilakukan dengan* stratified random sampling*, melibatkan 197 orang tua yang memiliki anak usia 3-6 tahun sebagai responden. Data dikumpulkan melalui kuesioner berskala Likert yang disebarkan secara daring menggunakan Google Forms. Hasil analisis menunjukkan bahwa 65% orang tua menilai* smartphone *dapat berfungsi sebagai media edukasi yang mendukung tumbuh kembang anak, terutama dalam aspek kognitif. Namun, 60% orang tua mengkhawatirkan dampak negatif* smartphone*, khususnya terhadap perkembangan sosial-emosional dan motorik anak. Temuan juga menunjukkan bahwa orang tua dengan tingkat pendidikan tinggi cenderung lebih fokus pada pengendalian risiko penggunaan smartphone dengan menerapkan batasan waktu dan konten, sedangkan orang tua dengan pendidikan menengah lebih menekankan manfaat hiburan yang diberikan* smartphone *kepada anak. Penelitian ini menyimpulkan bahwa pengawasan ketat diperlukan dalam penggunaan* smartphone *pada anak usia dini untuk meminimalkan dampak negatif dan memaksimalkan manfaat edukatifnya.*

ABSTRACT

Smartphone usage has significantly increased across various age groups, including early childhood. This phenomenon presents both concerns and opportunities for parents to utilize technology as a medium for stimulating children's development. This study aims to explore parents' perceptions of the benefits and negative impacts of smartphone usage for young children and to analyze differences in perceptions based on parents' demographic characteristics. The research employs a descriptive quantitative approach with a comparative analysis. The sampling technique used is stratified random sampling, involving 197 parents of kindergarten children aged 3-6 years as respondents. Data were collected through a Likert-scale questionnaire distributed online via Google Forms. The analysis results indicate that 65% of parents perceive smartphones as beneficial educational tools for supporting children's cognitive development. However, 60% of parents express concerns about the negative impacts of smartphone usage, particularly on children's social-emotional and motor development. The findings also reveal that parents with higher education levels are more focused on controlling smartphone usage risks by setting time limits and content restrictions, while parents with middle-level education tend to emphasize the entertainment benefits of smartphones for children. The study concludes that strict supervision of smartphone usage in early childhood is necessary to minimize negative impacts and maximize its educational benefits.

1. INTRODUCTION

The increasing technological advancement is characterized by the increasing involvement of digital devices in daily activities. One of the most widely used digital devices is the smartphone. Smartphones are

Corresponding author
*E-mail addresses: antonpales555@gmail.com (Desni Yuniarni)

used by all age levels, including early childhood. The findings of other research show that 90% of parents stated that the type of digital device that is often used by children aged 4-6 years is a smartphone, where 11% of children aged 4-6 years already have a personal smartphone (Zaini & Soenarto, 2019). The high number of smartphone users among young children is due to the many positive benefits they obtain. There are three categories of purposes for smartphone use in early childhood, namely for (1) entertainment, (2) education, and (3) edutainment (Livingstone, 2003). In line with this opinion, the use of smartphones in early childhood as being for (1) communication, (2) recreation (playing video games), and (3) information (visiting websites) (Johnson, 2011). Based on this, many early childhood children use their smartphones for entertainment purposes, such as playing video games; for education, such as watching videos that teach writing and reading skills; and also for communication, such as video calls with friends or family who are out of town.

Smartphones contain various applications, both online and offline, that can have a positive impact and even a negative impact depending on what applications are used. There are parents who allow their children to use smartphones because they are beneficial for the interests of growth and education (Kazakoff, 2014). In line with the opinion of (Livingstone & Helsper, 2008), which states that although the use of smartphones in early childhood provides a number of benefits, there are also a number of negative risks for them. Smartphones present learning opportunities and risks for children simultaneously (Mutlu-Bayraktar et al., 2018). Smartphone use can be a wonderful experience for children, but it can also be harmful to their development, especially since children learn by observing and imitating the negative behaviours they see on these digital devices (Valkenburg & Karen E, 2001).

Parents try to use digital media for the benefit of their children's education, but on the other hand, they must also ensure that the use of technological media is safe for their children and minimize the negative impact on their children's development (Gür & Türel, 2022). Therefore, many parents feel faced with a dilemmatic situation facing these conditions (Amalia & Setyowati, 2019). The benefits obtained from the use of smartphones for early childhood include improving the development of literacy, mathematics, science, problem solving, and self-efficacy, improving motor skills, fostering creativity, improving children's cognitive abilities, imagination, and developing vocabulary (Bangsawan et al., 2022; Herodotou, 2018; Moon et al., 2019; Shukri & Howes, 2019; Swider-Cios et al., 2023). A number of these positive benefits for children depend on the selection of content that focuses on learning/education for children that is interactive, where children are not only passively watching but also actively involved in the content (Huber et al., 2016).

However, the findings in similar research stated that most parents said that smartphones have more negative impacts on children's development than positive impacts (Rahayu et al., 2021). Parents assume that children should not use smartphones because children use thems more often to play games than to study (Paridawati et al., 2021). In addition, smartphones that are used for a long time and continuously can cause a number of problems in child development, including difficulty socializing with others because they are focused only on using their smartphones, insensitivity to the surrounding environment, irritability, often shouting, unwillingness to interact with their friends, and unwillingness to obey their parents' orders (Aswadi & Lismayanti, 2019; Chusna, 2017). Parents also complain that smartphone use interferes with children's study time and decreases children's learning concentration (Saraswati et al., 2021). In addition, excessive use can cause children to become reclusive, experience sleep disturbances, tend to be alone, exhibit violent behaviour, inhibit creativity, and increase the risk of cyberbullying (Ghofururrohim et al., 2023).

A number of parents who are aware of the negative impact of excessive smartphone use on their children have tried to control it but have not been successful in doing so (Hiniker et al., 2016; Indriyani et al., 2018; Liu et al., 2021; Lubis et al., 2019). They experience confusion in responding to this condition. The role of parents in relation to children's smartphone use is a relatively new research theme (Jiménez-Morales et al., 2020). The involvement of digital technology in everyday life makes parenting more complicated.

2. METHOD

The method used in this research is descriptive quantitative approach with comparative analysis. Descriptive quantitative aims to describe the phenomenon of parents 'perceptions of smartphone use in early childhood based on numerical data while comparative analysis is conducted to identify differences in parents' perceptions based on demographic variables such as education level, age, and occupation. The population of this study is parents who have children aged 3-6 years in kindergartens in Pontianak City. This population was chosen because early childhood is in a critical phase of development, so the impact of technology is significant. The sampling technique used was stratified random sampling. Stratified random sampling was used to ensure proportional representation by age group, education level and parental

occupation. Sample involving 197 parents with kindergarten children aged 3-6 years, from seven kindergartens in Pontianak City using a questionnaire with a Likert Scale in the form of a google form.

