South African Journal of Childhood Education
ISSN: (Online) 2223-7682, (Print) 2223-7674

Adaptation to digital parenting in a pandemic: A case study of parents within higher education

Authors:
Hardiyanti Pratiwi[1]
Nor I. Hasanah[1]
Sigit Purnama[2]
Maulidya Ulfah[3]
Aip Saripudin[3]

Affiliations:
[1]Department of Islamic Early Childhood Education, Faculty of Education and Teachers Training, UIN Antasari, Banjarmasin, Indonesia

[2]Department of Islamic Early Childhood Education, Faculty of Tarbiyah and Education, UIN Sunan Kalijaga, Yogyakarta, Indonesia

[3]Department of Early Childhood Islamic Education, Faculty of Tarbiyah and Teacher Training, Institut Agama Islam Negeri Syekh Nurjati Cirebon, Cirebon, Indonesia

Corresponding author:
Sigit Purnama,
sigit.purnama@uin-suka.ac.id

Dates:
Received: 14 Dec. 2021
Accepted: 19 July 2022
Published: 26 Oct. 2022

How to cite this article:
Pratiwi. H., Hasanah, N.I., Purnama, S., Ulfah, M. & Saripudin, A., 2022, 'Adaptation to digital parenting in a pandemic: A case study of parents within higher education', *South African Journal of Childhood Education* 12(1), a1166. https://doi.org/10.4102/sajce.v12i1.1166

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Background: Using digital tools with children during the pandemic has positive and negative impacts. However, we must investigate how parents with higher education qualifications best apply digital parenting.

Aim: The aim of this article was to explore the practice of digital parenting with parents with higher education backgrounds, the digital tools used and the parents' motivation during the pandemic.

Setting: This research was conducted with parents who work as university lecturers in Banjarmasin, South Kalimantan, Indonesia.

Methods: This study involved 27 lecturers with children in early childhood education. Data were collected using structured interview techniques and analysed using presentation, reduction and verification techniques. The validity of the data was ensured through the triangulation of sources and the extension of the research time.

Results: The results show that applying restrictive mediation through various regulations in using smartphones coupled with authoritative parenting is the leading choice for parents. During the pandemic, parents give children more freedom and time to use smartphones; therefore, they have to adjust their parenting patterns to counteract the negative impacts caused by these digital devices. However, the lack of parenting support, many work schedules and limited interaction time with children can affect this parenting style.

Conclusion: Parents can implement a successful digital parenting transition during a pandemic. Support, motivation, communication, supervision, rules and restrictions imposed on children to continue to use smartphones according to their age are important factors to ensure parenting success in the digital era.

Keywords: early childhood; digital parenting; smartphone; level of education; case study.

Introduction

The use of mobile touch screen devices, one of which is smartphones, is becoming increasingly widespread among children (Konok, Bunford & Miklósi 2020; Livingstone et al. 2017; Moon & Bai 2020; Purnama et al. 2021; Rideout 2017). Children's contact with digital devices is unavoidable. Children are constantly exposed to digital devices at home, on the go or at school (OECD 2010). Especially during the pandemic, with children's limited social contacts, access to digital devices has increased (Majumdar, Biswas & Sahu 2020; Pratiwi 2020). This condition also occurs in Indonesia. One of our studies found a significant increase in the duration and intensity of smartphone use by children (Pratiwi 2020). Smartphone use and spending time online can result in potential risks and benefits. However, this increase in smartphone use also triggers high digital risks for children, such as exposure to violent content, sexual content and cyberbullying, to the disruption of several aspects of child development (Browne, Thompson & Madigan 2020; McArthur et al. 2022; Rukmana et al. 2021). However, the positive impact of digital devices can be maximised if parents apply active media mediation with their children (Cabello-Hutt, Cabello & Claro 2018; Livingstone et al. 2017; Sciacca et al. 2022). Parents must adjust their digital parenting style to avoid the negative impacts of using smartphones and maximise their positive potential for child development.

Digital parenting is the effort and practice of parents in directing, regulating and supporting their children's digital activities in the digital world (Benedetto & Ingrassia 2021). Before implementing

various digital parenting strategies, parents must first improve their smartphone use habits. Children always look to their parents as role models, including in using smartphones. The more often parents use smartphones in front of their children, the more often children demand to use smartphones (Lemish, Elias & Floegel 2020). The microsystem, which includes family, peers and school, directly influences children's behaviour, development and socialisation. The family, particularly the parents, influences a child's conduct, especially during the early developmental phases (Laible, Carlo & Raffaelli 2000; Lunkenheimer et al. 2020). Parents, for example, play an essential role in creating a home environment, encouraging certain behaviours while prohibiting others, such as smartphone use. The attitudes and behaviours of parents towards screen time will influence the habits and lives of their children (Xu, Wen & Rissel 2015). Parenting entails shaping and reinforcing particular actions and building a socio-emotional environment that might influence a child's behaviour (Iruka et al. 2018). Parenting styles are intimately tied to children's development and conduct. A parenting style influences the dynamic environment in which parents raise their children (Darling & Steinberg 2017).

