

Examining Parents Perception on Elementary School Children Digital Safety

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Abstract

Children are exposed to digital devices at an early age. This study examines parents' perception of student digital safety on technology use, time spent, parent concerns and knowledge on various digital safety topics. Through a survey-based study, we analyzed data collected from 113 parents. Parents mentioned that their kids use Internet via tablets and laptops primarily to watch videos, play games, and for schoolwork. Parents were knowledgeable about apps and games their children used for education and entertainment. Regarding time limits and restricting access, 40% of parents let their kids online for 1-2 hours in a day and 47% of parents set time limits. Parents are concerned all the time about their child's digital safety with the biggest concern being their kids being exposed to sexual content and them talking to strangers. Parents perceive themselves to be knowledgeable on most of the digital safety topics discussed in this study. Parents recommend to ensure age restrictions and identity verification when using various websites and games. This study has implications for parents of elementary school children.

Keywords: Digital Safety, Elementary Education, Parent Perception, Technology Use, Digital Citizenship

Introduction

Children's access to digital media provides opportunities to greatly enhance their learning, yet also creates potential situations that could detrimentally impact their safety and future (Chassiakos, Radesky, Christakis, Moreno, & Cross, 2016). With increased access to digital devices, children have begun to create digital footprints in the online environment, which also risks protection of their privacy (Chawla, 2018). Inevitably, digital exposure and usage, both in and outside of school, by students as young as age 5 have become the norm in the current digital society. Children as young as age 4 spend an average of 20 minutes a day using digital technology, and many are immersed in the use of touch screen tablets and mobile apps that entertain (Neumann, 2015). Furthermore, excessive use of Internet and social media leads to challenges with children's physical and mental health (DePaolis & Williford, 2019).

Additionally, Kamenetz (2019) highlighted a study from the American Family Survey that stated the overuse of technology has overtaken drugs, sex and bullying as the biggest parental worry. For this reason, fostering and facilitating the dynamics of healthy behaviors with student online relationships, conflict and identity is pertinent to producing responsible 21st-century learners in our schools and communities (Hollandsworth, Dowdy & Donovan, 2011). Since students are exposed to digital devices from an early age, it is important to ensure student digital safety in online settings. Parents and teachers are important components of student digital safety as teachers are a source of information about student digital behavior at school whereas parents know student digital habits at home. We examine digital safety topics guided by Ribble's digital citizenship framework on Respect, and Protect (Ribble, 2015). Respect, Protect and Educate were three core elements identified by Ribble as important for digital users to responsibly use technology. In this study, we focus on the elements of respect and protect and

some of the nine elements that Ribble proposed as essential elements for digital citizenship. The digital safety topics including, cyberbullying, digital security and privacy, digital footprint and digital identity and digital netiquette are discussed in the next section.