A structured questionnaire consisting of three sections, consist of demographics (age, education and occupation). Smartphone benefits using Likert scale 1-5 (1: strongly disagree to 5: strongly agree) to assess aspects such as interactive learning, entertainment and communication. Smartphone risks using Likert scale 1-5 (1: strongly disagree to 5: strongly agree) to assess negative impact such as children's social-emotional, motor development language and cognitive development. Data collection was carried out by providing online questionnaires through google form with the help of teachers in a number of kindergartens in Pontianak city. Before filling out the questionnaire, respondents were given information about the purpose of the study and then parents were asked to fill out a consent form. They were given information about anonymity and confidentiality of their identity and information regarding the use of data that was only used for research purposes. Prior to distribution, the questionnaire was pilot tested on 30 respondents to ensure the validity and reliability of the instrument. The validity test used item-total correlation analysis. The reliability test uses Cronbach's Alpha, with a value of >0.8 considered reliable.

The collected data was analyzed using statistical software such as SPSS or Microsoft Excel. Data were analyzed by descriptive and inferential statistics. Descriptive statistics using mean, median, and standard deviation to describe parents' general perceptions, while frequency distribution to see the proportion of perceptions by benefit and risk categories. Descriptive statistics were used to determine the distribution of parents' perceptions of the benefits and risks of smartphone use for early childhood. Inferential Statistics using T-test to comparing perceptions between two groups, while t-test and ANOVA were used to analyzed differences in perceptions based on demographics (age, education level and parental occupation).

3. RESULT AND DISCUSSION

Result

Parents' Perceptions of the Benefits of Using Smartphones for Early Childhood

The majority of parents believe that smartphones serve as a medium for stimulating children's growth and development (65%), especially in the aspects of cognition, language, creativity, and education in general. The proportion of each part as a percentage can be seen in Figure 1.

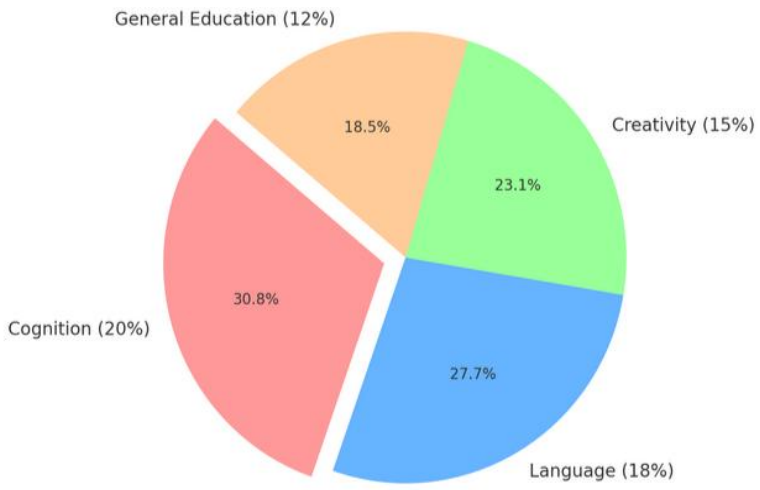

Figure 1. Distribution of Parental Perception about Smartphone Benefits for Children Development

Other parents see smartphones more as a tool to entertain children (35%), especially in in the aspects of cartoon movies, interactive games, video live streaming, music and children's songs. The proportion of each part as a percentage can be seen in Figure 2.

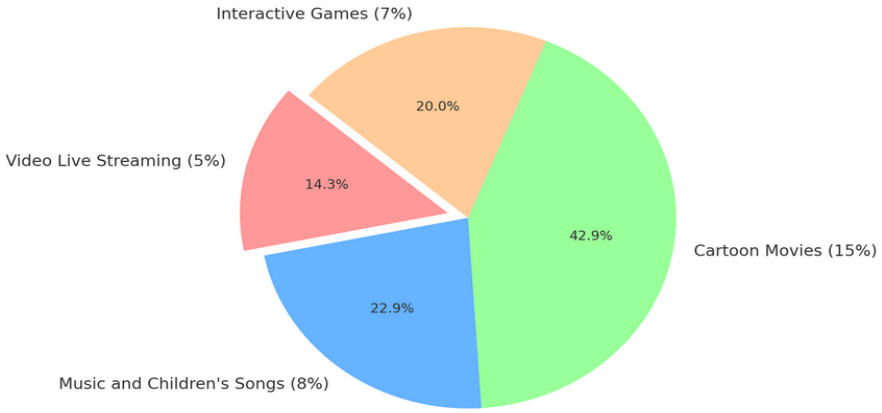

Figure 2. Distribution of types of Entertainment for Early Childhood from Smartphone Usage

Parents' Perceptions of the Risks of Using Smartphones for Early Childhood

The majority of parents (53%) felt that excessive smartphone use can affect children's social-emotional development especially in social isolation, limitations of empathy skills, anxiety and stress and impaired social skills. The proportion of each part as a percentage can be seen in Figure 3.

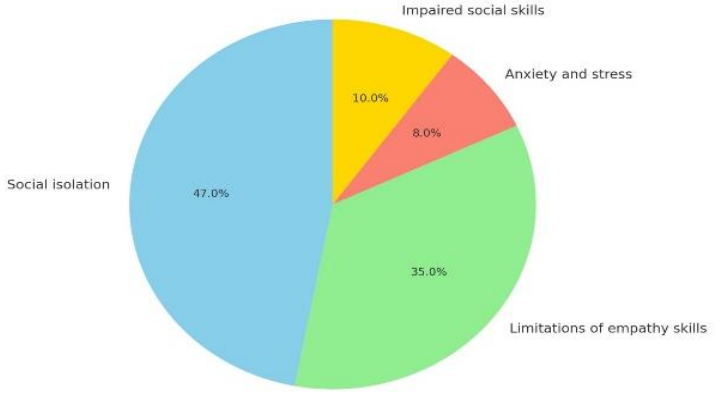

Figure 3. Impact of Excessive Smartphone Use on Children's Social-Emotional Development

Parents felt that excessive smartphone use can affect children's cognitive development (27%) especially in concentration and attention disorders, reduced problem-solving ability, limited cognitive stimulation, decreased memory skills. The proportion of each part as a percentage can be seen in Figure 4.

