International Electronic Journal of Elementary Education
December 2025, Volume 18, Issue 1

Digital Technology Usage in Early Childhood: A Comparative Study of Omani and Emirati Children and Parents

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Received : 16 July 2025
Revised : 16 October 2025
Accepted : 10 November 2025
DOI : 10.26822/iejee.2025.415

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www.iejee.com
ISSN: 1307-9298

Abstract

This study aimed to examine the digital lifestyles of children in their home environments, as perceived by their parents. Using a mixed-methods research approach, the study was guided by the Ecological Techno-Microsystem framework. The research included a total of 590 kindergarten children and their parents from Oman and the United Arab Emirates.

The findings revealed that children in both countries live in digitally rich home environments, as evidenced by the high number of digital devices available to them. While most children spend less than one hour per day watching television in the living room, a significant number of their parents reported simultaneously using tablets or computers.

The research also found significant differences between Omani and Emirati parents' approaches to digital mediation. Omani parents reported using both restrictive and co-viewing strategies more frequently, while Emirati parents showed a higher tendency for non-restrictive or laissez-faire mediation. These findings emphasize that familial context and the home environment are critical factors in understanding and supporting young children's digital use.

Keywords:

Digital technology, Family context, Mediation, Parents, Screen time, Young children

Introduction

Digital media has transformed how children and families interact, offering both benefits and risks. While devices provide educational and recreational opportunities, they have also led to a consistent increase in daily screen time for all family members (Rideout & Robb, 2020). This rise is a significant concern, especially for young people who spend extensive time on smartphones, laptops, tablets, and televisions. Experts note that smart screens now occupy a larger portion of children's time than in the past (Chaudron, 2015; Dunn et al., 2016; Konca & Koksalan, 2017; Ofcom, 2015; Rideout & Robb, 2020), with a shift from TV to devices like tablets and phones (Ofcom, 2015).

The frequent use of technology is a growing concern for modern families (Livingstone et al., 2014; Williamson, B., Eynon, R., & Potter, J. 2020,; Senbekov, M., Saliev, T., Bukeyeva, Z., Almabayeva, A., Zhanaliyeva, M., Aitenova, N., & Fakhradiyev, I. 2020). The COVID-19 pandemic further escalated this issue, with a significant increase in internet consumption among children and adolescents. This heightened usage brought additional challenges, including cyberbullying, misinformation, and exposure to illicit content (Konca, 2022; Simsar et al., 2024; Stanek, 2023). The pandemic also disrupted sleep patterns for both children and parents due to increased screen time (Guan et al., 2020; Pisano et al., 2020). Beyond the pandemic, research links extended screen time to unhealthy eating habits (Harrison & Liechty, 2012; Wiecha et al., 2006) and disturbed sleep patterns among preschoolers (Garrison et al., 2011; Simsar et al., 2024).

The widespread use of electronic devices profoundly influences the physical and emotional well-being of young people (Pandya & Lodha, 2021). Prolonged screen use can lead to sedentary behavior, contributing to childhood obesity. Additionally, the blue light from screens can interfere with sleep-wake cycles, leading to insomnia and impaired cognitive performance. Digital technologies present both advantages and disadvantages, making a healthy balance crucial for a child's health, learning, and social skills (American Academy of Pediatrics, 2016).

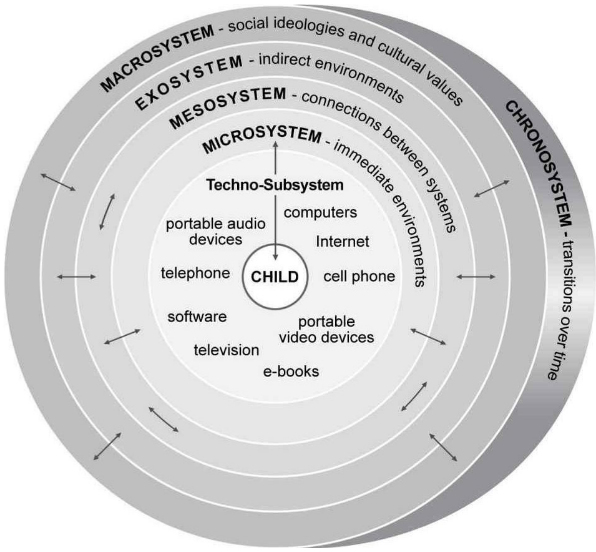
The digital realm also affects the quality of family relationships. When each family member is engrossed in their device, shared moments can suffer (Newson, M., Zhao, Y., Zein, M. E., Sulik, J., Dezecache, G., Deroy, O., & Tunçgenç, B. (2021). Children may prioritize virtual activities over real-life interactions, which can impede their emotional growth and relationship-building skills. The unfiltered nature of the internet exposes children to harmful material, cyberbullying, and predators, which jeopardizes their mental and physical development.