Parents' habits are influenced by their knowledge and perception. In this case, parents' perceptions, values and knowledge of the use of smartphones by children can affect parenting styles (Schmuck et al. 2021; Vaiopoulou et al. 2021). Many parents use smartphones when caring for their children or interacting and playing with them (Christakis 2018; Wolfers et al. 2020). More than that, parents often use smartphones as babysitters to keep their children under control (Hobbis 2020). If parents use smartphones while parenting, they may show minimal interaction, pay no attention to the child's questions or responses and show a lack of warmth and appreciation through flat responses. As a result, the child's language and social, emotional and cognitive development are hampered (Lederer, Artzi & Borodkin 2022). If parents rely solely on smartphones for parenting, their children may be exposed to negative aspects, such as violent and sexual content (Steel et al. 2020), cyberbullying and inhibition of cognitive, language and socio-emotional development (Thongseiratch, Leijten & Melendez-Torres 2020). Parents can consider these two smartphone effects to demonstrate more positive digital parenting (Dardanou et al. 2020).

Parenting style is linked to two dimensions: responsiveness and demandingness. Parents demonstrate responsiveness by meeting their children's needs, supporting their development, accepting their shortcomings and participating in their activities. Meanwhile, the dimension of demandingness is shown in the application of rules, setting expectations and limits on children (Clark 2013). Four parenting styles were defined within these two dimensions: authoritative (high warmth, high demands), permissive (high warmth, low demands), *laissez-faire* (low warmth, low demands) and authoritarian (high warmth, low demands) (low warmth, high demands) (Nakayama 2011).

Parents with high education levels more often show support for children to access smartphones for positive activities by applying active mediation but protect them from negative impacts by applying restrictive mediation (Valcke et al. 2010). Meanwhile, parents with low education levels and lack of skill in using digital devices tend to show a lack of control and support. They often rely on restrictions without positive communication with children, but the discipline is also inconsistent (Nikken & Schols 2015). However, with the increasing access to digital devices in early childhood during this pandemic, the frequent use of digital devices in front of their children to work or communicate and the multitude of stressors such as economic and social issues, changes in digital parenting may occur. Through this study, the researchers wanted to reveal various digital parenting adjustments implemented by parents during the pandemic with high education levels, as well as various factors that might influence the change in digital parenting styles.

Adaptation of digital parenting during pandemic

Parents bear considerable responsibility and play an essential role in developing their children's knowledge. The lockdown regulations that came into force worldwide during the recent coronavirus disease 2019 (COVID-19) pandemic compelled parents to continue with their children's learning and development through digital devices. This became necessary after academic institutions like schools switched to distance education (Adedoyin & Soykan 2020). Distance education means the separation of teacher and student in formal education. Learners, resources and instructors are linked through telecommunication systems such as data, voice and video sharing for learning experiences (Simonson, Zvacek & Smaldino 2019). Because distance education relies on digital devices, the emergency remote teaching and learning during the pandemic required children to access the Internet and utilise digital media to complete their educational tasks. A switch to remote distance education also has implications for early childhood education (Nur Endah Sary 2020).

The switch to remote distance learning placed an additional burden on parents as schooling during the pandemic took place at home. Their role is to accompany and assist children, like teachers at school (Febiyanti, Kurniati & Nzunda 2021). Therefore, education and child care must occur at home, with parents attempting to understand their children, promote their development, maximise their potential and promote optimal growth. It is a challenge for parents because they must introduce and provide digital care for their children during the pandemic to enhance their ability to complete their school work and continue their scholastic, emotional and physical development (Suhenda et al. 2020).

To help parents maximise children's development at home, they need knowledge about parenting. Digital parenting is essential knowledge for parents to know the relationship between parenting style and children's digital use.

Digital parenting for children consists of two dimensions: responsiveness and control. Responsiveness refers to children being supported, accepted and involved in the process of smartphone use. Simultaneously, the control dimension refers to the requirements, rules, controls and limitations associated with the use of smartphones.

Meanwhile, four distinct parenting styles exist: permissive, *laissez-faire*, authoritative and 'authoritarian' (Baumrind 1991). Permissive parenting is exemplified by parents who prioritise implicit boundaries over explicit ones. They avoid conflict with their children. They comply with the children's requests, adhering to their ideas and wills. They invest in parental affection but provide little guidance (Ihmeideh & Shawareb 2014; Mascheroni 2014). The *laissez-faire* parenting style is demonstrated by the lack of parental control and involvement when children access digital content. They do not imply an endorsement of or a restriction on their children's Internet use. Parents who follow this parenting style allow their children unrestricted access to digital content (Chou & Lee 2017; Vale et al. 2018). Authoritative parenting style is demonstrated by parents who establish clear rules. These parents do not explicitly limit their children's behaviour but expect them to be responsible and self-regulating. They adhere to the rule of thumb – for example, when it comes to Internet time (Konok et al. 2020; Turvill et al. 2019).

Authoritarian parenting style is exemplified by parents who demand complete obedience and adhere to rules without explanation. They rarely discuss Internet issues and are unwilling to engage in discussions about Internet access. They maintain that children must accept their parents' views about Internet usage. Thus, parents apply digital parenting strategies to moderate, lead or accompany their children's use of smartphones. Digital parenting places a premium on parents' proficient use of smartphones. Parents must guide their children through a variety of information sources. Well-read parents are believed to consider their children's use of smartphones differently from parents with lesser education levels (Jörg Matthes et al. 2021). Constructive digital parenting maximises the benefits of smartphone use among children while minimising the risks (Dedkova, Smahel & Just 2020; Purnama et al. 2021).

When it comes to parenting strategies and mediation, Livingstone and Helsper (2008) believe that there are five: (1) active mediation, which tends to lead to communication between parents and children related to the Internet and online activities; (2) active Internet security mediation, which leads to security measures and sorting of content accessed by children; (3) monitoring, parents need to check websites or content accessed by children; (4) technical mediation, which includes the use of smartphones to filter and control online content for children; and (5) restrictive mediation, which appears in the form of limiting the use of smartphones and the time children may spend in accessing content using smartphones.