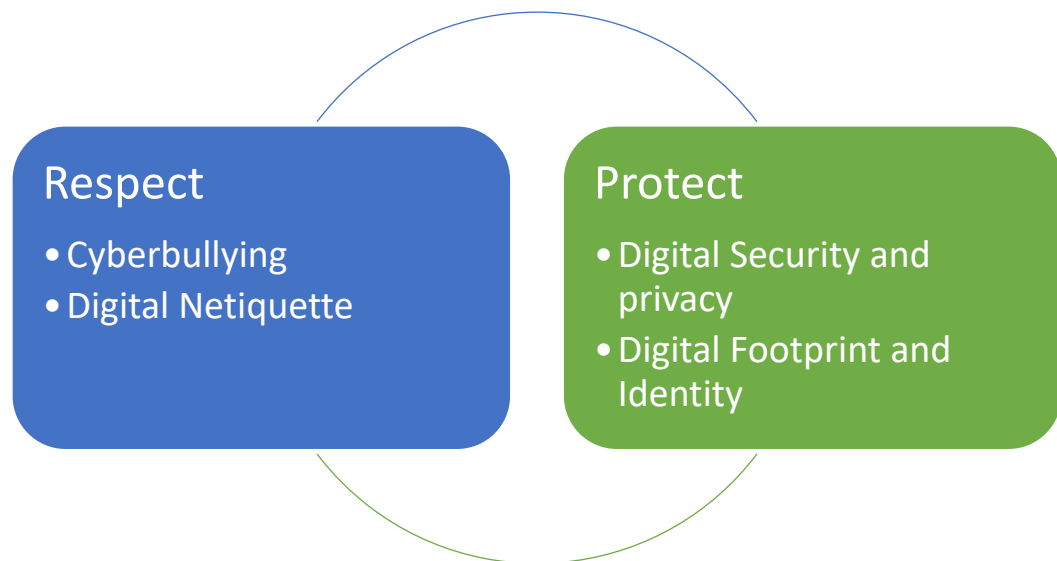


Figure 1. Respect and Protect

Cyberbullying

Cyberbullying is bullying that takes place over digital devices such as cell phones, computers, and tablets (Martin et al., 2019). Advancements in evolving technology have created more opportunities for cyberbullying occurrences to happen privately among children through direct messaging and social media features and tools (Li, 2006). When looking at reported accounts, the School Survey on Crime and Safety (SSCS) developed by the US Department of Education asked public school principals about the prevalence of violence and crime in their schools pertaining to cyberbullying. Results from the SSCS were from a national representative sample of more than 3,000 public K–12 schools. Findings from the survey showed that the percentage of schools with principals reporting occasional cyberbullying was at 54 percent in

2016. There was an increase in the percentage of schools with principals reporting cyberbullying on a daily or weekly basis from 7.9 percent in 2010 to 12 percent in 2016. In elementary schools, teachers and administrators can play a large part in reducing cyberbullying among students. For example, a study conducted by Espelage, Hong, Rao and Thornberg (2015) revealed that students who felt they had no sense of belonging in school and reported teacher dissatisfaction were more likely to share they had been bullied.

Developing quality relationships with teachers and school staff can serve as a way to prevent and intervene for cyberbullying. Holfeld and Leadbetter's (2017) study with pre-adolescents revealed that positive experiences of school climate decreased cyber victimization. The study emphasized the important role schools have in preventing cyber victimization. On the flip side, a study with 29 third-graders disclosed that 21 of them did not feel comfortable enough to confide in an adult about a bullying situation (Wilson, 2019). Cyberbullying through covert attacks online in private messaging or digital texts can, at times, be hard to detect, so trusted adult relationships provide an important way for someone to intervene and prevent emotional damage in children. "Flaming," the most frequent form of cyberbullying with elementary students, inflicts emotional harm through insults, threats and name calling (Dulovics & Kamenská, 2017). According to DePaolis and Williford (2019), elementary-school students who are victims of cyberbullying may experience negative effects (e.g., self-esteem, school disconnection and depression) well into adolescence and young adult years.

Digital Security and Privacy

Digital security refers to how one can secure identity and technology in the online world, and digital privacy refers to the privacy of the digital information shared, as well as the privacy of the individual sharing it (Martin et al., 2019). Students today are online more than ever, due to

the increased affordability of mobile devices, family phone plans and increased accessibility of the Internet. Currently, 75% of US children under age 8 use mobile devices (Liu, Wang, Guo, & Hong, 2016). Additionally, young children between four and five are now online on tablets and cell phones, frequently without adult supervision (Edwards, Nolan, Henderson, Mantilla, Plowman & Skouteris, 2016). This behavior presents a challenge because young children lack the ability to make independent decisions and are not equipped with the necessary knowledge or awareness to navigate their own online activity and privacy (Sziron & Hildt, 2018). As children learn and play online, their personal information has to be protected by infrastructure, protocols, or adult supervision.

According to Moshfegh and Ebrahimi (2018), children with easy access to the Internet and cellphones are more likely to be victims of or be exposed to online harassment. Concerns for privacy protection for children led to the passage of the Children's Online Privacy Protection Act (COPPA) in 1998, with the key purpose of managing the protocol of services that may target children under age 13. These online operators are limited in the collection of information from children, with parental consent restrictions. COPPA's efforts are essential to protecting children, as many of children struggle to understand the importance of security and privacy settings. Findings from a study conducted by Stoilova, Livingstone and Nandagiri (2019) revealed disagreement about the appropriate minimum age for apps, and that many children do not know or check the age requirements prior to using them. Another study conducted by Gelman, Martinez, Davidson and Noles (2018) showed that young children felt it was okay to utilize mobile GPS tracking to track another person's position, thus jeopardizing the digital privacy of others. With youth currently accessing and digesting online media at excessive rates, it is imperative that we educate students on how to consume and produce content safely.