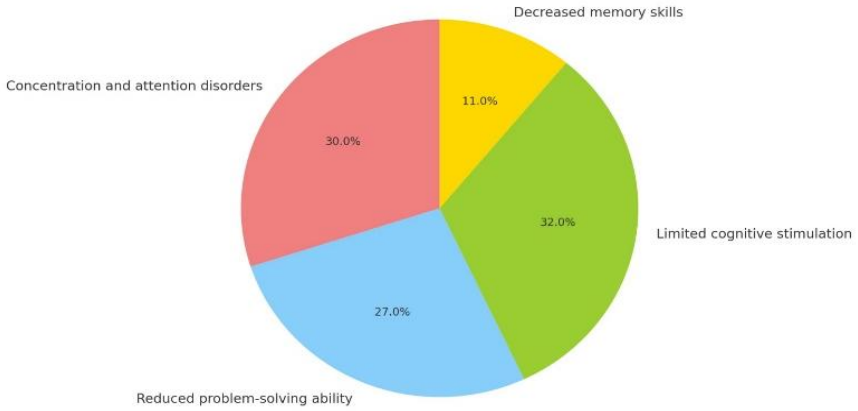

Figure 4. Impact of Excessive Smartphone Use on Children's Cognitive Development

Parents felt that excessive smartphone use can affect children's language development (12%) especially in reduced verbal interaction, limited vocabulary, lack of listening skills, impaired development of speaking skills, effects on written language skills and lack of language use for imaginative play. The proportion of each part as a percentage can be seen in Figure 5.

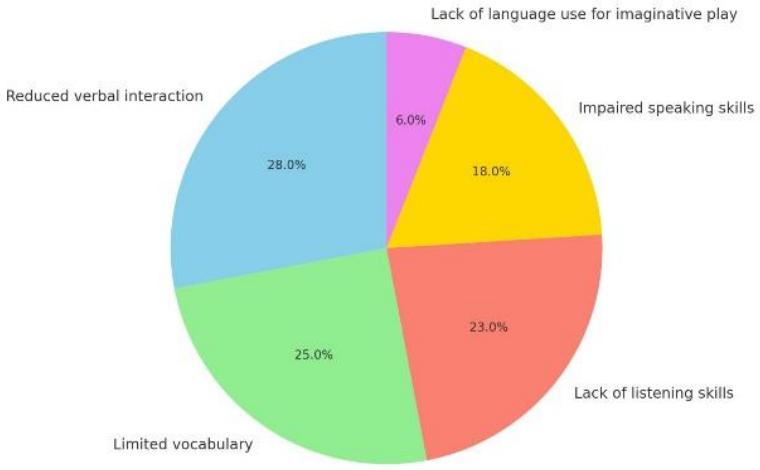

Figure 5. Impact of Excessive Smartphone Use on Children's Language Development

Parents felt that excessive smartphone use can affect children's physical and motoric development (8%) especially in delay in gross motor development, disruption in fine motor skills, poor posture, reduced physical activity, sleep disruptions**.** The proportion of each part as a percentage can be seen in Figure 6.

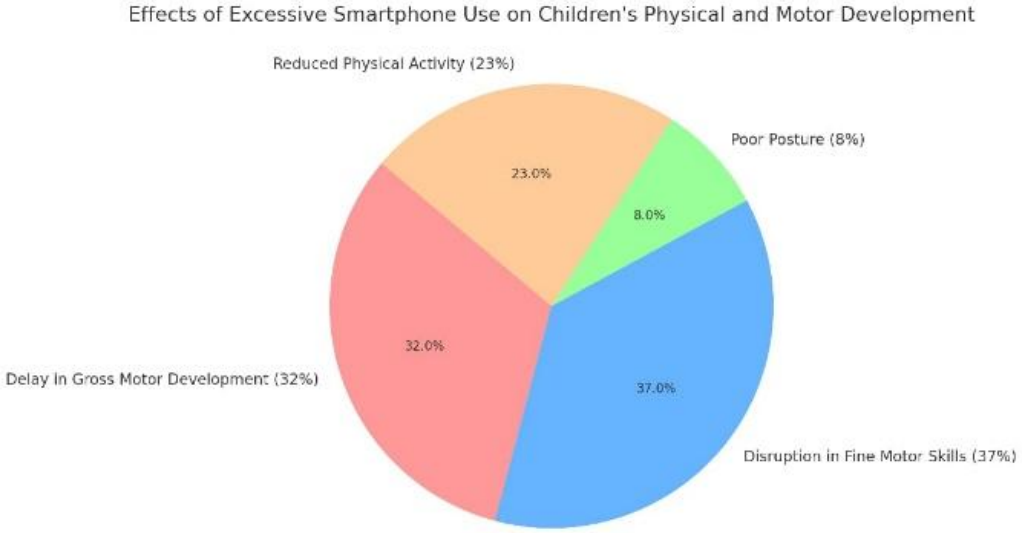

Figure 6. Distribution of Types of Children's Physical and Motoric Development

Parents' Perceptions of Smartphone Use in Early Childhood

A total of 68% of parents think that the use of smartphones in early childhood has more negative impacts on children's development than positive benefits. Meanwhile, 32% of parents stated that the use of smartphones has more positive than negative impacts on children, as illustrated in the Figure 7.

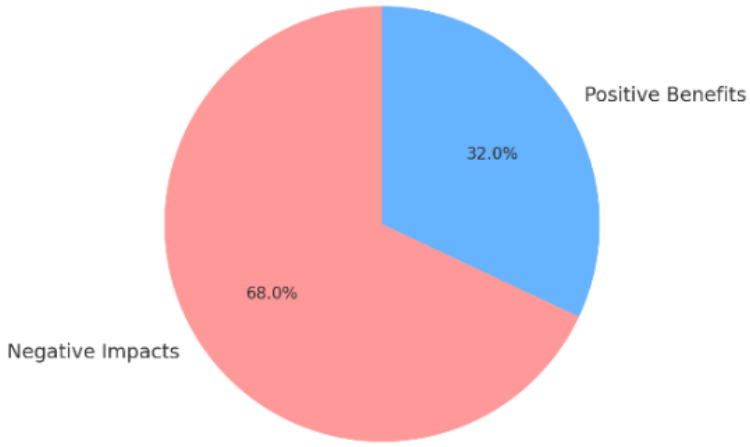

Figure 7. Parental Perception of Smartphone Use in Early Childhood

Differences in Perceptions based on Parents' Demographic Characteristics
Parents' Age Level

Overall in each age group of parents, had a negative perception of smartphone use for children. Parents aged < 30 years old, are relatively more optimistic about the benefits of smartphone use, with 40% believing the benefits outweigh the negative impacts. However, a majority (60%) still perceive that the negative impacts are greater than the benefits. Parents aged 30–40 years old are concern over negative impacts increases, with 70% believing that smartphones have more negative consequences than benefits for early childhood development. Only 30% consider the benefits to outweigh the negative impacts. Parents aged >40 years old are exhibit the highest level of concern, with 75% believing that the negative impacts of smartphone use outweigh the benefits. Just 25% of parents in this group think that smartphones provide more benefits than harm. The overall picture can be seen in the Figure 8.

