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A comparative analysis of high school students' and school librarians' conceptions and practices of Digital Safety

Virgilio G. Medina Jr, Ross J. Todd and Collins Kwadwo Norch

Introduction

- 1 In the evolutionary era of digital technology, school libraries have significant roles to play, not only as tangible places for physical resources, but also as learning centers that enable teens to become effective learners in the 21st century environment utilizing the affordances of digital technology. These roles include assisting teens in the use of digital platforms, digital tools, online resources, social media, and other digital technologies that enhance their educational experience and provide opportunities to engage in deep learning. Todd (2008, 31) believes that “the challenge for school libraries is to understand actual behavior of today’s young people in their information landscape”. Furthermore, Todd (1999, 5) states that learning experiences initiated by school libraries offer opportunities for students to develop various information and digital skills from engaging with resources, utilizing multiple formats of information, evaluating different authors’ interpretations, resolving information conflicts, developing logical skills, collaborating with other students, producing students’ outputs, and integrating technology for writing and visual representation.
- 2 Rowland and Nicholas (2008, 305) recognize the demands of school library users when using digital contents and platforms, as well as other challenges which include the following, as cited by Hay and Foley, (2009, 20):
 - use of mobile and Web 2.0 Tools
 - understanding of information ethics for privacy and online safety
 - integration of information ethics into school’s curriculum

- issues related to the digital divide, and
 - parents' involvement on children Internet use
- 3 Hay and Foley highlight that school libraries are not simply repositories of print and online resources, but have important roles to play in addressing and meeting the needs of students as they learn, work and socialize in digital environments. This work highlights the need to be cognizant of the issues and challenges faced by students, including their intellectual and social and cultural engagement, as well as their own wellbeing such as identity, safety and relationships.
- 4 The advent of the World Wide Web and the emergence of digital platforms have created significant changes and opportunities, particularly how school libraries function to meet students' information needs. Park (2009) believes the Internet has several advantages, such as providing a storehouse of information, enabling communication without boundaries, facilitating online interactive learning, advocating electronic and online research, developing interests in learning, and promoting global education (as cited in Dogruer, Eyyam, & Menevis 2011, 606). Given the unpredictability of technological changes, the educational community, including school libraries, are challenged to provide opportunities to prepare students as effective learners in the digital world (Mullen & Wedwick 2008, 66). Against this backdrop, this research seeks to understand some of the dynamics of students' engagement with their digital environments, with a particular focus on their own digital well-being.

Background and Need

- 5 The integration of technology into education and everyday life is changing perspectives on how students behave ethically in their social and literacy practices (Alvermann, Hagood, and Moon 1999). Lenhart (2015) states that 92% of youth use the Internet as an integral part of their daily personal, academic and social needs. In Qatar where the research takes place, the Ministry of Transportation and Communication, in partnership with the Ministry of Education and Higher Education, has robust digital literacy initiatives that focus on young learners (Ministry of Transport & Communications 2018). According to the report "Qatar's Digital Natives," 100% of young adults have access to the Internet (Ministry of Transport & Communications 2017). Based on this report, the Qatari government advocates for cybersecurity awareness, aiming to provide specific guidelines on the ethical use of Internet.
- 6 The digital world introduces individuals to various challenges, from "a lower level of digital literacy to a range of new threats" (Gasser, Maclay, and Palfrey 2010, 4). This research project focuses on some of these "new threats". The explosion of digital information has triggered numerous pitfalls in students' online safety, from exposing them to cyberthreats and cyberbullying, to hacking of personal information, to gambling, committing plagiarism, and other significant online risks. As teenagers' use of the Internet continues to grow, digital safety concerns also increase (Farruk, Sadwick, and Villasenor 2014, 1). Advocating for students' Internet safety enables educators, policymakers, and stakeholders to address possible online threats that could compromise students' digital well-being (Duerager and Livingstone 2012, 1).

Research Focus

- 7 This study seeks to identify high school students' and school librarians' conceptions around online safety and to understand the actions, processes, and strategies they engage in digital network technologies to be safe online. The study also seeks to identify existing library programs related to digital safety as well and how school librarians and school libraries can support and address students' digital safety needs. Specifically, this paper begs to answer the following questions:
1. What do students think it means to be safe online?
 2. Sub-question: What do students do themselves to be safe online?
 3. What do school librarians think it means to be safe online?
 4. Sub-question: What do school librarians do themselves to be safe online?
 5. What do students think of librarians' role helping them to be safe online?
 6. What existing library programs are implemented by school librarians in relation to digital safety?
- 8 Based on the findings of students' and school librarians' conceptions and practices around digital safety, the study will consider how digital safety can be further developed and integrated into school library programs, guided by school's curriculum.