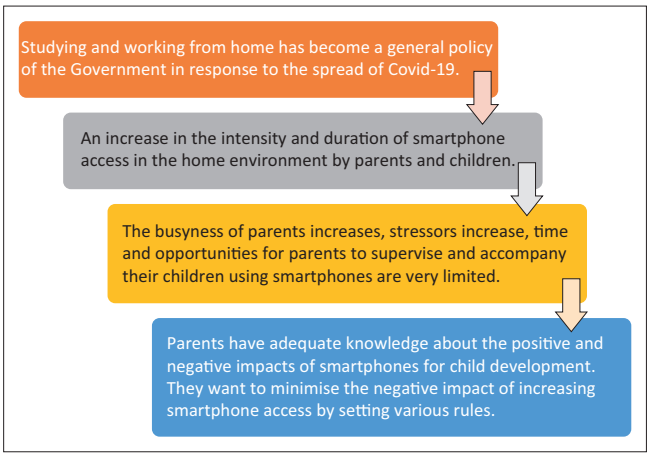
The relationship between parental education and parenting styles

Parental education is one of the social statuses inherent in society, defined by stratified groups with 'various prestige'. The educational background of parents affects their mindset. Parents' knowledge of the digital world can facilitate their children to adapt and improve their digital literacy. Previous research has determined that parental education is the most potent predictor of parenting practices and a critical sociodemographic predictor (Keshavarz & Baharudin 2013).

Parental education ensures parents' ability to educate their children and their psychological well-being, as it can help children develop self-control over events and help them avoid psychological stress such as depression (Sobolewski & Amato 2005). Parents' education level may have an impact on good parenting practices, as well as family welfare factors. Parents with high education levels showed better involvement in educational activities with their children. Parents with lower educational qualifications may be less able to engage in school-based activities with children because of their lack of knowledge (Yamamoto & Holloway 2010). Parents' education level can then be used as a proxy for parenting competence in supporting children's academic development. In addition, parents' educational level brings them cultural capital to feel comfortable in the school environment, increasing the likelihood that they engage more actively in dialogue with their children's teachers (Dermott & Pomati 2016). Parents with higher levels of education have an authoritative parenting style that requires them to be actively involved in communicating with their children regarding daily activities to improve children's critical thinking patterns and tend to avoid permissive and authoritarian parenting styles (Haslam et al. 2020; Lau & Power 2020).

During emergency distance teaching, parents are the only ones physically accompanying their children to study. Parents influence their children's learning by providing digital technology, a learning environment and supporting their children to adapt to new learning methods. In this aspect, parental education can be an essential capital to support the success of digital parenting during the pandemic (Misirli & Ergulec 2021; Purnama et al. 2022).

Based on Figure 1, the theoretical framework for this research was built from the situation of the spread of COVID-19 that hit the whole world, including Indonesia, which prompted the government to issue a policy to study and work from home. This new situation has increased the intensity and duration of smartphone access in the home environment by parents and children. The busyness of parents increases, stressors increase, and time and opportunities for parents to supervise and accompany their children using smartphones are very limited. Parents have adequate knowledge about smartphones' positive and negative impacts on child development. They want to minimise the negative impact when increasing smartphone access by establishing various rules.



COVID-19, coronavirus disease 2019.

FIGURE 1: Theoretical framework.

Research designs and methods

This study used the case study method. Between June and December 2020, the researcher conducted a structured and in-depth interview with seven parents with children aged 3–6 years. This interview explored their digital parenting adjustment during the pandemic. Interviews were conducted using various face-to-face, video calls and voice notes. The researcher also extended the research period to ensure whether the data that had been submitted had changed or not.

Participants

In this study snowball sampling was used to recruit participants until data saturation was achieved. Participants are limited by specific characteristics, namely, lecturers at universities with children aged 3–6 years. Participants' age ranged from 26 to 35 years. Participants have the same condition: teaching students online while carrying out learning from home programmes for their children. This condition increases the use of smartphones and other digital devices in the home environment, so participants must adjust their digital parenting styles to keep children safe from the adverse effects of smartphones. The researchers started this study with a small sample size involving three lecturers from the same university. Gradually, the number of samples increased to the data requirements, involving 27 lecturers from four universities.

Data analysis

Qualitative data analysis is the stage of the researchers in compiling data systematically from interviews, observations and document searches. They are then displayed and analysed into more detailed, meaningful data (Cohen, Manion & Morrison 2018). According to Huberman and Miles (2002), data analysis is divided into three stages: presentation, reduction and verification. The data collected in this study are related to the children's smartphone access behaviour; parents' perceptions, attitudes and knowledge regarding the use of smartphones by children; adjustment of parents' digital parenting during the pandemic; and the factors that encourage this adjustment. Next, researchers reduce data through coding, summaries and discussions with other research team members. After data reduction, the researchers presented the data in themes. In presenting these findings, the researchers include snippets of interview transcripts to emphasise understanding the data on a particular theme. To avoid mistakes in concluding, the researchers cross-checked the answers from informants that were not directly in line with the research focus, and then drew the research conclusions carefully and thoroughly.

Findings and discussions

Children's digital device preferences

Most of the participants in this study stated that television was the first digital device known to children. Infants less than 1 year old may be passively watching television with their families. Their digital device access preferences will vary more with age. This happens because of their social interaction with the environment, cognitive abilities and curiosity, which drive them to experiment with other digital devices. The presence of digital devices in the home can facilitate the natural curiosity of these young people. When they become dissatisfied with one device, they quickly switch to another, especially if they already know that the other device provides something new.

