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Young People's Conceptions and Practices of Safety in Online Environments: An Examination of Challenges, Theoretical Perspectives, Current Research, Findings, and Potential Instructional Interventions

Ross J. Todd
rtodd@rutgers.edu
State University of New Jersey

Virgilio G. Medina Jr
vmedina@qnl.qa
Qatar National Library Doha, Qatar

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Abstract
This ongoing research builds on investigations undertaken by Medina & Todd (2016, 2017) that focus on children's safety in online environments. As part of scholarly traditions centering on information and digital literacy, an emerging discourse and arena of research and service development is centering on the concept of digital wellbeing. Digital wellbeing is defined as the capacity of individuals to look after personal health, safety, relationships and work-life balance in digital settings. This paper, focusing on the specific aspect of digital safety as one dimension of digital wellbeing, presents an examination current challenges, theoretical perspectives and approaches to research, methods and potential instructional interventions in relation to children's conceptions and practices of safety in online environments. It will present current findings and provide perspectives on moving forward with the research agenda.

Context and Literature Review

Considerable attention in research and professional practice is currently being given to children's increasing immersion in online environments. This is well documented in the scholarly literature, for example, Livingstone, et al 2012, 2014; and the series of studies undertaken through the Pew Internet & American Life Project, 2001. Central to these discourses are narratives around helping children to "stay safe" online (Sasson & Mesch, 2014), as well as concerns raised by parents, carers, educators and practitioners over potential negative knowledge, and emotional and social consequences of online interactions (Ofcom, 2017). Attention is also being given to educational policy and practices by various national and state

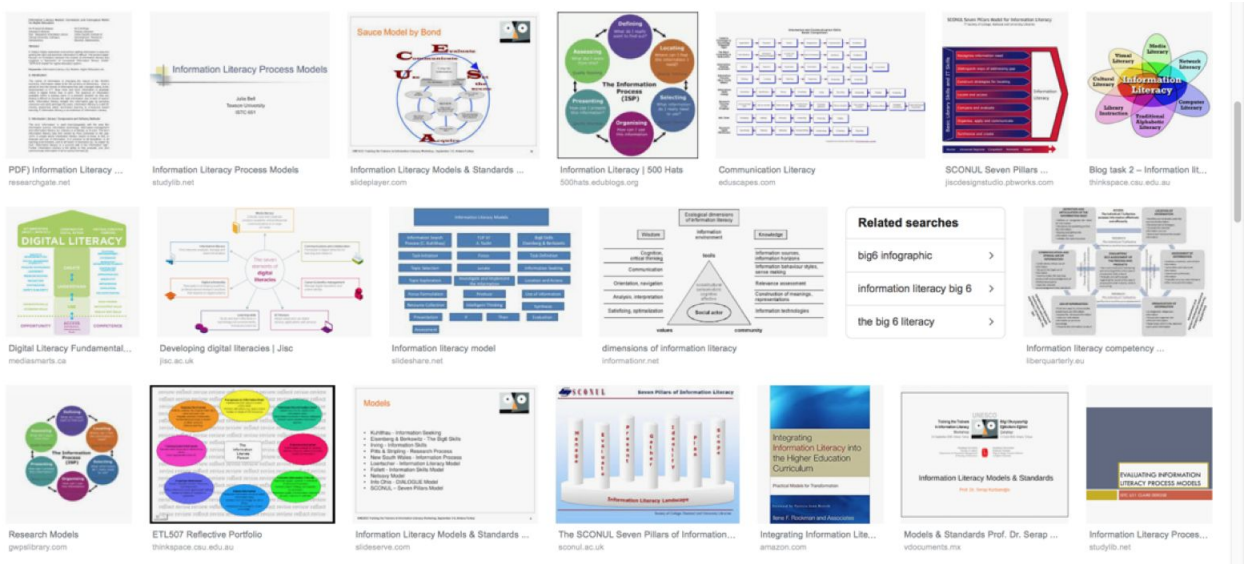
authorities, the development of government policies (Ofcom, 2017), and the proliferation of web-based online safety programs. In much of the discourse, safety is framed in terms of protection of children from potential online risks: web content, user generated content, sexual content, sexual messages (sexting), stranger contact, sexual exploitation and online grooming, cyberbullying, personal data misuse, and misrepresentation of identity in online environments (Livingstone, et al, 2012, 2015).

The rise in public anxiety and alarm about both the capacity and extent that the internet is putting children and young people at risk, and a level of moral panic over the impact of technology on childhood innocence, are further shaped by media portrayals of cases (Haddon & Görzig, 2018). For example, ABC News headline April 24, 2019: "16 Alleged child predators used social media to lure kids for sex throughout New Jersey", the ITV report (January 4, 2017): "'Kayleigh's Love Story': Police release powerful film on dangers of online grooming" **(**https://www.itv.com/news/2017-01-04/kayleighs-love-story-police-release-harrowing-video-on-dangers-of-online-grooming/**)** and The Independent (March 15, 2019): **"**Young Children Can Easily See Disturbing Content On Youtube Despite Age Restrictions" **(**https://www.independent.co.uk/life-style/gadgets-and-tech/youtube-kids-children-videos-age-restriction-peppa-pig-a8824261.html).