Related Literature

Digital Literacy and Digital Safety

- 9 Over the last decade, a burgeoning body of empirical research has focused on digital literacy that specifically includes digital safety as one of its key competencies. This involves exploring how digital safety is designed, its aspects, and how it might be integrated into pedagogical contexts. According to Webwise, an Irish Internet Safety Centre, digital literacy is a "particular set of competencies that allow you to function and participate fully in a digital world" (n.d.). These competencies encompass the following: critical thinking in a digital world; online safety skills; cultural and social understanding; collaboration; finding information; communication; creativity; and practical and functional skills. Webwise regards digital safety as one of the core competencies that is vital to people becoming digitally literate consumers in an electronic information landscape. A policy brief initiated by the Institute for Prospective Technological Studies (IPTS) states that digital literacy "consists of the ability to access digital media and media contents, to understand and critically evaluate different aspects of digital media contents and to communicate effectively in a variety of context" (Ala-mutka, Punie, and Redecker 2008, 4). Learning fundamental Information Communication Technology (ICT) skills involves using digital tools in a critical, confident, and creative manner while focusing on security, safety, and privacy.
- 10 In addition, the American Library Association's Digital Literacy Task Force refers to digital literacy as "the ability to use information and communication technologies to find, evaluate, create and communicate information, requiring both cognitive and technical skills" (Visser 2012). One of these technical and cognitive skills focuses on having the ability to "understand the relationship between technology, life-long learning, personal

privacy, and stewardship of information” (Visser 2012). The goal of this advocacy is to clearly define particular skills and abilities needed in the digital age, and explore the capacity of all types of libraries to adapt to digital technologies, including digital safety, digital privacy, and digital well-being.

- 11 Hobbs, a distinguished educator at the University of Rhode Island and Founder and Director of the Media Education Lab, wrote the *Digital and Media Literacy: A Plan of Action*, outlining educational frameworks for digital and media literacy. In this work, Hobbs defines digital and media literacy as the “full range of cognitive, emotional and social competencies that includes the use of texts, tools and technologies” (2010, 17). When barriers, challenges, uncertainties, distractions, or disruptions occur around virtual worlds, Hobbs emphasizes the importance of social well-being as part of cognitive and technical capabilities necessary to address these issues. Social well-being is defined as “when individuals have the psychological, social and physical resources they need to meet a particular psychological, social and/or physical challenge” (Hobbs 2011, 230). The exponential growth of Internet use draws important attention to the holistic development of social well-being. Incorporating online risks into the framework of well-being creates increased possibilities for monitoring the mediating role of Internet use for children’s interpersonal relationships, education, play, and social development (Nansen, et al. 2012).
- 12 Moreover, a central dimension of this discourse focuses on digital well-being, defined as the “capacity to look after personal health, safety, relationships and work-life balance in digital settings” (JISC 2015, 3). These capacities include acting safely and responsibly in digital environments; using digital data for self-protection; preserving privacy; managing digital stress, workload, and distraction; managing and fostering positive relationships and meaningful interactions; and acting “with concern for the human and natural environment when using digital tools” (JISC 2015, 3).
- 13 The borderless connection between students online and offline lives has led to considerable concerns about their social and digital well-being. The United Kingdom’s Office for National Statistics recently published a report confirming that nearly 100 percent of individuals aged 16 to 34 are Internet users (2017). Studies have established similar findings about teenagers living in the United States (Lenhart 2015) and Australia (Ortega-Montiel 2014). These data confirm that the current generation of teenagers are embracing an online culture where Internet accessibility is widespread and pervasive.
- 14 Thus this paper focuses on the aspect of digital safety as part of the digital literacy framework that specifically explores how digital safety can play an important role, contributing positively to students learning development as they engage in a digital world.

Digital Agenda in School Libraries

- 15 In a global perspective, the International Federation of Library Associations and Institutions (IFLA) School Library Guideline address the evolutionary technological changes of the 21st century by creating seven pillars to inform digital agendas in school libraries. This report recognizes the support for digital literacy, skills, and inclusion to fill gaps in digital access, information, and communication (IFLA School Libraries Section Standing Committee 2015). The success of embracing digital literacy in a library context

calls for dynamic changes and strong collaborations by librarians in the community (Baker 2016, 7; IFLA School Libraries Section Standing Committee 2015). School librarians are encouraged to provide instructional roles in students' learning by helping them "develop questions, find, evaluate, synthesize, synthesized ideas and knowledge with media" (Valenza and Hobbs 2016, 151). In addition, school librarians are qualified to engage students in digital literacy through library instruction, thereby enhancing and nurturing students' skills as lifelong learners and inquirers (Valenza and Hobbs 2016, 149).