Finding a balance is crucial for a healthy family environment. Parents must oversee their children's online activities to protect them from potential dangers while allowing access to beneficial resources (Badillo-Urquiola et al., 2020). While this can be challenging, it is essential for creating a safe digital setting for families and ensuring the well-being of children (Mitchell et al., 2005).

Environmental Factors that Impact Children' Screen time

Bronfenbrenner's (1989) ecological systems theory posits that child development is profoundly shaped by interactions with their environment. Building on this, Johnson and Puplampu (2008) introduced the Ecological Techno-Subsystem, integrating technology as a core component of a child's microsystem. This framework provides valuable lens for examining the role of digital technologies in a child's life. (See Figure 1).

Figure 1.
Ecological techno-subsystem (Johnson & Publampu, 2008)



However, a critical review of existing literature, particularly studies from Western contexts, reveals a significant gap in their applicability to the socio-cultural dynamics of the Middle East, specifically Oman and the UAE. While these studies, such as those by Johnson and Puplampu (2008), offer a broad framework, they often fail to account for the unique parental roles, cultural norms, and educational policies prevalent in Arab societies. The influence of the "techno-subsystem" is not a one-size-fits-all concept; its impact is mediated by the specific cultural context in which it operates.

Furthermore, a critical analysis of previous studies on this topic is essential. While many studies support the negative effects of excessive screen time, their consistency and potential weaknesses must be examined. For instance, do these studies adequately address the varying levels of parental oversight, the role of extended family in child-rearing, or the specific content consumed by children in this region? The existing literature, while informative, presents a general view that may not fully capture the nuances of how digital media is integrated into and impacts the lives of Omani and Emirati children. Therefore, a deeper exploration is needed to link the Ecological Techno-Subsystem theory to specific variables within the Arab cultural context, offering a more comprehensive understanding of the topic.

In relation to Figure 1, The Ecological Techno-Subsystem (Johnson & Puplampu, 2008) describes a child's interactions with both people (like peers) and devices (like hardware) within their home. The number of tech tools at home and how parents manage them significantly impacts a child's screen time. Parents act as major influencers, shaping their children's digital habits and views. Open communication and clear boundaries are key to ensuring a child's appropriate screen and internet usage (Vandewater et al., 2005). The rise of devices like mobile phones, tablets, and computers has led to children spending much more time on screens at home, which in turn has changed their lifestyles.

Screen time, defined as the time spent on devices like computers, TVs, tablets, and smartphones (Chukwudo, 2020), significantly affects a person's mental and physical health, especially in children (Konca, 2022; Stanek 2023). Increased screen time can also harm a child's academic performance and their relationships with parents, teachers, and peers (Granic et al., 2020; Livingstone & Franklin, 2018; Simsar, 2021). This study focuses on the digital habits of Emirati and Omani children at home, and the following sections will detail the impact of increased screen time in these specific contexts.

Background of Study

Creating an appealing internet experience comprises age-appropriate, educational resources, online safety measures, and encouraging digital competence for both parents and children (Metho). This way, families may exploit technology's virtues while reducing drawbacks like excessive screen time or unsuitable material. Eventually, an equitable online setting assists families to manage technology securely, fostering children's healthy development and important family ties.

Studies have demonstrated that parental beliefs, opinions, attitudes, and their own usage of technological devices impact their children's use technological devices (Hurwitz, L. B., & Schmitt, K. L. 2020; Konca, 2022; Konca et al. 2024; Papadakis et al., 2019; Simsar et al., 2021). Particularly for very young children, parents' perspectives and attitudes toward technology can either positively or negatively influence their children's behaviours' concerning screen time.