Digital Footprint and Digital Identity

A digital footprint is the trail of data one creates while using the Internet. Digital identity refers to how one perceives oneself and how others perceive that individual's online activity (Martin et al., 2019). Today's children may have more extensive and diverse online identities than prior generations (Buchanan, Southgate, Scevak & Smith, 2018). Known as digital natives, these younger users were born into a digital world, with an immediate digital footprint and identity captured in photographs by their families that the student may later regret were ever posted (Nelissen & Van den Bulck, 2018). By the time they are in upper elementary school, children have access to devices that could enable them to change their own digital identity and create a digital footprint on their own terms. It is important for younger users to be aware of why it is beneficial to create a positive digital identity (Buchanan, Southgate, Smith, Murray & Noble, 2017). Digital identities and footprints should be safeguarded or protected, because negative ones can have long lasting consequences that manifest permanently. Digital artifacts created online by children at a young age that are negative can challenge identity transitions into adolescence and into adulthood if they can't be deleted or removed online. Parental involvement and adult supervision with children are crucial components toward building character and a positive identity, both online and in the real world.

Digital Netiquette for Communication and Collaboration

Digital netiquette refers to the formal or informal rules that apply when communicating online (Martin et al., 2019). An influx of Chromebooks and tablets in US classrooms, and the associated push for children to "learn tech," has made knowing how to communicate and collaborate online an essential 21st-century skill. According to Dwyer (2016), globalization has created the need for children to understand how to communicate across time and space in a

global village through global literacy for future jobs and careers. In addition, a study conducted with children aged four to seven showed the ability to collaborate in a digital environment to be a key facilitator in cognitive development (Sills, Rowse & Emerson, 2016). Another study that assessed the use of tablets with 41 second-graders also showed that the use of technology encourages collaboration and engagement in this age group (Davidsen & Vanderlinde, 2016). Awareness around digital citizenship is critical in helping children as early as elementary school understand the importance of digital netiquette in the online world. Logan (2016) conducted a study that revealed only 32% of 88 fifth-grade students in California had sufficient knowledge about digital citizenship. Her findings also highlighted that most children who were active online engaged in interaction in the online space without any knowledge of digital netiquette (Logan, 2016). Therefore, it is important that we further explore digital citizenship and online experiences with children in order to implement a beneficial curriculum that will educate and equip them to navigate safely in cyberspace.

Since students are exposed to digital devices from an early age, it is important to ensure student digital safety in online settings. Collaboration between parents, teachers and technology professionals is vital for an effective digital citizenship education (Hollandsworth, Dowdy & Donovan, 2011). Besides, Mark and Nguyen (2017) highlighted the importance of consistent technology rules to maintain responsible use of technology. For instance, cyberbullying needs to be addressed by both parents and teachers whether it occurs at home or school, and the student's Internet usage needs to be monitored (Juvonen & Gross, 2008). There are free sources available for students, teachers, and parents such as Common-Sense Media for the responsible and safe usage of technology.

Parental Perception and Mediation on Children's Digital Safety

Homes these days have multiple media devices. Livingstone (2007) classified homes as media-rich homes, traditional homes, and media-poor homes. More than 45% of the homes in their study fell in this category of media-rich homes, where homes included personal computer, Internet access, telephone, video recorder, tv related games etc. The authors also classified homes into traditional homes where homes included most of the media except for the newest media and media-poor homes where media use was less than the average media use homes.

With the increase in media availability and use in homes, parents use different strategies regarding the digital safety of their children. Livingstone et al. (2017) surveyed about 6,400 parents in eight European countries and found two parental mediation strategies, enabling mediation and restrictive mediation. Enabling mediation strategies include safety efforts and parents use this when the child is skilled digitally and may not support harm. On the other hand, restrictive mediation strategies lead to fewer online risks and in cases where media use is considered problematic. This is used when parents or children are not as digitally skilled and may be vulnerable. Nikkons and Schols (2015) examined 896 parents' perceptions of young children's use of electronic screens in relationship to the child's media skills. They found that children's use and ownership of TV, game consoles, computers and touchscreens, primarily depended on their media skills and age, not on parent's attitudes about media for children. They found parents using five mediation strategies including co-use, supervision, active mediation, restrictive mediation, and monitoring. They also found that their child's media skills and activities were strongly related to parental mediation styles.