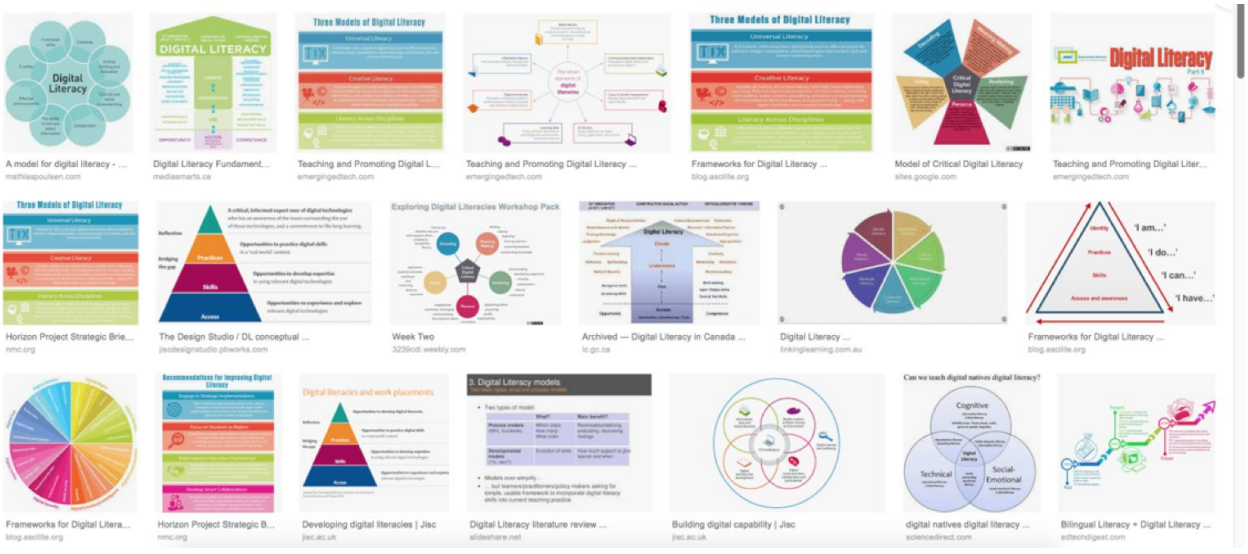
At the same time, there is criticism of the efficacy of school-based interventions that seek to develop digital practices in relation to digital safety. According to the US based *Crimes Against Children Research Center*, half of the young people in the U.S. report receive internet safety programs in schools, but little is known about what educational messages, if any, make a difference (Jones, Mitchell & Walshe, 2014). This review posed the question "are effective prevention strategies being used? It found that internet safety education is not incorporating proven educational strategies and are not founded on a strong understanding of how young people participate in digital social media, nor an understanding of practices they engage in to ensure their digital safety. They also indicated that the program materials they examined were directed toward elementary school aged children or focused on "digital literacy" topics such as privacy settings, online reputations, and avoiding e-scams (2014, p.2).

For some years the school library community has embraced these concerns through the articulation of information and digital literacy programs. This begs the question: Are the information / digital literacy frameworks predominant in Library and Information Science practice an appropriate positioning for building our understanding around conceptions and practices in relation to children's safety in online environments? The American Library Association's digital-literacy task force offers this definition: *"Digital literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills."* http://www.ala.org/ala/acrl/acrlissues/acrlinfolit/infolitoverview/introtoinfolit/introinfolit.htm. In his review of the information literacy landscape, with a focus on developing sustainable future for the information and digital literacy agenda, Todd (2017) highlighted a number of issues which included: (1) decades of terminological confusion / power / authority / identity / territory struggles, (2) a plethora of understandings, descriptions and models of information and digital literacy / literacies, (3) hundreds of information literacy models based either on small-scale

single research or untested hypothetical models, (4) a similar pattern being emulated with digital literacy, without meta-analysis, limited theorizing theory development and pedagogical development, (5) little intellectual critique, and failure to make explicit the various theoretical stances that underpin standards, models, practices, (6) little exploration of what constitutes meaningful pedagogy for information and digital literacy instruction and interventions, and (7) limited substantive articulation of the impacts / benefits of information literacy agendas, beyond mastery of a range of information literacy skills:



Plethora of Information Literacy Models
(Image retrieved 8th July Google image search: "information literacy models")



Growing plethora of Digital Literacy Models
(Image retrieved 8th July Google image search "digital literacy models")

In a recent critique of digital and media literacies, Hobbs (2017) argues that educational responses in terms of information & digital literacy are typically framed in terms of skills, often presented as a checklist of skills to be taught. She further argues that digital literacy education generally emphasizes the negative effects of media and attempt to use digital literacy education to mitigate those effects, and in addition, digital literacy education tends to target a specific "problem" where a particular vulnerability to media messages is identified and a safety intervention is designed. According to Hobbs, the problem is compounded when researchers develop a short-term, (often) grant-funded intervention and report on informal learning practices that involve children and youth who participate in digital media literacy programs or online communities. In terms of assessment and impacts, she indicates use of a predominance of scaled self-report measures, drawing on standards-based approaches to information and digital literacy; as well as performance-based measures, all determined by adults.