In this case, how parents mediate with their children regarding screen time at home is an important concern. Every family unit possesses its own distinctive context and characteristics, resulting in variations in children's digital technology usage from one family to another. Moreover, similarities and differences may exist within children's digital technology usage across various contexts, encompassing factors like parental perspectives, differences in individual interests, and personality traits (Konca, 2022). In accordance with Martens et al. (2018), most parents engage in using digital technology with their children either due to their personal addiction to technology or because they are concerned that their children might lag behind in school and face disadvantages if they lack access to personal computers or smart screen devices at home.

On the other hand, parents who hold negative views about the use of smart screen technology are more inclined to limit their children's use of digital technology within the home environment (Seo & Lee, 2017). Therefore, the opinions and beliefs that parents hold regarding smart screen technologies are crucial in influencing how they manage and regulate their children's use of electronic devices. It is important to comprehend how parents view touch screen technologies for children's learning, as these views can influence the availability of smart mobile devices and apps that parents provide for their children (Papadakis et al., 2019).

Importantly, prior research has emphasized three prevalent forms of mediation methods (Livingstone et al., 2015; Nikken & Jansz, 2014; Wu et al., 2014). Active mediation entails parents and children engaging in negotiations about the content viewed during the use of digital technology. Co-viewing involves parents actively participating by being present and using digital technologies alongside their children. The restrictive strategy involves parents setting specific rules regarding the content, location, and duration of digital technology use for their children. It is important to note that some families do not have clear rules or expectations regarding their children's use of digital technology (Nikken & Jansz, 2014; Wu et al., 2014)

Screen Time Patterns in Oman and UAE

High screen times affect the overall social skills, academic performance and even health of the children as they are exposed to digital screens for long periods (Stanek, 2023). Several factors are responsible for the difference in screen time among children in UAE and Oman (Kaitasi, 2017). The first point of difference is the diverse socioeconomic status of the regions. UAE has a high GDP and high personal disposable income among households, which means that families in UAE can afford multiple devices providing further access to children to use the devices (Katsaiti, 2017; Lambert, et al., 2022; Randeree, 2019).

Oman, on the other hand has several families belonging to middle and lower-income groups and hence, can afford limited devices. Secondly, UAE has an individualistic culture that values freedom and hence, children are inclined to use digital devices as per their interest. On the other hand, families in Oman have a collectivist culture and value social ties and harmony rather than allowing children to use digital devices independently (Nasser, et al., 2021; Al Muqarshi, et al., 2021). UAE adopted a technology-based curriculum in educational institutions which leads to children depending on digital screens not only for leisure but also for their academics (Hoshang, et al., 2018). The educational process within Oman follows a more traditional approach and children rely on textbooks more than digital screens for their studies. Finally, environmental factors are responsible for the difference in screen time between UAE and Oman. Oman has a moderately cooler climate than UAE and children there are more inclined towards activities like camping, fishing, hiking, etc. rather than spending time on screens all day.

The proliferation of digital technologies has facilitated societal advancements, although it has also exerted an impact on the lifestyle and well-being of children in society. The proliferation of digital devices such as tablets, mobiles, and gadgets has had negative impacts on children in society (Coyne, et al., 2020). Excessive usage of digital gadgets among children in the UAE is associated with several health concerns, including obesity, headaches, sleep disturbances, and eye strain. According to the 2023 reports from Indus Health, over 15% of children and teens in the UAE are afflicted with obesity.

In addition, an increase in screen time and digital technology utilized further leads to a reduction in physical activity and poor nutrition among children. Screen time can further create negative impacts on the mental health of children leading to increased anxiety, aggression, low self-esteem and addiction (Paulus, et al., 2018). The academic performance of children is also affected due to increased screen time, and it contributes to the diminishing social skills of young people (Hartshorne, et al., 2021). Due to the rising prevalence of excessive screen time among children in both the UAE and Oman, there is a concern that future generations may develop a more individualistic mindset, leading to a decline in the preservation of the collectivist values and traditions of these nations.