Parents also seek for information on how to protect their children. Davis (2012) identified three different information seeking methods, (a) protective information seeking to protect children from encountering harmful content; (b) problem-solving information seeking to support

children when negatively affected by technology; and (c) attentive learning, by attending to media resources. The top three ways parents learn about digital safety included, friends and family, the Internet and from presentations. In addition, Davis found that parents' biggest concerns regarding digital safety were, their kids accidentally being exposed to pornography, sexual content in Internet entertainment and sexual solicitation by strangers.

Purpose of this Study and Research Questions

There is limited research on examining parent perception of digital safety of their children through the lens of parental mediation and information-seeking. There is still a need to examine parental concerns and knowledge on digital safety of their children. Considering parents are a significant part of student life, this study examines parents' perception of student digital safety and specifically examining their concerns and their knowledge on various digital safety topics. In this survey-based study, we examine the following research questions.

1. What technology do children use and what activities do they use it for?
2. What are some mobile applications that children use and online games that they play?
3. How much time do children spend on technology and what restrictions parents have on time limits and access?
4. To what extent are parents concerned about the digital safety of their children and what are they concerned about?
5. Is there a difference based on parents' concerns and their demographics (age and gender), and the time kids spend online?
6. To what extent are parents knowledgeable on the digital safety topics, cyberbullying, digital footprint, digital netiquette, digital security, digital privacy, and digital identity?

7. Is there a difference based on parents' digital knowledge and their demographics (age and gender), and the time kids spend online?
8. What are some parent recommendations to make the Internet safer for their children?

Method

This study implemented a survey design research to investigate parents' perceptions of elementary students' digital safety.

Participants

One hundred and thirteen parents responded to the survey. Majority of the respondents were female (85%), and about 12% were male. One participant selected other and two participants did not respond to the question. Only three participants (2.7%) were between 20-30 years. Approximately, half of the parents (53%) were between 30-40 years, and 44% of parents were above 40 years. Among the 113 parents, 74 of them (66%) were located in suburban areas while 20% lived in urban areas and 15 % were in rural areas. Almost all respondents (98.2%) were living in the United States, and 78% of the parents were from south-eastern states. Almost all of them have one child (62%) or two children (34%) in elementary schools. Four respondents have 3 – 5 kids in elementary schools. Children ages varied between 5-10, and the distribution of children's ages were as 5 (20%), 6 (23%), 7 (20%), 8 (31%), 9 (13%) and 10 (28%).

Instrument

The survey instrument consisted of five sections, demographic information of children (age, gender), child use of technology, parent concerns regarding digital safety, open-ended questions about child use of technology, parent knowledge about digital safety, and demographic information of participants (age, gender, area, country, state). An example question of child use of technology was how much time your kid spends online. The survey included Likert type

questions for parent concerns regarding digital safety (0-not concerned to 3-very concerned) and parent knowledge about digital safety (0 - I know nothing to 3-highly knowledgeable).

Cronbach's alpha was used to check the internal reliability of the digital safety concerns, and digital safety knowledge scales. The Cronbach's alphas of digital safety concerns and digital safety knowledge were .90 and .92, respectively, and these values were above the acceptable reliability measure of .7 (Nunnally, 1978). Open-ended questions asked about which games, apps children use and how to make Internet safer for children.

Data Collection

An online survey was distributed by using personal connections of researchers to reach out to the parents who have at least one child in elementary school. The researchers shared the online survey on social media and via emails. The survey window was open for 6 months from October 2019 to March 2020. The participation to the online survey was voluntary. IRB approval was received, and online consent was signed online before taking the survey.

Data Analysis

Demographic items, child technology use and time spent items were analyzed by frequency count and percentage. Likert type questions were analyzed with descriptive statistics. Group mean differences was examined with independent t-tests regarding digital safety concerns and digital safety knowledge. Open-ended questions were examined using thematic analysis. The researchers coded the responses based on similarities. The percentage of codes computed based on the total number of participants.

Results

Technology Use of Children and Activities Used for

Parents mentioned that their kids use Internet to watch videos (86%), play games (85%), for schoolwork (78%) and for talking to friends (25%). The most common digital devices are tablets and laptops (See Table 1).