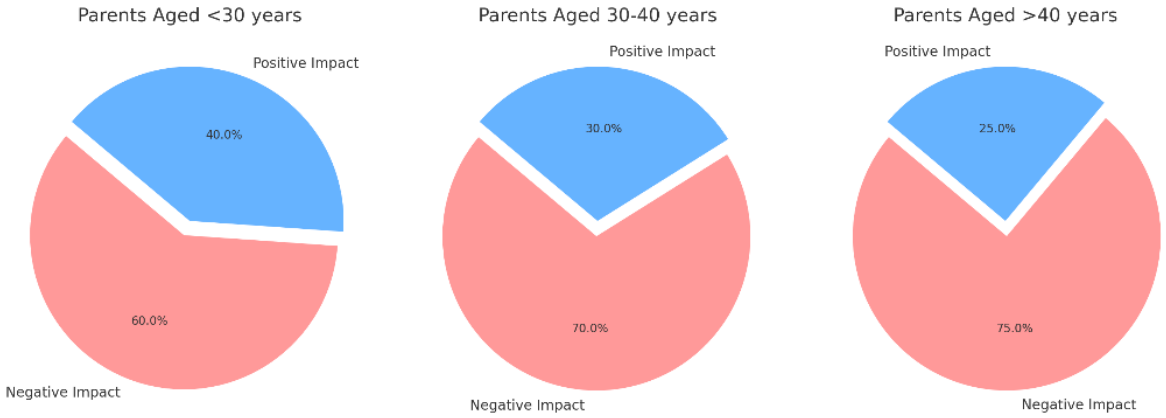

Figure 8. Parental Perception of Smartphone Use Based on Parent's Age Level

Parents' Education Level

Parents with high school education or lower are concerned about the positive impacts of smartphone use on early childhood development (58%), while only 42% of these parents believe that smartphones provide more harm than benefits. Among parents with higher education, such as a diploma or undergraduate degree, concerns about negative impacts are slightly lower but still dominant, with 63% expressing that the harms outweigh the benefits. About 37% of these parents see smartphones as beneficial tools that outweigh their potential drawbacks. However, the vast majority (75%) of parents with a Postgraduate degree were very concerned about the negative impact of smart phone use on early childhood development. Only a small proportion (25%) of these parents believe that smartphones provide more benefits than harms. The overall picture can be seen in the **Figure 9**.

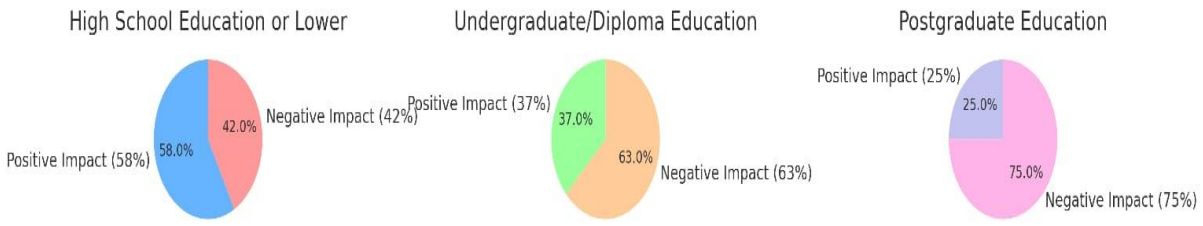

Figure 9. Parental Perception of Smartphone Use Based on Parent's Education Level

Parents' Type of Work

Parents who have administrative or office jobs are concerned about the negative impact of their children's smartphone use at 52%. They stated that smartphones may do more harm than good to a child's development. However, 48% recognise that smartphones can be beneficial, perhaps as an educational or entertainment tool. Meanwhile, parents who work in education or research have the view that smartphone use has more negative impacts on children's development (69%) than positive benefits (31%). However, parents with IT jobs believe that the benefits outweigh the negative impacts (62%) and optimistic about the benefits of smartphone use in early childhood. They tend to be more optimistic about the benefits of smartphones, which may reflect their familiarity with technology. Parents in Healthcare Professions (75%), are highly concerned about the negative impacts of smartphone use. 25% are believe that smartphones provide more benefits than harm. Other occupations tend to see the benefits to their children from smartphone use (50%) as roughly equal to the negative impacts (50%), depending on the degree of supervision provided by parents. The overall picture can be seen in the Figure 10.