Current Study

This study offers valuable insights into children's digital lives within Omani and Emirati homes. It showcases the importance of recognizing and understanding the intersection of socioeconomic status, cultural norms, and digital landscape in shaping children's experiences and family dynamics in a technologically driven world. To understand these implications, this research aims to depict the digital lifestyle of children within their home environments, focusing specifically on Omani and Emirati parents according to the framework set forth in the Ecological Techno-Microsystem. In order to achieve the purpose of the study, the following research questions were determined.

- What is the amount of screen time of the Omani and Emirati parents and children?
- Where and with whom, do Omani and Emirati children use digital devices within the home?
- What methods do Omani and Emirati parents employ in mediating their children's digital technology usage?

Methods

The study employed a mixed-methods research design to provide a comprehensive understanding of children's screen time among Emirati and Omani families. The quantitative component involved a closed-ended online questionnaire which was shared with 751 parents (227 Emiratis and 524 Omanis), while a qualitative component was used to provide additional depth. Data collection used a convenience sampling approach, with the questionnaire—adapted from Konca and Koksalan (2017)—shared through school-based parent groups.

The study utilized an existing questionnaire which was adapted for data collection. The researchers did not conduct a new validation process, stating it was unnecessary due to the instrument's use in previous studies. Cultural adaptation and translation were not systematically provided but were made available upon request from parents. Ethical approval was secured from participating parents, and informed consent was obtained from participating parents through consent letters shared via email.

Sample

The selection of participants in this current study was carried out through the convenience sampling method. A total of 600 children from Oman and UAE conveniently participated from Salalah (Oman), and Abu Dhabi (UAE). However, among the children originally participated to this study, the parents of 10 of these children withheld consent for their children's participation, only partially completed the data collection tool or did not return the survey within the appropriate time. Therefore, data was only collected from 590 kindergarten children and their parents. The demographic information regarding the participants is presented in Table 1.

The proportions of children from each age group varied, with 11.2% aged less than 1 year old, 32.8% aged 1-2 years old, 27.8% aged 3-4 years old, 25.5% aged 5-6 years old, and 11.7% aged 7-8 years old. Additionally, 32.3% of participant children were male, while 67.7% were female. In terms of the parents who participated, 56.7% were female and 43.3% were male. The age of the participating parents was 28.0% aged 20-30 years old, 45.2% aged 30-40 years old, 24.1% aged 40-50 years old, and 2.7% aged 50 years or more.

Table 1.
Participant demographics

	Oman-400	UAE-190	Total	
Variable	n	n	n	%
Gender of child				
Girls	168	109	277	67.7
Boys	232	81	313	32.3
Age of child				
Less than 1 year old	55	14	69	11.2
1-2 years old	42	25	67	32.8
3-4 years old	78	62	140	27.8
5-6 years old	124	40	164	25.5
7-8 years old	101	49	150	11.7
Number of siblings				
No sibling	88	24	112	19.0
1 sibling	115	34	149	25.3
2 siblings	104	62	166	28.2
3+ siblings	93	80	163	27.5
Gender of parent				
Female	207	127	334	56.7
Male	193	63	256	43.3
Age of parent (years)				
20-30 years old	130	35	165	28.0
30-40 years old	168	98	266	45.2
40-50 years old	88	55	143	24.1
50+ years old	14	2	16	2.7
Education level of parent				
Primary school	83	20	103	17.4
High school	130	100	230	39.0
University	140	59	199	33.8
Postgraduate	47	11	58	9.8

Data Collection Procedure

The data in this study was acquired using a data collection form that was modified from a questionnaire developed by Konca (2022). The questionnaire consisted of six items pertaining to

the demographic attributes of the children involved and their parents, together with 43 questions aimed at gathering comprehensive data on the digital surroundings within the children's home environment. For more detailed information, a description of the data collection instrument is provided in Table 2.