Table 1. Common Digital Devices used by Elementary School Children

Devices	Freq	%
Tablets	95	84.1
Laptop	67	59.3
Smartphone	58	51.3
Game console	31	27.4
Desktop	30	26.5
E-reader	12	10.6
Other	3	2.7

Mobile apps and online games

Findings from the open-ended question on the survey revealed that 92% of parents allowed their children to play online games. Among the parents that allowed their children to play online games, 96% were able to identify the types of games that their children played. Parents were more likely to allow children to engage with mobile apps than online games. Approximately 96% of parents allowed their children to engage with mobile apps and 98% were knowledgeable of the types of mobile apps used by their children.

Parents identified more mobile apps than online games used by children with 209 submissions. Among the apps identified, 77% of mobile apps identified by parents were entertainment apps versus 23% of educational apps reported. RAZ Kids was the most utilized educational mobile app identified by parents on mobile devices with children. YouTube was the most commonly used mobile app overall with children identified by parents.

Out of 168 online games reported by parents, 73% were for entertainment versus 27% for educational usage. Although, parents reported more educational usage through online games versus mobile apps, entertainment usage still exceeded education in the online gaming responses. Online educational games that were most commonly identified by parents included Prodigy and ABC Mouse. Fortnite, Roblox and Minecraft were the most identified online games overall by parents with children. Minecraft was the most identified online game by parents out of all submissions.

Video streaming apps with mobile usage among children were the most common mobile apps identified by parents. Netflix, Disney NOW, YouTube, YouTube Kids, Nick Jr. and PBS were all video streaming apps that were consistently identified in the results. Twice as many parents reported their children utilizing the YouTube app versus YouTube Kids. Additionally, several social and communication apps were identified as being used by kids on mobile devices such as Instagram, SnapChat, Tik Tok, Duo, Marco Polo and What's App, which all have an age requirement of 13 years old. Math games were the most identified type of educational and learning games used online.

Time spent and parental restrictions on time and access

Parents were asked how much time their children spend online each day. Twenty percent of parents mentioned that their kids do not have regular access to the Internet and 22% of the parents mentioned that their kids spent less than an hour. In other homes, kids spend more than an hour a day on the Internet. Forty percent of parents mentioned that their children spend 1-2 hours online, and 18% of the parents mentioned that their kids spent 3-5 hours online each day for educational and non-educational activities. In addition, a question was asked if they restricted Internet access. Several parents also set restrictions on time spent and access. Parents (47%) set

time limits for kids to be online while 30% of parents restricted Internet access. In addition, 20% of parents have both restriction and time limit for kids to be online, and only 2% mentioned that kids did not have rules about Internet access.

Parents Digital Safety Concerns

A question asked if parents felt concerned about their kids' digital safety. Parents (73%) are concerned all the time, and 10% of them are sometimes concerned about their children's online safety. On the other hand, only 16% of the parents claimed to be ready to handle a problem regarding a child's online safety.

Six Likert type questions regarding what parents were concerned about their kids' digital safety were included in the survey. In these Likert type questions, 0 indicated "Not Concerned;" 1 indicated "Somewhat Concerned;" 2 indicated "Concerned," and 3 represented "Very Concerned." Parent concerns regarding digital safety are presented in Table 2. The results revealed that coming across sexual images or content is the biggest concern ($M=2.26$), followed by talking to a stranger on a game or social networking site ($M=2.03$).

Table 2. Descriptive Statistics of Parent Concerns Regarding Their Children's Digital Safety

Concerns regarding your child's digital safety	N	M	SD
Bullying or harassment	106	1.56	0.947
Coming across sexual images or content	111	2.26	0.85
Being sent sexual images or content	108	1.94	1.061
Someone else using their photos in an inappropriate way	104	1.73	0.968
Texting with a stranger	107	1.79	1.122
Talking to a stranger on a game or social networking site	105	2.03	1.023

Demographic differences based on parents' concerns and time kids spend online

Gender was coded binary as female and male. Parent age was recoded as below 40 years (0) and above 40 years (1), and the time kids spend online was recoded as less than 1 hour (0) and more than 1 hour (1). Independent sample t-tests were conducted to examine mean difference based on gender, age and the time kids spend online on digital safety concerns and digital safety knowledge.

Gender Difference

Independent t-tests regarding parent digital safety concerns and parent gender reveal that there is no significant gender difference on parent digital safety concerns. Table 3 demonstrates descriptive statistics and t-test results among parent gender.