While there is a plethora of small-scale research studies involving school students in terms of digital competencies, digital literacy, information literacy, and digital citizenship, much of this work focuses on information handling skills development and the attainment of educational standards around a range of pre-determined digital skills, as well as the development of sets of instructional interventions to foster the development of these standards. One of the weaknesses identified here is that educational interventions tend to be skills-centric, without being positioned in a deeper understanding and evidence of the broader sociocultural landscape and its collective and institutional practices, where learners are at, their online experiences, and their own conceptions and practices surrounding safety in online environments. Indeed, it might be said that the skills around children's safety are assumed and driven by concerned adults and the voices of children in terms of their own understandings and practices, are largely absent.

The problematic of safety in online environments is further compounded by multiple terms such as internet safety, media safety, online safety, digital safety, and cyber safety. Safety is rarely defined, and when it is, these tend to be circular definitions such as "safety is about trying to be safe", without explication of what "safety" and "safe" are or articulating underpinning assumptions. In these definitions there are implied notions of guiding and protecting children by others and that children are not capable of protecting themselves. "Protection" tends to be the dominant meaning. The boundaries of online safety essentially are an adult consensus about range of risks, and especially a focus on risks and excluding opportunities, and the need to protect children from these risks. Often risks and harm are tied together, even though conceptions or evidence of harm are unclear, given the ethical aspects of measuring harm. (Livingstone, et al, 2012). Overall, the scholarly and media discourses present the substantive debates around who is responsible for empowering and protecting children online: government, educators, industry (web content and service providers), and families. These debates are also beginning to address several other aspects, such as the continuities between children's online and offline worlds – online activities are viewed as extensions and modifications of practices located in everyday life (Haraway, 1985, Chayko, 2016). Chayko argues that "digital life is simply real life", and that terms such as "virtual", "cyberspace" even "digital" are misleading in that they imply something almost, but not quite real. (p. 60).

In addition, there are calls to reject over-celebratory and offensive notions of "digital natives" and "digital immigrants (Prensky, 2001), and to reject technological determinism accounting for radical societal transformations due to technology (Alder, 2006). There are also calls to address the public anxiety and moral panic over impact of technology on childhood innocence and freedom, and to move beyond panicky accounts of the dangerous internet based on high-profile small number of cases, and to understand that while safety is important, protection must be balanced against enabling children's rights, pleasures and opportunities, including opportunities for risk-taking. Chayko (2016) states that in the midst of robotics, automation, and devices immersion, we need to focus on a critical set of dynamics and realities around human agency (Chayko, 2016, p.60).

All of these discourses and debates thinking speak to moving to a more encompassing view of the child and human agency constructed around the notion of digital wellbeing. According to JISIC (2017), digital wellbeing refers to the "Capacity to look after personal health, safety, relationships and work-life balance in digital settings" (JISC, 2017). It gives attention to re-aligning technology with humanity's best interests, acting safely and responsibly in digital environments, using personal digital data for positive wellbeing benefits, using digital media to foster community actions and wellbeing, managing digital stress, workload and distraction, and acting with concern for the human and natural environment when using digital tools.

These complexities raise the challenge of researchers engaging in child-centered research. In child-centered research, the concept of *the child* is considered to be socially constructed: "knowledge creation rather than knowledge extraction" and which heavily influenced by social interactions and conventions (Clark & Moss, 2011, p. 4; Berger & Luckmann, 1966). It recognizes that children should not be limited by dominant perceptions of them as not possessing the capabilities and competencies to be involved in research (Hart, 1992; James 2007, Corsaro, 2014). It utilizes methods that "capture the nature of children's lives as lived" rather than studying their actions in contrived situations (Hogan & Greene, 2005, p. 3). It also entails an openness to the use of methods that are suited to children's level of understanding, knowledge, interests and particular location in the social world (Johnson et al, 2014), and it privileges children's voices and perspectives regarding their own experiences: "participative approaches and techniques" that position participants as "experts of their reality (Hepworth et al. (2014).