Smartphones are electronic devices owned by all participants in their homes. Smartphones are digital devices often used by participants who work as lecturers. Almost everyone has a smartphone because of the increasing need for connectivity in the digital era. Often children see parents using smartphones at home and the pandemic encourages children to try to use them. Some participants even said they let their children use their smartphones without their permission. Participant HM (male, 31, lecturer) confirmed this during an interview:

> 'Initially, I showed my child the Cocomelon video to make him happy. Because I saw him daydreaming alone, not allowed to play at his friend's house, just 5 m in front of my house. There are many toys at a friend's house. Maybe he was about 2 years old at the time.'

Participant AH (male, 33, lecturer) added:

> 'Television does not show cartoons all the time, while on smartphones, children can watch cartoons anytime. Moreover, the cartoons are of various kinds, such as Upin Ipin, Riko, Omar Hana, Baby Bus, and many more. Therefore, he uses smartphones more often.'

As many as 22 participants admitted that their children use smartphones more often than they watch television. The remaining five participants stated that their children use various digital devices, smartphones and televisions, laptops and PlayStations. Among them, 18 parents said their children watch television and use their smartphones similarly.

However, after getting tired of using smartphones, they switch to television, and vice versa. Other digital devices, such as personal computers or laptops, are rarely used by children because they are considered too complex to use.

After most participants stated that television was their children's first digital device, they discussed the shift in their children's interest from television to smartphones. Children aged 1–3 years watch television more than other digital devices available at home. This habit changes as the child grows. Children aged 4 years and above can use their smartphones to access YouTube or play games. Some children can even download games directly from the Google Play Store. The variety of entertainment features available on smartphones increases children's interest. Many videos are available on YouTube, and children can choose based on search suggestions. In addition, offline games like *Galaxy Attack* or *Subway Surfer* and educational games such as *Baby Bus* can attract children's interest. More challenging online games with tiered levels and new gameplay experiences will draw children's attention. These reasons make smartphones the most frequently used digital devices among children. The following is an excerpt from an interview with participant IQ (male, 33, lecturer):

> 'My son uses smartphones usually to watch YouTube. After watching one video, he continued with another similar video. After I noticed, now he plays games more often. I never taught him; maybe he knew it from a friend.'

Another participant, NA (female, 34, lecturer), echoed this observation:

> 'Besides YouTube, my son also plays games. He got the game from YouTube. After watching the Baby Bus channel, he discovered that there is also a game. Fortunately, we have long disciplined him in using gadgets, so my son is not addicted. However, he is still willing to stop if the alarm that limits the use of smartphones sounds.'

Four participants stated that their children had a personal smartphone. Parents admitted that they deliberately bought a smartphone for their child. Initially, they wanted their children to become digitally literate quickly and be able to improve developmental skills such as reading, number and colour recognition and singing via smartphones. While these parents acknowledge that their children's cognitive and language development skills have improved since receiving their smartphones, they are also concerned about their children's inability to self-regulate. They observe signs of digital addiction in their children because of the content they access. They propose a solution to this problem by increasing discussion with children about the content they have access to and asking children to demonstrate the developmental skills they have gained from the content. Meanwhile, if parents apply a time limit for use or even withdraw the smartphone, this can cause a negative response from the child.

The other 23 participants stated that digital devices, such as televisions, smartphones or laptops, were used interchangeably in the family. Television is a digital device often used together, while smartphones are used interchangeably. Children often ask to borrow the smartphone that their parents use in front of them. Parents often refuse a child's request because parents use smartphones for work and to earn money. Participant AH (male, 33, lecturer) expressed this statement:

> 'Indeed, my wife and I often use smartphones next to our children. I do online lecturing, and my wife takes care of the online shop. If the child wants to borrow a smartphone, we usually argue that it is used for work. We may receive a funny response from the child. He asks his parents to stop working and let him use the smartphone to complete his parents' work.'

Based on the participants' explanation, it was revealed that television is the first digital device children know about because families usually spend time watching television. The family context is the first and foremost place for children to be exposed to digital content. Therefore, parents need to understand the role and influence of digital devices in family life (Jennings 2017). Most cases reveal that parents are the first to introduce children to digital devices. Exposure to digital content in children during infancy seems to continually increase over time (Nathanson 2015; Rideout 2017). Parents have at least three roles in adapting to children's digital world, namely, the creator of the digital environment for children, mediator for the use of digital devices by children and actors in digital parenting for children (Nathanson 2015).

As children grow, their desire to access television shifts to smartphones. Children want to use a smartphone because their parents introduced them to it or because they see other people using it. Children perceive smartphones as more of an entertainment tool than a learning tool. Children predominantly use smartphones for playing digital games and watching YouTube (Oliemat, Ihmeideh & Alkhawaldeh 2018). Several studies have stated that parents support and facilitate their children to use smartphones for entertainment, learning and communication purposes (Choi 2016; Sergi et al. 2017; Wu et al. 2014). The amount of digital exposure to parents' experiences in various fields of their lives has an impact on children's access to digital devices. Digital devices rapidly change how family members communicate, enjoy time together, find and share information and even solve daily problems. Therefore, parents are the first mediators in their children's experience using digital devices. Parents integrate smartphones when teaching, entertaining, playing, communicating, studying and even relaxing. Everything parents do with smartphones is noticed and followed by their children (Benedetto & Ingrassia 2021).