Table 3. *Descriptive Statistics of Parent Concerns and t-test Results based on the Parent Gender*

	Female			Male			t-test	p
	N	M	SD	N	M	SD		
Bullying or harassment	90	1.52	0.92	13	1.69	1.03	-0.62	0.54
Coming across sexual images or content	95	2.28	0.85	13	2.08	0.95	0.82	0.42
Being sent sexual images or content	92	1.89	1.06	13	2.08	1.12	-0.59	0.56
Someone else using their photos in an inappropriate way	88	1.69	1.00	13	1.92	0.86	-0.79	0.43
Texting with a stranger	91	1.75	1.13	13	2	1.08	-0.76	0.45
Talking to a stranger on a game or social networking site	90	2.02	0.99	12	2	1.28	0.07	0.94

Age Difference

Independent t-tests regarding parent digital safety concern based on their age was conducted. The t-test results demonstrated that there were not significant differences on digital

safety concerns based on parent age. Table 4 demonstrates descriptive statistics and t-test results among parent age.

Table 4. *Descriptive Statistics of Parent Concerns and t-test Results based on Parent Age*

	Below 40			Above 40			t-test	p
	N	M	SD	N	M	SD		
Bullying or harassment	59	1.54	0.93	47	1.57	0.97	-0.17	0.86
Coming across sexual images or content	61	2.21	0.88	50	2.32	0.82	-0.66	0.51
Being sent sexual images or content	61	1.89	1.07	47	2	1.06	-0.56	0.58
Someone else using their photos in an inappropriate way	59	1.71	0.95	45	1.76	1.00	-0.23	0.82
Texting with a stranger	60	1.77	1.10	47	1.83	1.17	-0.29	0.77
Talking to a stranger on a game or social networking site	60	2.02	0.97	45	2.04	1.11	-0.14	0.89

Time Kids Spend Online

Independent t-tests regarding parent digital safety concerns and time kids spend online revealed that there was no statistically significant difference between parent whose kids spent more time online and the parents whose kids spent less time online regarding digital safety concerns. Table 5 demonstrated the descriptive statistics and t-test results among the time kids spend online.

Table 5. *Descriptive Statistics of Parent Concerns and t-test Results based on the Time Kids Spend Online*

	Kids spend less than 1 hour online			Kids spend more than 1 hour online			t-test	p
	N	M	SD	N	M	SD		
Bullying or harassment	43	1.47	0.94	63	1.62	0.96	-0.82	0.41
Coming across sexual images or content	45	2.18	0.96	66	2.32	0.77	-0.85	0.40

Being sent sexual images or content	44	2.07	1.04	64	1.84	1.07	1.08	0.28
Someone else using their photos in an inappropriate way	44	1.89	0.95	60	1.62	0.98	1.41	0.16
Texting with a stranger	44	1.91	1.12	63	1.71	1.13	0.88	0.38
Talking to a stranger on a game or social networking site	44	1.98	1.11	61	2.07	0.96	-0.44	0.67

Parents Knowledge on Digital Safety Topics

Parents knowledge of digital safety topics was asked in the survey. On this knowledge of digital safety Likert type questions, 0 indicated “No Knowledge;” 1 indicated “Somewhat Knowledgeable;” 2 indicated “Knowledgeable,” and 3 represented “Highly Knowledgeable.” Parent knowledge regarding different aspects of digital safety is presented in Table 6. All mean values are above 2 which is “Knowledgeable.”

Table 6. *Descriptive Statistics of Parent Knowledge about Digital Safety*

Knowledge of Digital Safety Topics	N	Mean	SD
Cyberbullying	111	2.49	0.601
Digital Footprint	108	2.27	0.816
Digital Netiquette	105	2.05	0.965
Digital Security	109	2.23	0.777
Digital Privacy	111	2.17	0.773
Digital Identity	104	2.09	0.904

Demographic differences based on parent’s digital safety knowledge and time kids spend online

The same coding procedure for parent age, and time kids spent used for parent concerns was used for parent knowledge.

Gender Difference

Independent t-tests regarding parent digital safety knowledge and parent gender revealed that there were no gender differences regarding digital safety knowledge. Table 7 demonstrates descriptive statistics and t-test results among parent gender.