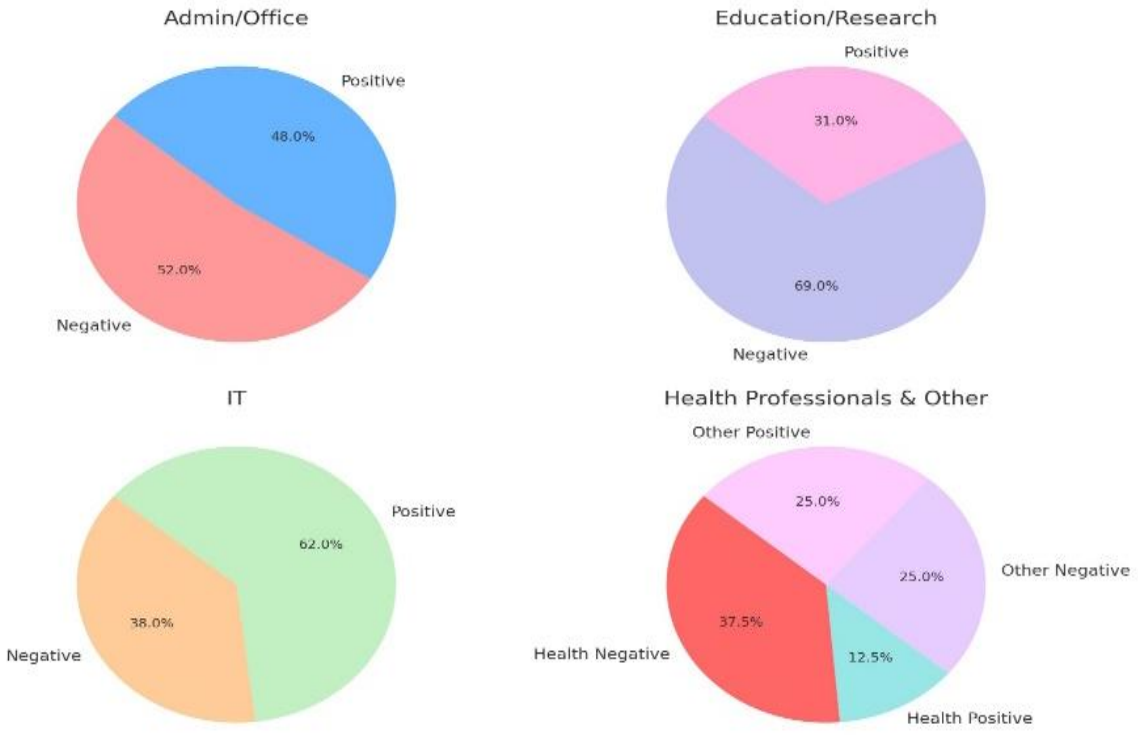

Figure 10. Parental Perception of Smartphone Use Based on Type of Parental Occupation

Discussion

Parents' Perceptions of the Benefits of using Smartphones for Early Childhood

The majority of parents believe that smartphones serve as a medium for stimulating children's growth and development (65%), especially in the aspects of cognition, language, creativity, and education in general. This is because most parents see the educational value of apps such as counting, reading or language learning games that can stimulate children's thinking skills. Video chatting apps can help children communicate with parents, drawing apps and storytelling apps can nurture creativity, vocabulary apps can help children learn new words, and concepts of science and mathematics can also be explained to children

using appropriate apps (Yadav & Chakraborty, 2022). When used appropriately, smartphone may be an engaging tool that helps children develop in all areas according to their developmental stages (Andriani, 2023). Smartphone can support or inhibition of play and creativity for children (Marsh et al., 2018). The positive impact of using smartphones for children is that it facilitates communication, makes it easier for children to learn and can be used as entertainment media for children (Paridawati et al., 2021). Other parents see smartphones more as a tool to entertain children (35%), especially in reducing boredom or calming them in certain situations. The smartphone usage for children are used for playing and entertainment needs (video games, entertainment applications, social media) (Cho & Lee, 2017; Srinahyanti et al., 2019). Smartphone are used by children to play, access entertainment such as video games and other entertainment applications, and use social media.

Parents' Perceptions of the Risks of Using Smartphones for Early Childhood

The majority of parents (53%) felt that excessive smartphone use can affect children's social-emotional development especially in social isolation, limitations of empathy skills, anxiety and stress and impaired social skills. Spending too much time on smartphones, especially on gaming or social media, may lead to social withdrawal. Children may become more comfortable in the digital world than in real-life interactions. Children prefer to use their smartphones instead of playing with their peers (Trinika, 2015). Smartphone use in children leads to social isolation (Ardiyani et al., 2021). Excessive smartphone use can reduce face-to-face interactions with peers or family members, hindering the development of communication and empathy skills. Screen time when children playing with smartphone has a negative effect on children's emotional and behavioural health (Liu et al., 2021). Children may face challenges in emotional regulation because they grow accustomed to instant gratification from smartphones, which lowers their frustration tolerance. It can be concluded that smartphones can have negative impacts on children's social-emotional development, especially when their usage is not well-regulated.

Parents felt that excessive smartphone use can affect children's cognitive development (27%) especially in concentration and attention disorders, reduced problem solving ability, limited cognitive stimulation, decreased memory skills. Prolonged use of smartphones will have implications for children's cognitive development (Axelsson et al., 2022). Smartphones provide constant access to fast-paced, engaging content, which may reduce children's ability to focus on slower or more demanding tasks. Furthermore, another research has found that an early-age introduction to screen media in combination with high levels of screen time and the absence of interactions with caregivers during usage is associated with less-than-optimal brain and cognitive development (Hutton et al., 2020). Excessive reliance on digital devices for answers or entertainment might limit opportunities for children to engage in creative thinking or independent problem-solving. In line with the opinion of related research states that inappropriate screen media exposure will be negatively affects children's cognitive development (Supanitayanon et al., 2020). Overuse of smartphones can interfere with the development of planning, prioritization, and time management skills.

Parents felt that excessive smartphone use can affect children's language development (12%) especially in reduced verbal interaction, limited vocabulary, lack of listening skills, impaired development of speaking skills, effects on written language skills and lack of language use for imaginative play. Results from the research, encourage parents to select non-digital toys rather than devices to promote language development in children (Ewin et al., 2021). Some apps and videos use overly simplified language, which may not challenge children to expand their vocabulary. Furthermore, the fast-paced nature of digital content can make it difficult for children to focus on slower, more nuanced verbal communication, leading to weaker listening comprehension. The findings of the research indicate that pre-schoolers largely engage in entertainment content and this has implications for language development (Axelsson et al., 2022). When children spend excessive time on smartphones, especially in passive consumption like watching videos, they may miss out on vital verbal exchanges with parents and peers that support language acquisition. Impact of screen time is speech and language development in preschool children (Al Hosani et al., 2023). Watching videos or using apps that do not require active participation or responses can delay speech milestones, as children do not practice speaking or listening actively. Children engrossed in smartphones may miss opportunities for meaningful verbal exchanges with parents and caregivers, which are crucial for developing vocabulary and grammar skills.

Parents felt that excessive smartphone use can affect children's physical and motoric development (8%) especially in delay in gross motor development, disruption in fine motor skills, poor posture, reduced physical activity, sleep disruptions. Smartphone use can negatively impact children's motor development (Chusna, 2017). Prolonged use of smartphones often results in a sedentary lifestyle, reducing opportunities for physical exercise and gross motor skill development, such as running, jumping, and climbing. Excessive smartphone use can affect the development of motor skills, such as gross skills (such as walking and

running) and fine skills (such as writing and drawing) (Fernald et al., 2017). Prolonged screen time encourages inactivity, which can hinder the development of gross motor skills (e.g., running, jumping, balancing). The relationship between prolonged smartphone use and children's motor development is not always direct, but is influenced by the context of use and the role of parents (Tigor & Simbolon, 2023).