Parents' perceptions and attitudes towards the use of smartphones by children

All participants in this study agreed that children are born into the digital world. Their adaptation to the digital world is a necessity. Preventing children from interacting with digital

devices will be insufficient for social and emotional development. Interaction between children and digital devices is unavoidable. Home, the closest environment for children, has various digital devices, especially televisions and smartphones. Children also observe parents' behaviour using this digital device. When parents work from home, their use of digital devices, especially smartphones, is intense. For these various reasons, parents must facilitate children's adaptation to the digital world and improve their digital literacy skills.

All participants in this study understood that digital content accessed via smartphones, particularly YouTube videos and offline and online games, could positively or negatively impact aspects of children's development. Seventeen respondents believed online gaming has a more significant negative potential than YouTube content because it can cause addiction. Children may become bored when they continue to access unstimulating YouTube content. However, in some digital games, the child may be required to complete various challenges to progress to the next level. This often compels children to complete the challenges. If a child becomes addicted to playing online games on their smartphone, parents will find it challenging to implement a strict daily schedule to mitigate digital addiction.

Giving children the confidence to manage their digital activities can increase their confidence and avoid access to potentially harmful content. Of course, this will require extensive communication with children about the characteristics of potentially harmful content and the consequences of accessing such content. Before giving freedom to children, parents must try to improve their children's digital literacy levels and online security awareness. However, children may even be more attracted to digital content that gets prohibited by their parents. Children's curiosity frequently triumphs over their fear of negative consequences for disobedience. Therefore, apart from giving children the confidence to access smartphones freely, parents still have to accompany them with various active media mediation strategies. The following is an excerpt from an interview with participant HN (female, 42, lecturer):

> 'I give my child the freedom to use a smartphone. Nevertheless, every night, I usually ask what are they watching? How's the story? Then I put in some advice. Usually, my child spends 3–4 hours a day using a smartphone.'

Although all participants thought allowing children to use smartphones freely could increase their confidence in participating in the digital world, 23 participants chose to set limits and rules for their children's smartphone use. They prioritise the application of restrictive mediation interspersed with active mediation. They argue that early childhood cannot accept responsibility and determine good and bad digital content. They also have not developed the ability to think logically and follow the right choices. These children are still controlled by their excitement and curiosity. For this reason, parents limit the type of their children's access and the amount of time they can spend on their smartphones in 1 day. According to most of the participants, during this pandemic, children were only allowed to use smartphones for 1–3 h per day. However, they revealed obstacles to inconsistencies in the application of regulations. Sometimes, children use their parents' behaviour of using digital devices as an excuse. For example, when parents cannot accompany their children to play or read stories to them, they lend their smartphones to keep their children calm and in control. Following is an excerpt from an interview with participant NM (female, 36, lecturer): 'I have two children. If both of them are fussy when I have a lot of work, I give the smartphone to the eldest child'.

Based on the findings of all interviews, there are three criteria for safe digital content, whether video or games, that children can access: educational content, appropriate for the child's age and free of pornography, violence and offensive language. Because children are not mature enough to critically assess the digital content they access and manage the risks posed by that content, parents must spend time accompanying their children to ensure that they access content that meets these criteria. When parents do not have much time, they use technical strategies such as activating YouTube Kids, configuring data quotas, installing the Family Link app or setting the alarm on their smartphone to indicate when access is over. As expressed by participant DY (female, 33, lecturer):

> 'I have a busy online teaching schedule. So does my husband. We activate several settings on our smartphone so that the content that children access is age-appropriate, such as activating YouTube kids and installing family links.'

The participants in this study concluded that a child could not be separated from a smartphone because it is the most accessible digital device in their environment. A smartphone has both positive and negative impacts. Parents must supervise their children's smartphone activities to avoid negative impacts and actively improve children's digital literacy competencies to use digital devices responsibly. Parents admit that today's daily life cannot be separated from digital devices. Children's future is also influenced by digital devices, which may be more massive than now. Therefore, parents must prepare their children to be involved in the digital world positively and productively. However, parents are also concerned about their children's excessive use of digital devices and exposure to harmful content. Therefore, parents know that guidance, assistance and attention in children's digital activities are needed early (Chaudron et al. 2015).

Parents play a critical role in developing their children's digital literacy. Parents must act as role models for children by modelling proper digital literacy values. Children will imitate how parents use digital devices and mimic their interactions with digital content. For example, if parents forbid their children to watch films that contain elements

of violence, but children see their parents do it, there will be a conflict of values within the child. In addition, parents must always be ready as the primary reference for children if they encounter problems in their digital world (Vélez, Olivencia & Zuazua 2017). To achieve adequate digital literacy competence in children, three things must be done at home and school: parents implement restrictive active media mediation for digital literacy practises at home; parents support and supervise the involvement of digital media in children's digital literacy practises at home; parents and teachers share knowledge and experiences and carry out digital literacy practices that are in harmony between home and school (Febiyanti et al. 2021; Kumpulainen & Gillen 2017). Finally, of course, parents must show a more serious effort in practising digital literacy at home so that it can affect their children because many studies (Chaudron et al. 2015; Livingstone et al. 2015; Tomopoulos et al. 2014) have shown that parents are not aware of their children's digital activities and digital skills. Participants in this study have at least one main asset to make this happen: adequate knowledge about digital literacy, media mediation and the various impacts of digital content on children's development.