Table 2.
Instrument

Name and sample item of the section	Number of items	Type of items	Reliability score (α)
Availability of digital devices "How many televisions do you have in your home?"	8	Multiple choice (None to 3 or more)	.822
Children's access to digital devices "Which digital technologies does your child use in your home?"	7	Multiple choice	.684
Place of children's digital device usage "In which room of your house does your child use a smartphone?"	6	Multiple choice and open- ended (His/her own room, living room, kitchen, other...)	.812
Accompanying people during children's digital device usage "With whom does your child use a tablet computer in your home?"	6	Multiple choice and open- ended (His/her own, child/peer, an adult, other...)	.844
Parental mediation "Do you limit the screen time of your child?"	6	Multiple choice (Yes or No)	.698
Screen time of children "How many minutes per day does your child watch television?"	3	Multiple choice	.711
Screen time of parents "How many minutes per day do you use a smartphone?"	4	Multiple choice	.723

Printed versions of the participation consent form and data collection form were sent to parents via their children's kindergarten teachers. Following their completion, the consent and data collection forms were returned by parents to the children's teachers, then forwarded onto the researcher. Following completion of the data collection portion of this study, a total of 590 forms were ultimately accepted for data analysis process.

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Data Analysis

The study utilized mixed-methods research design to analyze the collected data. The primary quantitative component involved analyzing responses from 590 kindergarten children's parents in Oman and the UAE, who completed a closed-ended online questionnaire. This analysis focused on identifying patterns in the availability of digital devices, the screen time of both children and parents, and the specific parental mediation strategies employed. The quantitative findings were used to compare digital lifestyles and parenting approaches between Omani and Emirati families. A qualitative component was also used to provide additional depth to the comprehensive understanding of children's screen time. The final data analysis process included 590 accepted forms.

Results

Children's Digital Life in the Home Settings

It was revealed in the study results that the participant children lived in digitally rich home environments, which included a variety of digital technologies such as having television and Internet access. The availability of each digital technology in the home setting of children within this study is presented in Table 3.

Children's ownership of the devices

Table 3.

Digital environment of young children in their home settings

	Oman (n=400)	UAE (n=190)	
Televisions			
None	0.0%	0.0%	
1 television	70.4%	24.7%	
2 televisions		20.3%	55.2%
3 or more televisions		9.3%	20.1%
Smartphones			
None		0.0%	0.0%
1 smartphone		38.8%	18.9%
2 smartphones		26.8%	47.9%
3 or more smartphones		34.4%	33.2%
Computers (i.e., desktops, laptops)			
None		2.5%	9.4%
1 computer		54.6%	20.0%
2 or more computers		42.9%	70.6%
Tablet computers (i.e., iPads, android tablets)			
None		1.8%	10.0%
1 tablet computer		57.1%	27.9%
2 or more tablet computers		41.1%	62.1%
Gaming consoles (e.g.,PlayStation, Xbox)			
None		71.2%	68.9%
1 gaming console		28.8%	31.1%

Based on the data presented in Table 3, televisions and smartphones had the highest rates of availability in the home. For Omani families, 70.4% owned one television, 20.3% owned two, and 9.3% owned three or more. In contrast, 24.7% of Emirati families owned one television, while 55.2% owned two, and 20.1% owned three or more. These figures show that a larger proportion of Emirati families owned multiple televisions compared to Omani families.

Smartphones were the next most available digital technology for young children. Among Omani families, 38.8% owned one smartphone, 26.8% owned two, and 34.4% owned three or more. Meanwhile, 18.9% of Emirati families owned one smartphone, 47.9% owned two, and 33.2% owned three or more. The data indicates a higher rate of multiple smartphone ownership among Emirati families.

Tablet computers had the third highest availability. Among Omani families, 57.1% owned one tablet and 41.1% owned two or more. For Emirati families, 27.9% owned one tablet, while 62.1% had two or more. The results show a higher rate of multiple tablet ownership among Emirati families.

Furthermore, regarding computers, 54.6% of Omani families owned one and 42.9% owned two or more. In comparison, 20.0% of Emirati families owned one computer, while 70.6% had two or more. The data suggests a higher rate of multiple computer ownership for Emirati families. Gaming consoles had the lowest availability, with ownership rates of 28.8% among Omani families and 31.1% among Emirati families.

Table 4.

Screen time of Omani children and parents per day

Screen time	<1 hour	1 to 2 hours	2 to 3 hours	>3 hours
	%	%	%	%
Children				
Television	70.5	5.3	4.3	20.1
Smartphones	53.9	7.5	5.5	33.1
Tablet computers	56.4	9.3	4.0	30.3
Parents				
Television	74.7	20.3	3.8	1.3
Smartphones	75.9	14.3	6.8	3.0
Tablet computers	84.7	11.3	2.5	1.5

Based on the analysis, a majority of children's screen time on devices such as televisions, smartphones, and tablets is less than one hour per day. However, a significant minority of children show concerningly high rates of use: 20.1% of children spend more than 3 hours watching TV, 33.1% spend over 3 hours on smartphones, and 30.3% use tablet computers for more than 3 hours.