Activities like tapping or swiping screens may support certain aspects of fine motor skills but lack the variety needed for comprehensive development, such as grasping objects, holding a pencil, or tying shoelaces. Prolonged smartphone use often replaces physical activities like running, jumping, or climbing, which are essential for body coordination and balance. Parents who actively monitor the duration of smartphone use and ensure access to age-appropriate content can mitigate its negative effects on motor development. Based on all the explanations above, it can be concluded that excessive use of gadgets has a huge influence on children's development, both in terms of psychology, physical and social development (Mayuni & Amanda, 2023). With proper guidance, negative effects can be minimized, and smartphones can even be used positively to support certain aspects of children's development.

Parents' Perceptions of Smartphone Use in Early Childhood

A total of 68% of parents think that the use of smartphones in early childhood has more negative impacts on children's development than positive benefits. Meanwhile, 32% of parents stated that the use of smartphones has more positive than negative impacts on children. The results of similar research showed that the prevalent use of smartphones by pre-schoolers is generally not for educational purposes but for playing games, raising concerns for parents. The primary activity for children using smartphones was playing games, which are often entertaining but not necessarily designed to support learning or educational development. The research also indicates that children are not engaging with apps or content that promote learning, such as educational games, language development tools, or interactive storytelling (Genc, 2014).

This is in line with similar research which states that parents assume that excessive use of technology can have negative effects on their children's cognitive and social development, as well as on family relationships. It may reduce attention span, impair memory, and limit critical thinking due to overreliance on passive consumption and digital tools. Smartphone use can hinder face-to-face interactions, cause overreliance on digital communication, and lead to social isolation. Moreover, it may decrease quality family time, cause conflicts over screen time limits, and create negative habits if parents model excessive use (Nelissen & Van den Bulck, 2018).

Parents think active play is beneficial for many health and developmental outcomes, such as imagination, fun and socialisation. There are risks of excessive smartphone use in children including habit formation, inappropriate content, impacts on cognitive abilities and social development that are negative and detrimental to children's health (Hinkley & McCann, 2018). Active play encourages children to use their creativity, invent new games, and explore ideas, which supports cognitive flexibility and problem-solving skills. Physical activities provide enjoyment while improving fitness, strength, and motor skills, reducing the risk of sedentary-related health issues like obesity. Through group play, children learn to communicate, share, and collaborate, developing essential social and emotional skills. All of these benefits are not obtained by children playing with smartphones. By emphasizing active play and carefully managing smartphone use, parents can support their children's holistic development while minimizing potential negative impacts.

Differences in Perceptions based on Parents' Demographic Characteristics

Overall, in each age group of parents, had a negative perception of smartphone use for children. Parents aged < 30 years old, are relatively more optimistic about the benefits of smartphone use, with 40% believing the benefits outweigh the negative impacts. However, a majority (60%) still perceive that the negative impacts are greater than the benefits. Parents aged 30–40 years old are concern over negative impacts increases, with 70% believing that smartphones have more negative consequences than benefits for early childhood development. Only 30% consider the benefits to outweigh the negative impacts. Parents aged >40 years old are exhibit the highest level of concern, with 75% believing that the negative impacts of smartphone use outweigh the benefits. Just 25% of parents in this group think that smartphones provide more benefits than harm.

Parents with high school education or lower are concerned about the positive impacts of smartphone use on early childhood development (58%), while only 42% of these parents believe that smartphones provide more harm than benefits. Parents who have a low educational background, are not aware of their duty to control the use of smartphones or they lack the ability to take good care of their children (Cho & Lee, 2017). Among parents with higher education, such as a diploma or undergraduate degree, concerns about negative impacts are slightly lower but still dominant, with **63%** expressing that the harms outweigh the benefits. About **37%** of these parents see smartphones as beneficial tools that outweigh their potential drawbacks. However, the vast majority (75%) of parents with a Postgraduate

degree were very concerned about the negative impact of smart phone use on early childhood development. Only a small proportion (25%) of these parents believe that smartphones provide more benefits than harms. This is in line with the opinion of Braveman et al. (2005) which states that parents who have a higher level of education have better capacity, skills and understanding of the limits of smartphone use in children. A number of studies report that parents who have a high level of education (Bachelor's degree) will limit their children's smartphone use than those with a low level of education (maximum high school graduation) (Mantziki et al., 2016; Valkenburg et al., 2012).

Parents who have administrative or office jobs are concerned about the negative impact of their children's smartphone use at 52%. They stated that smartphones may do more harm than good to a child's development. However, 48% recognise that smartphones can be beneficial, perhaps as an educational or entertainment tool. Meanwhile, parents who work in education or research have the view that smartphone use has more negative impacts on children's development (69%) than positive benefits (31%). However, parents with IT jobs believe that the benefits outweigh the negative impacts (62%) and optimistic about the benefits of smartphone use in early childhood. They tend to be more optimistic about the benefits of smartphones, which may reflect their familiarity with technology. Parents in Healthcare Professions (75%), are highly concerned about the negative impacts of smartphone use. 25% are believe that smartphones provide more benefits than harm. Other occupations tend to see the benefits to their children from smartphone use (50%) as roughly equal to the negative impacts (50%), depending on the degree of supervision provided by parents

4. CONCLUSION

The results showed that 65% of parents considered smartphones can be a medium for stimulating children's growth and development and 35% considered smartphones can provide entertainment for children. 60% of parents were concerned about the negative impact on children's social-emotional and motor development and 40% were concerned about the negative impact on children's language and cognitive development. The findings of this study show that the majority of parents are more concerned about negative impacts, especially on children's social-emotional and physical development, where the educational benefits of smartphones are recognized, but parents realized that without supervision, negative impacts are more dominant. Parents with higher education levels tend to focus more on risk control, while parents with secondary education levels emphasize the entertainment benefits. The implication of this study is the existence of a parenting programmed to educate the wise use of technology in terms of limiting the duration, frequency and type of content that can be accessed by children as well as parental assistance.

5. ACKNOWLEDGE

The research team would like to thank all participants in this study and other parties who have helped, facilitated and were involved in this study.