There is a dangerous gap between children's ability to use digital devices and their clear understanding of the digital content they access, be it games or videos. Children may not realise that games and videos can entice them to continue accessing them, posing various risks such as digital addiction (Lewis, Swartz & Lyons 2016; Ulfah 2020; Purnama et al. 2021). Therefore, parents play a role in determining the criteria for safe digital content and supervising children's access to digital content through restrictive and active media mediation. The digital content must support the stimulation of developmental aspects, should be age-appropriate and must not contain elements of violence, pornography or offensive language. Digital content that is considered inappropriate or interferes with the nature of the child's development is considered inappropriate. Otherwise, if the content can develop a child's innate potential or aspects of his or her development, it is considered appropriate (Jeffery 2021).

Positive impact of smartphones

All participants in this study acknowledged that smartphones could enhance their children's cognitive development through video content and educational games. For example, children recognise letters, numbers and colours faster. Children's language skills are also stimulated through videos and songs provided by the smartphones. Children can understand and learn from YouTube content from age 2, and their capacity to understand more complex content continues to grow. Many parents stated that 2–3-year-old children enjoy symbolic spectacles such as colours and shapes in interviews. YouTube introduces colours and shapes more easily and makes them more fun with accompanying background music and a variety of looks. Here is a transcript of the interview between participant DY (female, 33, lecturer) and IR (male, 33, lecturer):

> 'Usually, on YouTube there are lessons about colour. For example, colouring objects such as cars, cows, dinosaurs and balls. The objects are coloured yellow-green. There is also learning about how to count with a song, so children understand quickly.'

Participants IZ (female, 32, lecturer) and HF (male, 35, lecturer) added, 'Block number if I am not mistaken. They are learning colours and shapes like dominoes'. Participant SR confirmed:

> 'My son loves dinosaurs. On YouTube, there are about dinosaurs that change colours. It is just that it is not like Ipin Upin's cartoon show, for example, which has sound; this video only provides a song as the voice.'

Children may become bored with YouTube content that only displays letters or numbers as children grow. Children aged 4–6 years rarely access the content of letters and numbers. They already enjoy more complex YouTube content such as toy reviews or cartoons at that age. Conversations, contexts and events in children's content can influence their emotions. YouTube content can improve vocabulary mastery and accelerate active language skills. Before 2 years, video content with songs and only one language can improve a child's receptive language skills. However, if the content they access is in multiple languages, the child may be affected by code-mixing, leading to language confusion.

Additionally, participants reported that children who frequently watched religious songs developed their artistic abilities. They rapidly memorise the lyrics and can follow along with the rhythm. Furthermore, parents appreciate the abundance of educational cartoon content on the Internet. *Riko The Series* is one of them, as it features numerous short Qur'an chapters for children. Finally, as aspects of child development were facilitated by active media mediation, the study participants reported that their children exhibited commendable behaviour because of the media content they accessed.

Supporting children's adaptation to the digital world

The existence of smartphones in the child's environment cannot be avoided. Parents must guide children's adaptation patterns to digital devices around them so that they can take advantage of digital devices for their development and avoid the negative impacts they cause. Parents have a new responsibility in today's media-rich and technologically innovative environment to ensure that their children are ready to adapt to education and digital interactions while remaining safe from adverse risks. This may be unfamiliar to parents as they were not brought up in an age filled with technology. Generational differences and parenting in the digital era require parents to improve their competence and digital literacy before setting an example, providing direction, setting boundaries and providing a healthy digital environment for children.

The parents who participated in this study acknowledged that increasing competence and digital literacy in the digital era is a challenge. Participants must quickly adapt to the latest digital devices, understand digital literacy and apply it in social and work environments because of the demands of work as a lecturer. However, as a result, it can be concluded that all participants have reached the level of digital literacy and competence.

All parents agreed that just because children appear to be quite good at using digital devices such as smartphones does not mean that they are digitally literate. Proficiency with this smartphone can be determined by the child's ability to download and install applications through the Google Play Store, use WhatsApp or other social media and operate applications such as games. YouTube hosts a selection of videos. A child with good digital literacy skills can use tools and digital media responsibly. Parents must guide their children to know the advantages and disadvantages of using smartphones and certain ethics in using them.

The following is an excerpt from an interview with one of the participants, IS (male, 38, lecturer):

> 'I have three children. The oldest is still in elementary school. The siblings are 4 and 3 years old. I noticed that these two younger siblings could already install applications, play games and select videos on YouTube. They typically use WhatsApp to make voice or video calls. I always spend time accompanying children when using a smartphone. I use this time to discuss the benefits and harms of digital content, the provisions of content that children can access and some simple etiquette in accessing video content. I also apply technical arrangements like YouTube kids.'

According to most of the participants, digital competence includes using digital technology confidently, critically and responsibly for educational and social purposes. Children with digital competence and literacy can operate digital devices and related applications, choose appropriate content and avoid harmful content. Parents will include digital literacy lessons about social media safety for older children. Parents alert them not to post personal data or photos, not respond to strangers and not follow accounts that promote content against religious or cultural values. The following is an excerpt of an interview with one of the participants, RNH (female, 36, lecturer), regarding this issue:

> 'My son is still in elementary school. He is 7 years old. He can use social media like Instagram. I advise not to follow accounts that negatively affect others incompatible with Islam.'

Parents' approaches to digital parenting during the pandemic

The researchers found that 16 mothers in this study followed authoritative digital parenting combined with multiple disciplines to control a child's digital activity. As a result, these mothers usually have more time to talk with their children about ethical Internet use rules and digital content's positive or negative impact. The other mothers follow permissive digital parenting styles because they pamper their children or are too busy to oversee the implementation of digital discipline. However, mothers who choose permissive parenting have implemented technical mediation on their smartphones, such as data quota restrictions and activating YouTube kids, or they will choose certain content appropriate for the children's age.