Table 7. *Descriptive Statistics of Digital Safety Knowledge and t-test Results based on the Parent Gender*

	Female			Male			t-test	p
	N	M	SD	N	M	SD		
Cyberbullying	95	2.49	0.60	13	2.46	0.66	0.19	0.85
Digital Footprint	92	2.25	0.83	13	2.54	0.66	-1.19	0.24
Digital Netiquette	89	2.01	0.97	13	2.54	0.66	-1.89	0.06
Digital Security	93	2.18	0.79	13	2.62	0.51	-1.91	0.06
Digital Privacy	95	2.14	0.79	13	2.54	0.52	-1.77	0.08
Digital Identity	88	2.05	0.91	13	2.54	0.66	-1.88	0.06

Age Difference

Independent t-tests regarding parent digital safety knowledge based on their age was conducted. Table 8 demonstrates descriptive statistics and t-test results among parent age. The t-test results demonstrated that there were not significant differences on digital safety concerns and based on parent age.

Table 8. *Descriptive Statistics of Digital Safety Knowledge and t-test Results based on Parent Age*

	Below 40			Above 40			t-test	p
	N	M	SD	N	M	SD		
Cyberbullying	61	2.43	0.64	50	2.56	0.54	-1.17	0.25
Digital Footprint	59	2.25	0.78	49	2.29	0.87	-0.20	0.84
Digital Netiquette	59	1.98	1.03	46	2.13	0.89	-0.78	0.44

Digital Security	60	2.13	0.85	49	2.35	0.66	-1.43	0.15
Digital Privacy	61	2.10	0.79	50	2.26	0.75	-1.10	0.28
Digital Identity	56	2.07	0.85	48	2.1	0.97	-0.18	0.86

Time Kids Spend Online

Independent t-tests regarding parent digital safety knowledge and time kids spend online revealed that parents whose kids spend more time online are more knowledgeable than the parents whose kids spend less time online regarding cyberbullying, digital netiquette, and digital security. Table 9 demonstrates the descriptive statistics and t-test results among the time kids spend online. There were significant differences on three digital safety knowledge topics, cyberbullying, digital netiquette and digital security when kids spent more than an hour online in comparison with kids who spent less than 1 hour online.

Table 9. *Descriptive Statistics of Digital Safety Knowledge and t-test Results based on the Time Kids Spend Online*

	Kids Spend less than 1 hour Online			Kids Spend more than 1 Hour Online			t-test	p	d	Relative size
	N	M	SD	N	M	SD				
Cyberbullying	45	2.33	0.64	66	2.59	0.554	-2.258*	0.026	0.434	medium
Digital Footprint	44	2.14	0.734	64	2.36	0.861	-1.402	0.164	NA	
Digital Netiquette	42	1.81	1.018	63	2.21	0.901	-2.099*	0.038	0.416	medium
Digital Security	44	2.05	0.861	65	2.35	0.694	-2.062*	0.042	0.384	medium
Digital Privacy	45	2	0.798	66	2.29	0.739	-1.951	0.054	NA	

Digital Identity	43	1.91	0.895	61	2.21	0.897	-1.716	0.089	NA
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Parent recommendations to make the Internet safer for children

Parents identified several games that their children played that were not age appropriate as identified by the Entertainment Software Rating Board (ESRB). For example, Fortnite and Star Wars Battlefront were online games identified by parents that according to ESRB all have an age restriction of 13 and older. Assassin's Creed, Rainbow Six and Call of Duty were also games identified by parents that their children played online which according to ESRB have an age restriction of 17 and older. Additionally, when asked about safety measures that can be provided online for children, 10% of parents reported that it is the responsibility of parents to ensure age restrictions. Parents also reported that site and content restrictions such as age or identity verification is needed online and that they would like more parental control capabilities. Advertisements were also identified by parents as a concern for children's safety when engaging online.

Discussion

This research studied parents' perception of student digital safety and their knowledge on various digital safety topics. Although there is a significant body of knowledge that explores the safety of children in digital spaces, specifically among adolescents and young adults, this study sought to contribute insight towards highlighting the experiences of early school-age children. While offering several affordances of understanding the digital usage among early school-age children from the perspective of the parents, our findings also revealed several concerns from parents with children's safety online.