6. REFERENCES

Al Hosani, S. S., Darwish, E. A., Ayanikalath, S., AlMazroei, R. S., AlMaashari, R. S., & Wedyan, A. T. (2023). Screen time and speech and language delay in children aged 12–48 months in UAE: a case–control study. *Middle East Current Psychiatry*, *30*(1). https://doi.org/10.1186/s43045-023-00318-0

Amalia, S., & Setyowati, S. (2019). Persepsi Orang Tua Terhadap Penggunaan Gadget Pada Anak Usia Dini Di Tk Surabaya. *PG PAUD Universitas Negeri Surabaya*. https://ejournal.unesa.ac.id/index.php/paud-teratai/article/view/27946/25568

Andriani, J. (2023). The Influence Of Smartphones On Child Development: A Psychological And Educational Analysis. *Jurnal Ikhtibar Nusantara Vol*, *1*(333), 149–160. https://doi.org/10.62901/j-ikhsan.v3i2.137

Ardiyani, I. D., Setiawati, Y., & Hsieh, Y.-T. (2021). Education For Parents Of Children With Gadget Addiction. *Jurnal Berkala Epidemiologi*, *9*(3), 221–230. https://doi.org/10.20473/jbe.v9i32021.221

Aswadi, D., & Lismayanti, H. (2019). Dampak Penggunaan Smartphone terhadap Pendidikan Karakter Anak di Era Milenial. *STILISTIKA: Jurnal Bahasa, Sastra, Dan Pengajarannya*, *4*(1), 89–98. https://doi.org/10.33654/sti.v4i1.970

Axelsson, E. L., Purcell, K., Asis, A., Paech, G., Metse, A., Murphy, D., & Robson, A. (2022). Preschoolers' engagement with screen content and associations with sleep and cognitive development. *Acta Psychologica*, *230*(March), 103762. https://doi.org/10.1016/j.actpsy.2022.103762

Bangsawan, I., Ridwan, R., & Fauziyah, N. (2022). Pengaruh Gadget Terhadap Perkembangan Kognitif Anak

Usia Dini. *Jurnal Pendidikan Anak*, *8*(1), 31–39. https://doi.org/10.23960/jpa.v8n1.24067

Braveman, P. A., Cubbin, C., Egerter, S., Chideya, S., Marchi, K. S., Metzler, M., & Posner, S. (2005). Socioeconomic Status in Health Research. *Jama*, *294*(22), 2879. https://doi.org/10.1001/jama.294.22.2879

Cho, K. S., & Lee, J. M. (2017). Influence of smartphone addiction proneness of young children on problematic behaviors and emotional intelligence: Mediating self-assessment effects of parents using smartphones. *Computers in Human Behavior*, *66*, 303–311. https://doi.org/10.1016/j.chb.2016.09.063

Chusna, P. A. (2017). Pengaruh Media Gadget Pada Perkembangan Karakter Anak. *Dinamika Penelitian: Media Komunikasi Sosial Keagamaan*, *vol 17*(no 2), 318. https://doi.org/10.21274/dinamika.2017.17.2.315-330

Ewin, C. A., Reupert, A., McLean, L. A., & Ewin, C. J. (2021). Mobile devices compared to non-digital toy play: The impact of activity type on the quality and quantity of parent language. *Computers in Human Behavior*, *118*(November 2020), 106669. https://doi.org/10.1016/j.chb.2020.106669

Fernald, L. C. H., Prado, E., Kariger, P., & Raikes, A. (2017). A Toolkit for Measuring Early Childhood Development in Low- and Middle-Income Countries. International Bank for Reconstruction and Development/The World Bank. *The Strategic Impact Evaluation Fund, the World Bank*. https://hdl.handle.net/20.500.12799/5723

Genc, Z. (2014). Parents' Perceptions about the Mobile Technology Use of Preschool Aged Children. *Procedia - Social and Behavioral Sciences*, *146*, 55–60. https://doi.org/10.1016/j.sbspro.2014.08.086

Ghofururrohim, N. M., Wicaksono, R. N., & Faristiana, A. R. (2023). Pengaruh Smartphone Terhadap Anak Usia Dini. *Education : Jurnal Sosial Humaniora Dan Pendidikan*, *3*(2), 129–146. https://doi.org/10.51903/education.v3i2.340

Gür, D., & Türel, Y. K. (2022). Parenting in the digital age: Attitudes, controls and limitations regarding children's use of ICT. *Computers and Education*, *183*(February), 104504. https://doi.org/10.1016/j.compedu.2022.104504

Herodotou, C. (2018). Young children and tablets: A systematic review of effects on learning and development. *Journal of Computer Assisted Learning*, *34*(1), 1–9. https://doi.org/10.1111/jcal.12220

Hiniker, A., Suh, H., Cao, S., & Kientz, J. A. (2016). Screen Time Tantrums. *The 2016 CHI Conference on Human Factors in Computing Systems*, 648–660. https://doi.org/10.1145/2858036.2858278

Hinkley, T., & McCann, J. R. (2018). Mothers' and father's perceptions of the risks and benefits of screen time and physical activity during early childhood: A qualitative study. *BMC Public Health*, *18*(1), 1–8. https://doi.org/10.1186/s12889-018-6199-6

Huber, B., Tarasuik, J., Antoniou, M. N., Garrett, C., Bowe, S. J., & Kaufman, J. (2016). Young children's transfer of learning from a touchscreen device. *Computers in Human Behavior*, *56*, 56–64. https://doi.org/10.1016/j.chb.2015.11.010

Hutton, J. S., Dudley, J., Horowitz-Kraus, T., Dewitt, T., & Holland, S. K. (2020). Associations between Screen-Based Media Use and Brain White Matter Integrity in Preschool-Aged Children. *JAMA Pediatrics*, *174*(1), 1–10. https://doi.org/10.1001/jamapediatrics.2019.3869

Indriyani, M., Sofia, A., & Anggraini, G. F. (2018). Persepsi Orang Tua terhadap Penggunaan Gadget pada Anak Usia Dini. *INDONESIAN JOURNAL OF EARLY CHILDHOOD ISSUES*, *1*(1). https://jurnal.fkip.unila.ac.id/index.php/IJECI/article/view/16887/12048

Jiménez-Morales, M., Montaña, M., & Medina-Bravo, P. (2020). Childhood use of mobile devices: Influence of mothers' socio-educational level. *Comunicar*, *28*(64), 19–26. https://doi.org/10.3916/C64-2020-02

Johnson, G. M. (2011). Self-Esteem and Use of the Internet among Young. *International Journal of Psychological Studies*, *3*(2), 48–53. https://doi.org/10.5539/ijps.v3n2p48

Kazakoff, E. R. (2014). Toward a theory-predicated definition of digital literacy for early childhood. *Journal of Youth Development*, *9*(1), 41–58. https://doi.org/10.5195/jyd.2014.71