Seventeen fathers exhibited authoritarian digital parenting styles. They demanded that the children practise discipline despite repeatedly showing indifference to the discipline they have instilled in them. Fathers relied heavily on smartphones for work. As a result, the children had to refrain from protesting when their use of smartphones was limited. Ten remaining fathers stated that they applied authoritative parenting. They used to sit and watch their children play games. During viewing sessions, fathers reinforce the content's positive values, encourage children to imitate or warn of the negative values of some content and ask children to avoid watching it. Some fathers even go so far as to play digital games with their sons, even though this takes up much of their time. Although this kind of parenting can increase close relationships with their children, the impact is that they are looking for attention and whining about playing with their parents even though they know that their parents have busy things to do.

According to interview findings, grandparents practise digital parenting more permissively than children's parents. Grandparents give their grandsons whatever they want for various reasons, one of which is often expressed: the grandson is always trying to follow his parents' digital discipline; now it is time for them to be more accessible. The child often uses the tension between parents and grandparents in digital parenting as an excuse when parents remind their children to follow digital discipline. In some cases, it can also make children happier when they are with their grandparents than when they are with their parents. The following is an excerpt from an interview with one of the participants, AF (male, 34, lecturer):

> 'If both of us are working, the children are left at their grandfather's house. When children are prohibited from using smartphones at home, they usually get cranky and want to be taken to grandpa's house. Indeed, there is more freedom to use a smartphone.'

Participants' strategy to improve children's digital literacy is to retain open and honest communication about digital devices and the content that can be accessed. These communications may co-occur with or following children's access to digital content. Participants even evaluated their children's daily digital activity before bed by asking them to describe a video they watched or a game they played. Participants usually reinforce the positive values inherent in digital content through this communication. However, there are differences in how participants are treated regarding harmful content. Nineteen respondents stated that they would immediately inform their children to stop accessing or taking their smartphones. The remaining eight respondents told their children regarding the inappropriate content and waited for their children's responses.

The following is an excerpt from an interview with participant AR (male, 33, lecturer):

> 'Friends can influence my child. If he is playing at his friend's house, my son will watch his friend's activity on their smartphone. The online game that they play may contain violent and sexual content. That's why I prefer to invite his friend to my house. Based on our experience, after our child came from a friend's house, he asked to install the GTA game on my smartphone.'

All respondents stated that there is no difference in how boys and girls are treated regarding digital parenting. Each child receives the same level of care. Participants establish rules that both boys and girls must follow. Participants may be more assertive when interacting with boys, not because of their gender but because boys tend to play more games and frequently adhere to time limits for using digital devices.

Twelve participants admitted no discernible difference in the digital parenting practices before and during the pandemic. Parents who had accustomed the discipline in using smartphones for their children and applied a specific combination of media mediation before the pandemic reported that they did not show major digital parenting adjustments during the pandemic. They might provide more time and opportunities for children to use smartphones because children's social activities are limited because of the absence of school. However, this is accompanied by several requirements the child must meet first. For example, a child should only use digital devices for a long time after eating, studying, reading the Qur'an or praying. In the case of the remaining 15 participants, some significant changes in parenting occurred.

Parents who only apply authoritarian digital parenting by applying various disciplines without active communication with children are forced to struggle to build communication to increase children's digital literacy. The same condition was faced by parents who applied permissive digital parenting before the pandemic. This significant adjustment happens because children demand increased access to digital devices. These 15 parents reported more significant stress in parenting because of these fundamental changes and the sheer amount of work. To reduce the stress in digital parenting, eight of the 15 parents chose to give in to their children's demands. The following is an excerpt from an interview with one of the participants, ST (female, 40, lecturer): 'I have three children, and I am a single parent, you know. So, if I have to work, I [*l*] end smartphone to children, so they are easy to manage'.

Parents with adequate knowledge about smartphones' positive or negative impacts are more likely to apply authoritative parenting. They also support their children's desire for digital activities, such as allowing them to watch videos or play games, assisting them in engaging in certain digital activities or teaching them how to engage in the digital world independently. Regarding this statement, Participant IQ (male, 33, lecturer) stated:

> 'All parents want to apply active media mediation and authoritative digital parenting. But the problem is whether they have enough time for it and are in good psychological condition because of additional stress, such as overwork, limited social interaction, boredom and economic problems.'

Parents who understand the negative impact of digital devices but do not have the time or opportunity to accompany their children when accessing smartphones are more likely to apply authoritarian parenting by applying various rules without establishing positive two-way communication. This decision is considered the most realistic; parents can complete their work while their children can use smartphones safely from destructive content. Participant AT (male, 37, lecturer) explained this statement: 'Instead of children crying and parents' work not being finished, parents should allow children to use smartphones, but with some rules'.

Parents who consider their children's desire to use a smartphone as a source of happiness are more likely to apply permissive parenting. Parents will always follow their children's wishes and fulfil all their demands for the use of smartphones. They reasoned that the pandemic made children stressed and bored more quickly because of limited social interaction. Smartphones, finally, have become the children's foremost choice for entertainment. Children raised in permissive digital parenting environments tend to use the Internet for pleasure with little positive impact. This statement was expressed by participant NR (female, 28, lecturer):

> 'Yes, during this pandemic, I often allow children to use a smartphone so that these children do not get bored quickly. However, my boy often has tantrums if I reject his requests to use smartphones.'