- 16 Medina and Todd (2016, 15) explore several potential roles where school libraries could support students in developing digital safety. Driven by students' feedback and insights gathered from 148 students in Qatar, they identified five general aspects of digital safety: intellectual property; information organization analysis and synthesis; digital reading; research process; and Internet safety (shown in Figure 1). One paramount factor in achieving this safety is the level of help and support from school libraries as learning hubs in facilitating digital literacy through explicit library instruction. The Instructional Framework for Digital Competency developed from the findings of this study, seeks to provide school librarians with systematic, student-centered approach that could be translated into local evidence-based strategies to engage school affiliates in a holistic approach to digital literacy development (Medina and Todd 2016, 15).

Figure 1: A Student-Generated Instructional Framework for Digital Competency

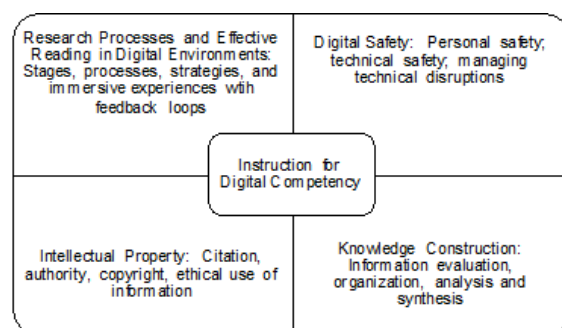


Figure 1: A Student-Generated Instructional Framework for Digital Competency

Digital Agenda in Qatar: Local Based Practices

- 17 In Qatar, research on Internet use has been ongoing including a government initiative on how digital literacy could be strengthened in private and public schools. Qatar has the highest Internet penetration in the world, with 99 percent of its population, or 2,640,360 users, from January 2017 to January 2018 (Kemp 2018, 32). As of December 2017, Qatar ranked as the second to last in the Internet usage of Middle East countries with 1.6 percent of Internet users, or two million users (Internet World Stats 2018).
- 18 In order to create a digital learning environment that can be safely used in schools in Qatar, a cyber safety learning program called "Haseen" was introduced by the Ministry of Transport and Communication in collaboration with the Ministry of Education and Higher Education in 2015 (Ministry of Transport and Communication 2015). One of the goals of this initiative is to provide reliable and unified learning resources that further

support classroom instructions in Qatar, including videos, quizzes, worksheets, lesson plans, and educational websites. This digital content also includes practical scenarios and activities in both Arabic and English that address online safety. Teachers, educators, and librarians from schools in Qatar have been given special access to Haseen, which is monitored by the Qatari government. Haseen allows users to customize and design their lesson plans according to appropriate grade levels, types of resources, curricular standards and cyber safety topics. Cyber safety topics include: reputation management; mean behavior and cyberbullying; social networking; responsible mobile phone usage; netiquette; Internet and game addiction; protection techniques; sharing personal information; inappropriate content; plagiarism; credibility of online resources; media literacy; and intellectual property. These topics are further supported by International Society for Technology in Education (ISTE), which is a common standard for the use of technology in pedagogical learning across the globe. Haseen seems to be a starting point to advocate and promote digital safety in the community.

Methodology

- 19 This is a qualitative study that seeks to understand the conceptions and practices of students and school librarians regarding digital safety. A modified survey questionnaire (Murray 2014 153) was used for 50 high school students and a structured interview for 10 school librarians. These two data collection methods assisted the researcher in obtaining information relevant to the research objectives. Additionally, a paper survey was facilitated in collaboration with University College London-Qatar for 50 public young users which aimed to identify and collect their feedback about the public library services and facilities.
- 20 The online survey was carried out during 2018 that required three levels of permissions: school head, parents and students. Any student respondent who had not completed this procedure would not be eligible to participate in the survey. Prior to this, an email invitation and consent were randomly sent to various schools in Qatar, explaining the study and their roles as respondents. And then the first ten schools who confirmed would be invited to participate in the data collection.

Findings and Discussions

- 21 This section provides data from both students and school librarians as to how they conceive and practice digital safety in a digital networked society. This is also accompanied by students' feedback on the improvement of the public library services in Qatar. Students' responses focus on conceptions about what unsafe to post, concerns on digital activities, online behavior, online practices, and online identities. School librarians' responses center on conceptions and practices around digital safety as well as any existing library programs related to it.