Livingstone et al's work (2012) is particularly significant here. This extensive study was a large-scale survey of 25,142 children from ages 9-16 carried out in 25 European Union by the EU Kids Online Network (available at: http://www.lse.ac.uk/media-and-communications/research/research-projects/eu-kids-online). It involved 100 researchers from diverse disciplinary backgrounds who studied children's and parental perceptions in relation to: (1) how children use the internet - scoping children's internet use (amount, device, how, location of use); (2) what children do online - mapping of online activities (opportunities exploited, skills developed, risky practices engaged in); (3) what online factors shape their experience - opportunities / risks encountered such as positive content, user generated content, sexual content/messages, stranger contact, bullying, personal data misuse. (4) Identifying the outcomes for children - benefits / harm such as learning, self-esteem, sociality, values, in/excluded, coping / resilience, bothered / upset, abuse. The children were interviewed

face-to-face to obtain responses, and for more sensitive questions, were given a questionnaire form to complete on own. For each child, one parent / carer was given questionnaire with matching questions.

The findings are extensive. They show the widespread extent of young people's substantive engagement in online social networking, their active engagement in building friendship circles which involve the sharing of personal data which did not seem to make them especially vulnerable to data misuse. Children play "pretend" from childhood, and developmental theories indicate that adolescents do experiment with their identities and self-presentation, and this happens to a limited extent in online environments and was less common than expected. Overall there was no evidence that experimenting with self-presentation is associated with actually experiencing harm from online risks. Cyberbullying is an important risk with 19% of the children indicating that they have experienced some form of bullying in previous 12 months. Children who experience more psychological difficulties are more likely to be victims or perpetrators of cyberbullying. 15% respondents aged 11-16 said they had seen or received sexual messages in last 12 months, and some saw this as a form of electronically mediated flirtation, although the boundary between what is fun and what is coercive not clear for children. 23% of respondents had encountered sexual images online and offline (including TV, video, film) mostly due to accidental pop-ups rather than deliberately seeking it. Overall, of those who had encountered such images, 32% were bothered by it, which translates into 4% of total population of children; most said they coped well and got over the experience quickly. In relation to stranger danger, among 9% of those who had offline meetings met with someone with a connection to family member or friend. Older children, especially those who engage in online and offline risky behavior, are the ones more likely to go to offline meetings with complete strangers. (Livingstone et al, 2012).

What is safety?

One of the key gaps in all of the digital safety literature, the missing link so to speak, is the absence of any explication of what safety is, and the absence of examining safety as a theoretical construct:

> Is safety something you do or part of what you do? - for example, *drive safely*
> Is safe something that you be? – for example, *I promise to be safe*
> Is safety something you take? – for example, *Take safety precautions*
> Is safety something you ensure? – for example, *Ensure the health and safety of others*
> Is safety a place you go to? – for example, *The children were taken to safety*
> Is safety a real thing or do you just feel it? – *It looks safe, or does it feel safe?*
> Is safety something you think or actually are – for example, *I'm worried about my safety but am I really safe here?*
> Is safety something that just exists when you aren't in danger? – for example, *The workplace is safe because it is hazard free*
> What about when something is called "the safest" or "the safest way" – for example, *is that a perception, has worked before, or based on fact and data or just luck?* (Quebec WHO)

As mentioned earlier, safety in the context of discussions of digital safety, implies notions of guiding and protecting children by others and that children are not capable of protecting themselves. The boundaries of online safety essentially are an adult consensus about range of

risks, and especially a focus on risks and excluding opportunities. Theories and conceptions of safety are however explicated in a body of literature related to human resources, industrial safety, automobile and airline safety, and safety in health care environments. Journals such as the Jour*nal of Safety Research* and Jour*nal of Safety Science* present a range of theoretical and empirical research and a number of conceptualizations of safety can be identified.

Theories of Safety: 5 Conceptual Approaches

A broad review of the safety science literature identifies five conceptual approaches to thinking and theorizing about safety. These are briefly elaborated here:

1. *Safety as defenses* in depth (Reason, 1990, 1997; Vincent et al, 1998): this theory focuses on a systemic understanding of the organizational conditions that provoke human error, including systems safety, as well as identification of gaps and inadequacies as a basis for reducing error.
2. *High reliability theory and safety* (Roberts & Rousseau, 1989): this theory has its origins in organizational sociology, and focuses on how organizations could achieve consistent, failure-free performance over prolonged periods of time in the face of variable and demanding conditions. This conceptualization underpins much of the work on safety in health care environments.
3. *System dynamics and safety* (Amalberti, 2001): this theory seeks to depict the dynamic pressures that cause a system to migrate towards the boundaries of safe operations over time; it combines a dynamic systems view of safety and risk with a psychological appreciation of the behavioral drivers underlying violations.
4. *Safety as collective mindfulness* (Weick, Sutcliffe & Obstfeld, 1999): in this approach, mindfulness is characterized by a continuous effort involving all stakeholders to understand and update routines, procedures, perceptions, expectations and actions based on experience and foresight, and to anticipate and become aware of the unexpected, and have the means for containing the unexpected.
5. *Safety as resilience* (Hollnagel, Woods & Leveson, 2006): this approach draws on resilience theory in psychology, and focuses on the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of risk; it gives attention to interventions based on developing resilience in problematic situations.