This study found that parents who have implemented restrictive and active mediation do not show many changes in digital parenting during the pandemic because their children are accustomed to digital discipline and have pretty good digital literacy skills. Shin (2015) showed that parents who feel more positive than negative influences on their children's digital activities are more likely to feel confident about managing their children's Internet use. However, this self-confidence usually keeps parents away from building active and positive communication with their children regarding access to digital devices and make them less interested in updating their digital knowledge. However, parents are still aware that managing their children's digital activities by applying restrictive mediation alone is not enough to build digital literacy. They argue that parents should be actively involved in communication with their children and be equipped with Internet knowledge to promote a safer online environment for children.

Research data based on interviews also revealed that parents who previously only applied restrictive mediation or freed their children to use digital devices without specific mediation showed many adjustments in digital parenting during the pandemic. This adjustment happens because children demand more screen time, and parents realise that increased screen time means increased negative impacts. Even though

it could be that the increase in access to digital devices by children is influenced by the habits of using digital devices by parents at home, children feel their parents spend too much time online. Children feel disturbed because of their parents' busy digital activities. They feel unnoticed, bored, unhappy, jealous and even angry. As a result, they also want to do what parents do, entertain themselves by spending time online (Erişti & Avcı 2018). Therefore, parents should put more effort into building positive communication with children about the impact of digital devices and fostering children's critical thinking about the content they access (Rukmana et al. 2021). However, in the end, various stressors that emerged because of the pandemic, such as piling up work, worsening economic welfare and limited social interaction, made parents give up on their children's demands.

This study concludes that parents' high level of education is a significant capital to ensure the success of digital parenting during the pandemic. However, this capital requires support from other internal factors, such as parents' physical and psychological conditions, free time and parenting support. An external factor that may have a destructive impact is differences in parenting patterns and perception of digital device usage by a child between parents and grandparents. Parental involvement in children's school activities can affect their digital parenting self-efficacy. Parents interact more with the use of children's digital devices. These experiences can improve digital parenting practices (Misirli & Ergulec 2021; Purnama et al. 2022). Other factors such as socio-economic conditions, lack of parenting support, low education and the large number of jobs that take up parental time are disadvantageous factors in digital parenting practices (Huang, Chen & Straubhaar 2018). In addition, the level of digital literacy of parents, their ability to manage digital security and active communication with children regarding the use of digital devices are indicators of supporting digital parenting self-efficacy. This indicator did not differ based on the role of parents in the process, Internet use, socio-economic status, occupation and educational level (Yaman et al. 2019).

Conclusion

This study aims to examine how parents used digital parenting during the pandemic and to gain insight into how the digital parenting process can mitigate the negative consequences of a child's smartphone use. The objective of the study is not to criticise or judge parents but to gain insight into early childhood digital parenting. Given the ever-changing landscape, recognising this situation, digital parenting is critical for implementing learning and smartphone use in children (Dedkova et al. 2020). Furthermore, it is critical to instil the proper use of smartphones and parental control (Egan & Beatty 2021). According to Özgür (2016), parents must be motivated to introduce smartphones to their children in order for both parents and children to adapt. Therefore, we must examine parents' use of smartphones, particularly during the pandemic, to continue advancing development and overcoming the adverse effects and risks of online activity on children.

Children have been using and accessing smartphones since they were 1 year old, as evidenced by the quotes in this article. Children as young as 4 years old already own smartphones. In this context, parents' attitude towards smartphones is to seek a way out of the situation by increasing discussion and communication with children about the content accessed and requesting that children demonstrate the developmental benefits of the content. Parents are required to oversee changes in the pattern of smartphone use in the home environment as an adaptation process during the pandemic, which requires an increase in smartphone use, both for work and study (Akbarjono et al. 2021; Choi et al. 2021). However, the use of smartphones has both positive and negative consequences. Participants employ intense communication, establish boundaries and establish rules when utilising smartphones to mitigate negative consequences. Three indicators of content security are that it contains an educational value, is age-appropriate and is free of pornography, violence or foul language. Parents are motivated to use smartphones by the positive effects on their children and their support for their children's adaptation to the digital world. When parents use digital parenting during a pandemic, it results in authoritative parenting and adds some discipline to control (Khamsuk 2021). Mothers and fathers who practise pure digital parenting have a reason to equip their children with digital life skills. There is no discernible difference between digital parenting applications used during and before the epidemic. Additionally, parents make no gender distinctions when it comes to digital parenting.

Acknowledgements

The authors thank their colleagues from UIN Antasari Banjarmasin for providig insight and expertise that greatly assisted the research, although they may not agree with all of the interpretations or conclusions of this article. The authors would also like to show their gratitude to the Hafidh 'Aziz, UIN Sunan Kalijaga for sharing their pearls of wisdom with them during the course of this research, and they thank two 'anonymous' reviewers for their so-called insights. They are also immensely grateful to Syafii, Latif and Qonita for their comments on an earlier version of the manuscript, although any errors are the authors' own and should not tarnish the reputations of these esteemed persons.

Competing interests

The authors have declared that no competing interests exist.

Authors' contributions

H.P.D. was responsible for the conception and design of the study, acquisition of data, analysis and interpretation of data, drafting of the article, critical revision of the article for important intellectual content and final approval of the

version to be published. Acquisition and drafting of the manuscript were done by N.I.H.I. S.P. was responsible for data collection and intellectual content of the article. M.U. and A.S. reviewed the article and approved the final version to be published.

Ethical considerations

Ethical clearance to conduct the study was obtained from the Progressive Institute Research Ethical Clearance Commission (No. 10/PI-RECC/VIII/2021).

Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study. Data from the first author's master's research work were used in the writing of this article.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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