In contrast, the daily screen time for parents shows a different pattern. More than 74% of parents report spending less than one hour on their devices. Only a small percentage of parents (3%) spend more than three hours on smartphones, highlighting a notable difference in screen use habits between the two groups. (see Table 4).

Table 5.

Screen time of Emirati children and parents per day

Screen time	<1 hour	1 to 2 hours	2 to 3 hours	>3 hours
	%	%	%	%
Children				
Television	67.4	22.6	6.3	3.7
Smartphones	54.7	25.8	6.3	13.2
Tablet computers	60.5	28.9	6.8	3.7
Parents				
Television	59.4	31.6	6.8	2.1
Smartphones	48.4	36.3	10.5	4.7
Tablet computers	56.3	34.7	8.4	0.5
Computers	49.5	28.9	10.0	11.6

The analysis of screen time for UAE children and their parents reveals distinct usage patterns. A major finding is the high screen time among a notable minority of children. While over 54% of children spend less than one hour on devices such as televisions, smartphones, and tablets—a pattern similar to Omani children—a significant 13.2% spend more than three hours on their smartphones.

In contrast, parents exhibit a different trend. Over 48% of parents spend less than an hour on technological devices daily. However, a small percentage of parents (11.6%) do report high screen time, spending more than three hours on computers or laptops. (See Table 5).

Table 6.

Social aspects of children's use of digital devices

	Oman (n=400)	UAE (n=190)
Social aspects of digital device usage	%	%
Location within the home of children's interaction with digital devices		
In the sitting room (open area for every-one)	70.8	73.2
In their own room	20.7	16.4
In the kitchen	8.5	10.4
People who accompanied children during interaction with digital devices		
On their own	49.6	25.8
With an adult	34.5	40.0
With another child/peer	15.9	34.2
Parental mediation of children's usage of digital devices		
Limiting screen time	31.1	53.3
Accompanying children during usage	29.6	48.9
Allowing usage at a specific time (i.e., weekend, vacation)	48.7	26.9
Using software to limit content	33.6	44.1
Explaining to children how to appropriately use digital devices	39.7	38.3
Denying usage	21.1	26.2

The data reveals some interesting differences and similarities in how parents in Oman and the UAE approach their children's digital device use.

- Location of Use: In both countries, the majority of children use digital devices in a common, open area like the living room. This suggests that parents prioritize a shared, visible space for screen time. This could indicate a strategy to keep children's online activity in a public setting, making it easier to supervise and fostering a sense of shared family space.

- Supervision: A significant difference emerged in how children are supervised. While nearly half of Omani children (49.6%) use devices by themselves, a majority of children in the UAE (40%) are with an adult. This contrast might point to different cultural norms or parental comfort levels with unsupervised screen time. It's worth exploring what factors contribute to this difference, such as family structure, work-life balance, or differing beliefs about a child's readiness for independent digital navigation.

- Mediation Strategies: Parents in both countries use a mix of strategies to manage screen time. In the UAE, parents primarily focus on limiting screen time (53.3%) and accompanying children (48.9%). This aligns with the observation that children in the UAE are more often with an adult while using devices. Omani parents, on the other hand, more frequently use specific time allowances (48.7%), such as on weekends or during vacations, suggesting a focus on structured, scheduled access rather than constant supervision.

- Education and Technology: A notable similarity is the high percentage of parents in both countries who explain appropriate usage (39.7% in Oman and 38.3% in the UAE). This shows a shared understanding of the importance of digital literacy. In addition, a good number of parents in both countries use software to limit content, highlighting a reliance on technological solutions to support parental mediation.

- Denial of Access: Interestingly, denying access to devices is a less common strategy in both countries. Only a small percentage of parents in Oman (21.1%) and the UAE (26.2%) use this approach. This could imply that parents view digital devices not as a privilege to be denied but as an integral part of modern life that needs to be managed and guided.