It is the latter two theoretical approaches that have salience in relation to children's conceptions and practices of safety in online environments (Condly, 2006). These approaches highlight the importance of moving from protectionist paradigms to empowerment paradigms, to understanding diverse experiences, enabling deference to expertise including the voices of children as key stakeholders, developing individual and team alertness, and building flexibility and adaptability in the provision of interventions and solutions to safety. In the EU Study (Livingstone, et al, 2011), it was concluded that in the daily lives of children, exposure to risks is part of everyday life, and digital safety interventions should focus on resilience – the development of positive patterns of adaptation in the context of risk or adversity – and coping - efforts to adapt to stress or other disturbances created by the stressor or adversity. This focus on coping and resilience actually emerged out of the EU data. In identifying how children responded to the various threats and risks, three categories of responses emerged which highlight the importance of moving beyond protectionist approaches to empowerment approaches: (1)

fatalistic response: ignore. Hope goes away, limit use of internet; (2) *communicative response* – seek social support and talk to someone (peers, parents). Most predominant strategy identified in study, and (3) *Proactive response* – being adaptive, trying to reduce or eliminate harm in the future: deleting messages, deleting content, blocking senders eg cyberbulling, especially when strong level of being upset does foster trying to fix the problem: all proactive strategies that improves resilience.

Current Research

The current research, undertaken by Medina (2019) builds on the two studies as reported in Medina & Todd (2016a, 2016b, 2017). The first study, briefly summarized here, involved 148 students in Grades 5 – 10 in an international school in the Middle East. It utilized a self-reported response to 28 checklist items developed by the Open University UK titled "Being digital: Digital literacy skills checklist" available at: http://www.open.ac.uk/libraryservices/beingdigital/accessible/accessible-pdf-35-self-assessment-checklist.pdf It also included open-ended questions on how the school library can help in relation to the development of digital literacy. It specifically identified helps needed in terms of: (1) research processes and effective reading in digital environments; (2) digital safety, personal safety, technical safety and managing technical disruptions; (3) intellectual property: citation, authority, copyright, information ethics; and (4) knowledge construction: information evaluation, organization, analysis and synthesis. In this study, students recognized the need to develop their own competencies in relation to staying safe online.

The second study involved 425 Students in Grades 5 - 10 in two schools in Philippines. The students participating in this study took part in a series of regular library classes on the general theme of digital awareness and safety. They undertook a group mind mapping activity to map their collective understanding of unsafe websites and safety responses. In total, there were 38 groups with 5-12 students per group. They focused on specifying how they recognize whether a website is safe or not, and what are some of the actions they take to ensure they are safe in online environments. These students identified six types of unsafe websites: (1) sexual and violent content, (2) malware pop-ups and spam, (3) privacy and security issues, (4) technical errors/virus/auto downloads, (5) unsolicited sharing of problematic information on social media, and (6) search engines providing access to unsolicited sites. This study also indicated that students do have quite an extensive knowledge of the web environment. They had specific knowledge of technical terms such as Deep Web, Torrent; and specific knowledge of problematic web sites and malicious files, including pornographic sites. Their predominant conception of being unsafe online seemed to center on aspects of technical access, technical structures, and the potential for technical harm. There was limited acknowledgement of role of self in the safety equation such as stranger danger, establishing privacy boundaries, cyberbullying indicators, managing offensive posts, and dealing with problematic interactions and images. For these students, "unsafe" was predominantly seen as a system-generated problem, not as a personal-social-interaction problem. In their mind maps, they provided little explication of an active role of self in the digital environment. Emerging out of this study is an important need to understand more fully how young people conceptualize safety in digital environments, as well as the practices they engage in, if any, to stay safe in this landscape. This is presented in Medina's current research (Medina, 2019.

Research Goals

This current study aimed to explore senior high school students' and school librarians' conceptions of digital safety including their processes, actions, and practices, as they engage with the digital world. The study sought to respond to these following questions:

1. What do students think it means to be safe online?

Sub-question: What do students do themselves to be safe online?

2. What do school librarians think it means to be safe online?

Sub-question: What do school librarians do themselves to be safe online?

3. What existing library programs are implemented by school librarians in relation to digital safety?
4. How, if at all, do school librarians develop digital safety with students through library instruction? Based on the findings

With the findings from participants, this study also sought to create a digital safety plan that can support library instructional intervention and programs across curriculum-based schools.

Methodology

The study used qualitative and quantitative methods that sought to understand the conceptions of students and school librarians related to digital safety. A total of 50 students and 10 school librarians in Qatar participated in the study: students answered an online survey while school librarians responded through a structured interview. The online survey was administered through Google Survey with 24 self-report questions and one open-ended question while interview has 11 questions pertaining to their conceptions and practices around digital safety. The study used a modified survey from three similar studies: survey questions #1 to #12, #14, and #16 to #22 (Murray, 2014), survey questions #13 and #15, (Cox Communication, the National Center for Missing & Exploited Children Communications Department & Walsh, 2009), and survey questions #23 and #24 (Netsafe, n.d.).