Parents being knowledgeable about online games and apps

The majority of parents that participated in the study were knowledgeable of the apps that their children used and were able to identify them by name. Considering that several apps identified by parents were not age appropriate for early school-age children, further research that explores whether parents knowledgeable of app features and age requirements influence accessibility to app use with children may be beneficial. Additionally, entertainment apps were identified more frequently over educational apps, which also lends the need to explore parents' perceptions of the purpose of permitting digital device use by their children. Video streaming apps were consistently identified by parents compared to educational or interactive entertainment apps, and highlights how device usage that encourages critical thinking and academic engagement was less frequent among early-school-age children in our study.

Time limits and restricted access

Screen time limits and restricted access with mobile and online apps were reported by less than half of participants. Although 40% of parents reported setting screen time limits for 1-2 hours in a day, it is crucial to further explore concisely the attitudes and beliefs of digital media consumption of parents that enforce limits versus those that do not with their children. Additionally, it is important to note that while excessive screen time can be unhealthy for early school-aged children, all screen time is not the same. Two hours each day engaging with educational apps or having a balance with entertainment apps is influentially different from a child solely engaging in video streaming during the same time frame daily. Therefore, parents must consider the time and type of digital use with their children. Moreover, parents must understand the influence of their own screen time with their children and model healthy digital media habits as well (Lauricella et al., 2015). By parents providing alternative lifestyle choices that engage children in activities outside of screen time such as reading, home art projects,

outdoor play, or helping with dinner, a regimen of balance may be established that continues into adolescence.

Parents are concerned all the time about their child's digital safety

Findings from our study also revealed that parents were consistently concerned about their children being exposed to sexual content and talking to strangers. Additionally, 10% of parents suggested that it is their responsibility to ensure the online safety of early school-aged children and monitor their engagement. Furthermore, research provided in our literature review suggests that infrequent adult supervision may be harmful for early school-age children who are not equipped to critically navigate the online environment (Edwards et al., 2016; Sziron & Hildt, 2018). Thus, parents educating themselves and children on safety precautions online such as how to report and block inappropriate content and strangers is a crucial investment towards ensuring digital safety. Parents can also utilize apps such as Family Link to manage digital apps, usage and messaging with children. Additionally, parents should meet with children regularly to evaluate and discuss digital usage and online interactions.

Parents were knowledgeable on most of the digital safety topics

Similarities and differences were identified in our study regarding parents' knowledge on digital safety topics. Consistently, parents perceive they are very knowledgeable on cyber safety information. There were also no differences based on parent knowledge and parent demographics. Although no differences were identified between demographics, they were revealed with the amount of reported screen time usage and responses to certain topics. These topics included digital safety, cyberbullying, digital netiquette and security. Research highlighted in our literature contends that children who frequently access the Internet and digital devices are more likely to be victims of cyberbullying or at risk of digital safety (Moshfegh & Ebrahimi,

2018). For this reason, it is important for parents to be aware of the linkage between excessive device usage and exposure or victimization to cyberbullying and other safety concerns. Parents and educators should both invest in providing learning opportunities and support for students with navigating a technological world that is now normative in our society. Quality relationships with teachers and school staff can serve as a form of prevention and intervention for cyberbullying. In addition to schools facilitating Cyberbullying workshops, creating Cyber Safe Clubs for students to join, build relationships, and discuss their challenges in the online environment could be beneficial.

Limitations and Implications for Future Research

While the findings from this study advance the field by providing insight into parents' perceptions of their children's digital safety, there are limitations of this study as well as implications for future work. In terms of limitations, the small sample size and convenient sampling challenged to generalize the results to the population. Future survey studies should address this by expanding the participant pool and ensuring that participants represent various demographic groups, including age of children, location (urban, suburban, and rural), as well as ethnicity and household income level.

Although the digital safety knowledge and digital safety concerns scales demonstrated inter-reliability, there is potential response bias and measurement error. In future studies, researchers can mitigate the potential bias and error by conducting interviews or focus groups with participants to examine how they are interpreting questions. The survey could also be adapted to include more written responses so that participants would follow their numerical response with an opportunity to share or explain their rating.

Future research studies should extend beyond survey data and include methodologies such as interviews or focus groups to get a better sense of parents' strategies for keeping their children safe as well as their concerns about digital safety. There is also a need for interventions as well as examinations as how they work. These interventions could include workshops, seminars, or asynchronous modules related to Internet safety. These studies could examine parents' reaction to the workshops or use a pre-post design to see how the experiences influence parents' perceptions about digital safety.

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