Discussion

This study provides valuable insights into the digital media landscape within Omani and Emirati households and the parental mediation strategies employed. The findings can be discussed at a deeper level by examining the implications of a "technologically advanced" environment, the nuances of device availability, and the discrepancy in screen time compared to global trends.

The finding that Omani and Emirati children are immersed in technologically advanced homes, with high availability of televisions, smartphones, computers, and tablets, is a crucial starting point. This mirrors findings by Konca (2021) in Turkey and aligns with broader trends noted by Merdin (2017) and Ofcom (2019). This pervasive access means that digital engagement is not an exception but a norm. This context necessitates a shift from a discussion of "if" children use technology to "how" and "why." The high availability of devices places a greater burden on parents to develop effective mediation strategies, as simply limiting access is becoming less feasible. It highlights the importance of fostering digital literacy from a young age, so children can navigate this environment safely and constructively.

While the study confirms that core devices like televisions, smartphones, and tablets are widely available, a deeper analysis of the data on usage time reveals intriguing patterns. The study indicates that most children spend less than one hour on these devices, a finding that is consistent with studies by Given et al. (2014), Konca (2021), Merdin (2017), and McDaniel and Radesky (2018). This is a significant finding, as it contrasts with some global data that suggests much higher screen time. For example, Merdin (2017) found that Turkish children spent 100 minutes on television and 57 minutes on smartphones per day, which is higher than the findings for Oman and the UAE.

This study provides a rich, multi-layered perspective on the digital habits of young children in Omani and Emirati households. By examining where children use devices, who they use them with, and the specific mediation strategies parents employ, we can draw deeper conclusions about the cultural and social dynamics of play.

The finding that a majority of children in both Oman and the UAE use digital devices in communal spaces, such as the living room, is a critical piece of the puzzle. This aligns with findings from Konca (2021) and Plowman et al. (2010). This choice of location is not accidental; it is a fundamental mediation strategy in itself. By keeping screen time in an open, shared area, parents can maintain a high degree of transparency and direct supervision. This approach is consistent with the recommendation by the AAP Councils on Communications and Media (2016) that children use digital tools in common areas with adult guidance. This physical proximity allows for "co-viewing" and immediate intervention, which can prevent exposure to inappropriate content and foster family interaction. It underscores a preventative approach to digital safety, where visibility is a primary tool for parental control.

The study highlights a fascinating and significant difference between the two countries: while most Omani children use devices by themselves, Emirati children are more likely to use them with an adult. This finding is particularly notable when contrasted with Konca (2021) and Merdin (2017), which stated that most children use digital devices alone. This divergence suggests different cultural or social norms regarding independent versus supervised digital exploration.

- Omani context: The greater tendency for unsupervised use might reflect a cultural perspective that encourages independence and self-reliance in children. It could also be a result of differing family structures or parental work schedules, which may make constant supervision more challenging. The focus on providing devices during "specific times" (e.g., weekends) for Omani parents could be a response to the inability to provide continuous supervision, opting instead for structured access.

- Emirati context: The higher rate of co-use with an adult aligns with the observation that Emirati parents prioritize "accompanying children during usage." This could be indicative of a more protective or involved parenting style, where digital time is viewed as a shared activity rather than a solitary one. This is also in line with the suggestion by Dore and Zimmermann (2020) that sharing devices or having parental controls can promote safer technology use.

The study effectively demonstrates that parents in both countries employ a variety of mediation strategies, mirroring the findings of Livingstone et al. (2015) and Nikken and Schols (2014). However, the specific techniques vary:

- UAE Parents: Primarily focus on limiting screen time and accompanying children, indicating a hands-on, direct supervision approach.

- Omani Parents: Tend to use specific time allowances, suggesting a structured, rules-based approach that may be a substitute for constant supervision.

- Shared Strategies: Both groups recognize the importance of explaining appropriate usage, a crucial step in fostering digital literacy.

The finding that many parents struggle with using software for content limitation—a result consistent with Konca (2021), Livingstone et al. (2015), and Nikken and Schols (2014)—highlights a significant gap. This points to a need for parental education and support in navigating the technical aspects of digital mediation. As argued by Straker et al. (2018), educating parents is a critical step to improving their ability to manage screen time.