Liu, W., Wu, X., Huang, K., Yan, S., Ma, L., Cao, H., Gan, H., & Tao, F. (2021). Early childhood screen time as a predictor of emotional and behavioral problems in children at 4 years: a birth cohort study in China. *Environmental Health and Preventive Medicine*, *26*(1), 1–9. https://doi.org/10.1186/s12199-020-00926-w

Livingstone, S. (2003). Children's use of the Internet: Reflections on the emerging research agenda. *New Media and Society*, *5*(2), 147–166. https://doi.org/10.1177/1461444803005002001

Livingstone, S., & Helsper, E. J. (2008). Parental mediation of children's internet use. *Journal of Broadcasting and Electronic Media*, *52*(4), 581–599. https://doi.org/10.1080/08838150802437396

Lubis, H., Rosyida, A. H., & Solikhatin, N. H. (2019). Pola Asuh Efektif Di Era Digital. *PLAKAT (Pelayanan*

Kepada Masyarakat), *1*(2), 102. https://doi.org/10.30872/plakat.v1i2.2967

Mantziki, K., Renders, C. M., Vassilopoulos, A., Radulian, G., Borys, J., Plessis, H., Gregório, M. J., Graça, P., Henauw, S. De, Handjiev, S., Visscher, T. L. S., & Seidell, J. C. (2016). Inequalities in energy-balance related behaviours and family environmental determinants in European children : changes and sustainability within the EPHE evaluation study. *International Journal for Equity in Health*, 1–13. https://doi.org/10.1186/s12939-016-0438-1

Marsh, J., Plowman, L., Yamada-Rice, D., Bishop, J., Lahmar, J., & Scott, F. (2018). Play and creativity in young children's use of apps. *British Journal of Educational Technology*, *49*(5), 870–882. https://doi.org/10.1111/bjet.12622

Mayuni, R., & Amanda, S. T. (2023). The Influence Of Gadgets In Student Learning Development. *International Journal of Students Education*, *1*(2), 151–157. https://doi.org/10.62966/ijose.v1i2.399

Moon, J. H., Cho, S. Y., Lim, S. M., Roh, J. H., Koh, M. S., Kim, Y. J., & Nam, E. (2019). Smart device usage in early childhood is differentially associated with fine motor and language development. *Acta Paediatrica, International Journal of Paediatrics*, *108*(5), 903–910. https://doi.org/10.1111/apa.14623

Mutlu-Bayraktar, D., Yılmaz, Ö., & İnan-Kaya, G. (2018). Digital Parenting: Perceptions on Digital Risks. *Kalem Uluslararasi Egitim ve Insan Bilimleri Dergisi*, *14*(1), 137–163. https://doi.org/10.23863/kalem.2018.96

Nelissen, S., & Van den Bulck, J. (2018). When digital natives instruct digital immigrants: active guidance of parental media use by children and conflict in the family. *Information Communication and Society*, *21*(3), 375–387. https://doi.org/10.1080/1369118X.2017.1281993

Paridawati, I., Daulay, M. I., & Amalia, R. (2021). Persepsi Orangtua Terhadap Penggunaan Smartphone pada Anak Usia Dini di Desa Indrasakti Kecamatan Tapung Kabupaten Kampar. *Journal Of Teacher Education*, *2*(2), 28–34. https://doi.org/10.3100/jote.v2i2.1329

Rahayu, N. S., Elan, E., & Mulyadi, S. (2021). Analisis penggunaan gadget pada anak usia dini. *Jurnal PAUD Agapedia*, *5*(2), 202–210. https://doi.org/10.17509/jpa.v5i2.40743

Saraswati, S. W. E., Setiawan, D., & Hilyana, F. S. (2021). Dampak Penggunaan Smartphone pada Perilaku Anak Di Desa Muktiharjo Kabupaten Pati. *WASIS : Jurnal Ilmiah Pendidikan*, *2*(2), 96–102. https://doi.org/10.24176/wasis.v2i2.6432

Shukri, S. R. M., & Howes, A. (2019). Children adapt drawing actions to their own motor variability and to the motivational context of action. *International Journal of Human Computer Studies*, *130*, 152–165. https://doi.org/10.1016/j.ijhcs.2019.06.004

Srinahyanti, S., Wau, Y., Manurung, I., & Arjani, N. (2019). Influence of Gadget: A Positive and Negative Impact of Smartphone Usage for Early Child. *ACEIVE*. https://doi.org/10.4108/eai.3-11-2018.2285692

Supanitayanon, S., Trairatvorakul, P., & Chonchaiya, W. (2020). Screen media exposure in the first 2 years of life and preschool cognitive development: a longitudinal study. *Pediatric Research*, *88*(6), 894–902. https://doi.org/10.1038/s41390-020-0831-8

Swider-Cios, E., Vermeij, A., & Sitskoorn, M. M. (2023). Young children and screen-based media: The impact on cognitive and socioemotional development and the importance of parental mediation. *Cognitive Development*, *66*(February), 101319. https://doi.org/10.1016/j.cogdev.2023.101319

Tigor, M., & Simbolon, A. P. H. (2023). The Impact of Smartphone Use on Students' Motor Skills and Emotional Well-being: A Comprehensive Study. *Jurnal Ilmu Pendidikan Dan Humaniora*, *12*(3), 152–166. https://doi.org/10.35335/jiph.v12i3.8

TRINIKA, Y. (2015). Pengaruh Penggunaan Gadget Terhadap Perkembangan Psikososial Anak Usia Prasekolah (3-6 Tahun) di TK Swasta Kristen Immanuel Tahun Ajaran 2014-2015. *Jurnal ProNers*, *3*(1). https://doi.org/10.26418/jpn.v3i1.11001

Valkenburg, P. M., & Karen E, S. (2001). Children's Positive and Negative Experiences With the Internet: An Exploratory Survey. *Communication Research*, *28*(5), 652–675. https://doi.org/10.1177/009365001028005004

Valkenburg, P. M., Piotrowski, J. T., & Hermanns, J. (2012). Developing and validating the perceived parental media mediation scale : A self-determination perspective. *Learning, Media & Technology*, *39*, 445–469. https://doi.org/10.1111/hcre.12010

Yadav, S., & Chakraborty, P. (2022). Child–smartphone interaction: relevance and positive and negative implications. *Universal Access in the Information Society*, *21*(3), 573–586. https://doi.org/10.1007/s10209-021-00807-1

Zaini, M., & Soenarto, S. (2019). Persepsi Orangtua Terhadap Hadirnya Era Teknologi Digital di Kalangan Anak Usia Dini. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *3*(1), 254. https://doi.org/10.31004/obsesi.v3i1.127.