An invitation was sent to schools using the public directory of schools available through the Qatar National Library website. The schools that confirmed through this invitation were asked to provide a school head's approval. The researchers visited these confirmed schools and gave an orientation about the study and their students' role. After securing the approval from the head, students needed to submit parents' consent signifying that their children were allowed to participate. Those students who completed the consent form with their parents' signature were also asked to provide their personal consent that they are willing to do an online survey. Those students who have completed all approvals were allowed to proceed in the online survey.

Findings

Demographics

Table 1 shows the list of participating schools. For UK Curriculum 1 and 2, only school librarians completed the consent forms while the rest were able to provide and complete the required documents.

Table 1

Number of Schools Participated (N=11)				
Schools	**Principal**	**Parents**	**Students**	**School Librarians**
School 1	✓	✓	✓	✓
School 2	✓	✓	✓	✓
School 3	✓	✓	✓	x
School 4	✓	✓	✓	✓
School 5	✓	✓	✓	✓
School 6	✓	x	x	✓
School 7	✓	✓	✓	✓
School 8	✓	x	x	✓
School 9	✓	✓	✓	✓
School 10	✓	✓	✓	✓
School 11	✓	✓	✓	✓

Students' Digital Life

The data provide perspectives of students' experiences in digital environments which are presented in terms of: frequency of Internet use (survey question 3), activities they do (survey question 1), how they spend their time online (survey question 2), and use of social media (survey question 6, 7, and 8).

Frequency of Internet Use on Non-School Work

Table 2 shows that students are actively engaged in using Internet for non-academic related works. This also tells us that Internet use is part of everyday life for most students. Only few students mentioned that they are not daily users of the Internet.

Table 2

Frequency of Internet Use on Non-School Work

	Frequent	Percentage
Every day	47	94%
Every 2 to 4 days	2	4%
Never	1	2%

Activities That Students Engage In Online

As shown in Table 3, the majority of students are active online users for both academic and non-academic related activities. What this shows us that their online inreractions are part of their daily everyday life. Some of these center on downloading information, playing video games, updating profile online, posting their activities and chatting with others online.

Table 3

Activities that Students Engage in Online (N=50)

	Frequent	Percentage
Surf the web (non-school related)	50	100%
Research for School	50	100%
Send Emails	48	96%
Check out someone else's online profile or status	47	94%
Download music	47	94%
Play games over the Internet	46	92%
Update your online profile	45	90%
Post images (photos or videos)	44	88%
Post messages	43	86%
Send an Instant Message (IM)	41	82%
Talk to someone on a chat site	39	78%
Share music	30	60%
Use a webcam	26	52%
Visit an anonymous chat site	24	48%
Shop online	23	46%
Visit an online dating or romance site	10	20%
Watch online	2	4%
Online Business (Art Commissions)	1	2%

Internet Activities Which Students Spend Most of Their Time

Table 4 shows the range of Internet activities that students engage in. These include surfing the web for non-related school work, research for school, and chatting with someone on a chat site or instant messaging. The data show that students use Internet in various activities related to their personal, academic and social needs.

Table 4

Internet Activities Which Students Spend Most of their Time (N=50)

	Frequent	Percentage
Surf the web (non-school related)	37	74%
Research for School	30	60%
Talk to someone on a chat site	27	54%
Download music	26	34%
Send an Instant Message (IM)	24	48%
Play games over the Internet	19	38%
Post messages	19	38%
Post images (photos or videos)	18	36%
Check out someone else's online profile or status	17	52%
Send Emails	14	28%
Update your online profile	11	22%
Share music	7	14%
Shop online	5	10%
Visit an anonymous chat site	2	4%
Watch online	2	4%
Use a webcam	1	2%
Online Business (Art Commissions)	1	2%

Social Media Accounts

Table 5 shows that participants are active users of various social media platforms. Facebook seems to be the most popular among them, followed by Instagram and Twitter. Pinterest and WhatsApp appear to be the least popular. Evident from this data is that students use more than two social media to be connected online.

Table 5

Social Media Accounts (N=50)

	Frequency	Percentage

Facebook	45	90%
Instagram	44	88%
Twitter	40	80%
Snapchat	35	70%
Tumblr	3	6%
Messenger	2	4%
WhatsApp	1	2%
Pinterest	1	2%
Goodreads	1	2%
DeviantArt	1	2%

Concerns for digital safety

Regarding their interactions online, Table 6 shows that some students are "always" concerned about their safety online. A significant number of students indicate that they "sometimes" feel concerned about their online interaction. Only a small number of students report that they are "never" concerned about safety in their online engagement.

Table 6

Concerns for Digital Safety (N=50)

	Frequency	Percentage
Always	17	34%
Often	10	20%
Sometimes	19	38%
Never	4	8%

Online Practices

Table 7 shows what students have posted online. The majority of the student share information about their real name, age or date of birth. More than quarter indicate that they post their personal images or friends' images online.