The discussion correctly links digital habits to the broader family environment, as highlighted by Charissi & Rinta (2014), Konca (2021), and Vandewater et al. (2005). The call for promoting physical activity and advocating for a balanced use of digital and traditional educational resources (Smart et al., 2020) demonstrates a forward-thinking perspective. Ultimately, the study and its analysis confirm that effective digital parenting is not just about rules and restrictions; it is about modeling behavior, fostering open communication, and creating a supportive home environment where technology is integrated thoughtfully and safely into family life.

Conclusion

The study's core research questions focused on two key areas: the digital technology environment in Omani and Emirati homes and the parental mediation strategies employed. The findings provide clear, distinct answers that can be translated into specific conclusions:

1. Digital Environment: The data confirms that young Omani and Emirati children are immersed in a technologically rich environment, with high availability of diverse digital devices. This is a critical foundation for all subsequent discussions.

2. Parental Mediation: The study reveals that mediation strategies differ significantly between the two countries, not just in degree but in kind. Emirati parents favor direct, hands-on mediation through limiting screen time and accompanying children. In contrast, Omani parents lean towards a rules-based, structured approach by designating specific times for device use. This distinction is a central finding that must be the basis for all recommendations.

Concrete Policies and Practical Recommendations

Based on these specific findings, these are the recommendations targeted for various stakeholders:

For Parents:

- Emirati Parents: Given the preference for direct supervision, parents should be encouraged to continue this approach. Practical advice could include using "co-viewing" as a teaching tool to discuss online content and digital citizenship. This strategy can be framed as an opportunity for bonding and mentorship, not just control.

- Omani Parents: Since "specific time" is a common strategy, parents should be given tools to make this approach more effective. This could include creating family "media plans" that clearly define when devices can be used. Furthermore, educational workshops could guide parents on how to transition from simply setting time limits to engaging in meaningful discussions about the content their children consume during these designated periods.

- For All Parents: The finding that a significant number of parents in both countries already explain appropriate usage is a strength. Recommendations should be made on this foundation. Parents can be advised to utilize this strength by integrating regular, open conversations about online safety and critical thinking into their routines. This moves beyond a reactive stance to a proactive, educational one.

For Schools and Government:

- Educational Support for Parents: The study's data, which showed that a notable portion of parents in both countries do not effectively use software for content limitation, directly supports the claim that "parents may need support." This is a specific finding, not a general claim. Therefore, government bodies and schools can collaborate with:

  - Develop and distribute guides on how to use built-in parental controls on common devices and platforms.

  - Host workshops and online tutorials specifically on digital safety software.

  - Create public service campaigns that demystify technological mediation, making it accessible to all parents, regardless of their technical expertise.

- Curriculum Integration: Academic institutions should be encouraged to integrate digital citizenship and literacy into their curriculum, making it a shared responsibility with parents. This includes teaching children about online safety, critical evaluation of content, and respectful online behavior.

A Refined Conclusion

In light of these specific findings, a more accurate conclusion is that the digital environment in Oman and the UAE is not uniform in its mediation. While both countries have technologically rich homes, the strategies parents employ is distinct and culturally influenced. The data directly supports the need for tailored, evidence-based interventions. The finding that many parents struggle with a potentially powerful tool like software-based mediation provides a clear and actionable path forward for educational and governmental bodies. By providing specific training and resources, they can empower parents to move from general supervision to sophisticated and effective digital mentorship, ultimately ensuring a safer and more enriching online experience for children in both nations.

Limitations

A variety of limitations should be considered in the current study. First, the sample size was limited, which is why the results cannot be considered nationally representative. During the data collection and online survey was used to collect data. Hence, there is uncertainty regarding the level of parental involvement in the study. Presumably, the participants are assumed to be the children's parents or their primary caregivers. Furthermore, the study acknowledges the significance of the family environment where children reside and the technological tools available in their homes, along with the responses provided by parents to the questions. Future research could delve deeper with observational and interview-based studies directly involving children.

Data availability

The data supporting the findings of this study are available from the corresponding author upon request

Competing interests

The authors declare no competing interests.

Ethical approval

This article does not contain any studies with human participants performed by any of the authors.

Informed consent

By giving their consent, parents officially approved of their participation and their children in the study.

Additional information

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