Table 7

Online Practices (n=50)

	Frequent	Percentage
Your real name	46	92%
Your real age or date of birth	39	78%
Images (photos or videos) of friends	38	76%
Personal images (photos or videos)	38	76%
The city where you live	37	74%
The name of your school	27	54%
The names of any local cities	20	40%
Your cell phone number	16	32%
The names of local sports teams (including your school teams)	13	26%
Your home address	9	18%
The name of a teacher	3	6%

Sharing Information to Strangers

In terms of sharing information to strangers, Table 8 shows that more than half of the students share their real name. Almost half of them post their real age to unknown individuals. Only a small number share their images, cellular number and their local cities to strangers. Also, only small number of them share their home address and teacher's name to those people that they have never met. It is consistent with the findings reported earlier that students use Internet to interact with different people.

Students were also asked about what they consider when they post online. Almost all indicate that home address should be kept confidential. Additionally, a large number of participants believe that their mobile number is also a private information. They think that the city in which they live, name of school, and personal information could be unsafe to post. This data highlights an important issue regarding Internet safety practices that students still need proper guidance in their online interaction and practices.

Table 8

Sharing Information to Strangers (N=50)

	Frequent	Percentage
Your real name	32	64%

Your real age or date of birth	24	48%
The city where you live	23	46%
Personal images (photos or videos)	12	24%
Images (photos or videos) of friends	10	20%
Your cell phone number	10	20%
The names of any local cities	10	20%
The name of your school	9	18%
The names of local sports teams (including your school teams)	5	10%
Your home address	4	8%
The name of a teacher	4	8%
Links	1	2%

Online Identities and Practices

Table 9 shows students' views on anonymity and their representation of their online identities. A significant number of students indicate that "It is okay for people to log on anonymously". Almost half report that "It is not okay for people to any of the above". What we can see here is that participants are active in creating fake identities and being anonymous when interacting online.

Table 9

Online Identities and Practices (n=50)

	Frequency	Percentage
It is okay for people to log on anonymously	31	62%
It is okay for people to create a fake identity	11	22%
It is okay for people to log on as someone older	6	12%
It is okay for people to log on as someone younger	1	70%
It is okay for people to log on as a different gender	5	10%

It is NOT okay for people to do any of the above	20	40%

Further Commentaries

The last open-ended question seeks to determine students' insights about what kind of help they need from their teachers/librarians related to digital safety. Three themes were identified:

Practical Tips and Advice.

Almost half of participants express that they need support in terms of tips and advice around Internet safety. These include identifying dangerous sites, strategic use of information searching, learning online etiquette, recognizing online threats, determining online warning signs, providing practical activities on digital safety, setting an acceptable password, and listing "do and don'ts" when online. Some individual comments include: "They can recommend some tips on how to be aware if the possible threats that can be found while surfing the internet (P15); "by giving us warnings (P17); "By advising us what to open & what not to open"(P.27) and "Librarians can guide us to create a strong password" (P28)

Instructional Support

Thirteen students emphasize that they need classroom-based support to help them be safe online. They suggest that teachers and librarians provide lessons, workshops, counselling, and activities about digital safety. Some illustrative examples of their comments include: "could present some seminars and workshops" (P38); "Teachers and librarians can help by lecturing students about internet etiquette (P40); "Teaching us how to avoid certain situations that could lead to harmful websites" (P47); and "By having quarterly counseling about the status online" (P47).

Setting Boundaries and Restrictions

Seven participants believe that putting restriction or limited access to various websites inside the school could be an excellent way to help them safe online. Some recommendations involve putting parental control, monitoring programs, blocking some adult websites, and allowing only those useful and education websites only. Some illustrative examples of their comments include: "Set up restrictions on certain websites that could only be accessed by students" (P.31); "They can provide for parent's (access) ONLY" (P32); "Monitoring potential dangerous online behavior by blacklisting sites where fraud and posers are prevalent" (P34); and "Library computers should be only used for school purposes only" (P36).

Interviews with School Librarians

School Librarians' Conceptions Of Digital Safety

The majority of the school librarians recognize the significant roles of digital safety as part of students' learning development. Four of them believe that Internet safety plays a role in protecting their online identities and personal privacy. Some of the comments include:

Digital safety is important because with the vast information coming from the internet or cyber space, there is the GIGI or 'garbage in – garbage out'. And we don't like our students to obtain unreliable information and/or become victims of false information from unsafe websites (P3); and "It is critical for all users to practice digital safety to protect their and their family's personal

information / wellbeing. Practicing good habits early on will become invaluable later in life" (P4)

Existing Library Programs Used By School Librarians In Relation To Digital Safety

The study aimed also to identify any existing library activity related to digital safety. It was found that six librarians do not implement any activities or programs that support digital safety initiatives. One librarian comment that they have "filtering activity" which is facilitated by IT department. One librarian mentioned that they conduct information literacy sessions to teach important points on digital safety. One librarian from a French school reported that digital safety is part of their curriculum as mandated by the Media Education in partnership with the French government. Some of the comments include: "We have library lectures pertaining on internet use, identifying reliable websites, and the importance of plagiarism" (P3); and "In collaboration with the Spanish teacher who created a brochure on Internet safety, we work together to promote the importance of this. We follow the guidelines provided by the government particularly on Media Education" (P6).

Resources Used by School Librarians to Teach Digital Safety

The findings show that more than half of the school librarians have not used any resources to facilitate digital safety instructions. One librarian mentioned "Google Scholar" as their reference in teaching online safety. One however highlighted the collaboration with the IT department to provide the skills and resources on technology. Only one librarian implemented a structured digital safety curriculum with the guidance and support of resources from the French government. Overall, digital safety is not a priority among school librarians who participated the study, and this seems to become a new responsibility that must take into consideration in the field of school librarianship.

Moving Forward: Research Opportunities and Professional Practice

With increasingly younger children using the Internet on their own, and substantial uptake by schools in terms of pedagogical applications and learning outcomes, the there is a growing need for ongoing research that examines not just the risks and opportunities they face on the web, but also delving into their complex thinking and practices in relation to safety in online environments. Such information is critical for developing safe information systems and empowering children to be proactive in their own safety and enabling educators to frame instructional interventions that nurture thinking about and practicing digital safety.

This calls for a deeper exploration of child-centered approaches to research. It is clear that children are deeply enmeshed in the online environment, and researchers and educators must recognize the central importance of learning from them in order to help them develop information practices around safety that are sustainable and durable. This is a research, educational and social justice challenge. It calls for synergies of theoretical frameworks, methodologies, practices, applications and interventions that contribute to resilience and coping.

Researchers are called to develop more child-centered approaches to data collection, and to use these as ways to enable school librarians to develop evidence-based approaches in their daily practice. These might include approaches as child-as-expert conversations, interviews / conversations on risks and opportunities, beliefs in internet knowledge such as measures of

objective knowledge (actual knowledge) and subjective knowledge (perceived knowledge), parallel interviews with children and parent / carers; descriptions of individual experiences / cases / critical incidents (such as Critical Incident Technique, (Flanangan 1953); use of drawings (Merriman & Guerin, 2006), photovoice and screen capture to capture moment-in-time experiences through photos and screen images, and child-expert response to hypothetical scenarios. These approaches move beyond the typical check lists of digital skills / competencies, and self-reporting of digital skills, or measures of ability to perform specific skills. There is also potential for engaging children in the analysis and synthesis of their data, both as an elaborative and confirmatory approach to the data.

The current research provides some useful indicators of educational interventions. It is critical that interventions are not based on exaggerations of the nature and scale of risks, rather, focus on the development of coping and resilience strategies. There is some evidence that school librarians need to engage more actively in education for digital safety that goes beyond digital skills checklists, and teaching to such lists. There is a need to empower children to cope, provide advice to parents on how to mediate, and ensure school websites contain appropriate positive support and guidance, and not just technical blockages. Educators are challenged to avoid top-down interventionist approaches which tend to be negative and ascribe blame and fear (this is akin to bullying tactics). It is important to develop active strategies equip children to manage online risks themselves in so far as they are able and practical to do. Educators have a role in enabling children craft meaningful profiles and establish what constitutes a good profile. Attention should be given to building resilience, coping and self-efficacy also through developing awareness of self-help resources that build understanding and provide proactive strategies that do not overdramatize the risks. This might include access to anonymous help lines where children can discuss their issues in anonymity and privacy. This is also about the library being a safe and trusted place. In all of these approaches, there is need to ensure that strategies show the continuity and integration of online and offline experiences. The digital safety agenda also challenges educators to open up communication avenues that create opportunities seek social support and talk to someone (peers, parents, teachers). Build trust is important. According to the Livingstone et al study (2012), when encountering different risks, children are not usually likely to talk to a teacher – data showed they identified friend, mother / father, brother / sister, and a trusted adult over teacher. Teachers were trusted not in terms of seeking support if children were upset about something related to the internet. Collectively, such approaches and initiatives come rethinking digital safety in terms of theories of collective mindfulness and resilience, rather than decontextualized sets of skills.

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Biographical Note

Dr Ross Todd is associate professor in the School of Communication and Information at Rutgers, the State University of New Jersey. He is Director of the Center for International Scholarship in School Libraries (CISSL), at Rutgers University. His scholarly work primarily focuses on the engagement of people and their information worlds, and understanding how this engagement can facilitate professional action and change, and make a difference to individuals, organizations, societies and nations. Current research interests center on adolescent information seeking and use, with particular emphasis on young people's conceptions and practices in relation to digital safety in online environments.

Virgilio G. Medina Jr is Librarian at the Qatar National Library Doha, Qatar. He recently completed his Master of Arts – Library and Information Studies at the University College London (Qatar Campus). He has worked in Middle East countries as a school librarian for prior to his appointment at the Qatar National Library. His professional and research interests center on young people's engagement with learning technologies, young adult services, and information and digital literacies, including aspects of digital wellbeing and digital safety.