Students' Conceptions about what unsafe to post

Table 1. Information that students think could be unsafe to post

	Frequency	Percentage
Your home address	47	94%
Your cell phone number	41	82%
Personal images (photos or videos)	27	54%
The city where you live	27	54%
The name of your school	27	54%
Your real age or date of birth	24	48%
Images (photos or videos) of friends	24	48%
Your real name	22	44%
The name of a teacher	21	42%
The names of any local cities	14	28%
The names of local sport teams Including your school teams	6	12%

- 22 Table 1 shows the list of information that students think could be unsafe to post online. A large number of students believe that posting their home address (94%) and cellphone number (82%) could be unsafe to disclose. A possible explanation for these two practices being viewed as unsafe might relate to them being connected to a real-time physical location, and the potential for a stranger to be able to make real-time contact with them. Almost half of the students report that it is unsafe to share information such as personal images (54%), the city where they live (54%), and the name of their school (54%). Only few students (12%) mention that local sports team is unsafe to post online. These data show that students are aware of various personal information that could be unsafe to share publicly and other information that should be kept private. While there appears to be a some understanding of Internet safety, these do not translate fully into safe practices, raising the need for parents, educators and librarians to work collaboratively to develop innovative and meaningful interventions that support safe practices.

Students' concerns on digital activities

Table 2: Concerned if posting personal on a public blog or social networking could have a negative effective on their future (N = 50)

	Frequency	Percentage
Very Concerned	11	22%
Concerned	15	30%
Somewhat concerned	20	40%
Not all concerned	4	8%

- 23 Table 2 shows the level of students' concerns related to the impact of posting personal information on a blog or social network. Findings presented here indicate that the majority of students (40%) express some level of concern about the negative future impact of their posting practices, with the largest group being "somewhat concerned". Smaller groups of students were either not concerned at all (8%), or very concerned (22%). Consistent with the data in the previous tables, there seems to be some disconnect between the beliefs around digital safety, and the actions they take to be safe. In other words, they say one thing and do another. This again suggests that students may still need guidance on the protocols of digital safety. Students are aware of the negative consequences as a result of their personal activities being done online, but the problem seems to be taking the necessary actions.

Students' Online behavior

Table 3 Actions that make students feel unsafe online (N = 50)

	Frequency	Percentage
When someone says mean or cruel things about you	33	66%
When someone uses sexually explicit language	31	62%
When you get a "friend request" from someone you do not know	22	44%
When someone asks your name	18	36%
When someone comes online who you do not know	13	26%
I always feel safe on the Internet	5	10%
When someone asks for private information	3	6%
People posing as others	1	2%

When someone I don't know messages me directly	1	2%
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24 Table 3 identifies various actions that make students feel unsafe online. This question digs deeper into understanding their practices in relation to digital safety. More than half of the students feel unsafe when someone says mean or cruel things (66%) and when someone uses sexually explicitly language about them (62%). Students are aware that statements of cruelty or sexual harassment are deeply personal, and get to the heart of their humanity. Almost half of the students (44%) report that they feel unsafe when they get a friend request online from someone they do not know. Some of the students say that they feel unprotected when someone asks their name (36%) or when someone comes online they do not know (44%). A small number of students indicate they are unsafe when someone asks for private information, (6%) when posing as an other (2%), and when someone they don't know sends a message directly (2%). What is evident here is that students feel unsafe for a number of reason when they are online. There is a corresponding notion that students view online world as an unsafe place out of their own control where people they don't know can connect to them and be hurtful. What this indicates is the notion of digital safety being tied to acceptable behavior that respect personal identity and dignity.

Students' Online Practices

Table 4 Students online practices

	Frequency	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	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%

- 25 Table 4 reveals various students' online practices of what information they have posted online. This table reveals that majority of the students post their real names online (92%), real age or date of birth (78%), images of their friends (76%), personal images (76%) and the city where they live in (74%). Only a small amount of student post information related to the name of their local cities (40%), phone number (32%) and sports team (26%). Their home address (18%) and teachers (6%) seem to be the least information they share online. These data show that students actively disclose various personal information publicly as they engage in their digital networks. The sharing of personal information in such digital environments is consistently raised as a safety concern in all of the educational campaigns around online practices and safety issues. It might be interpreted from these data that the widespread dissemination of personal information is taking place without an understanding of the implications of this for their online safety. While students (as shown in Table 2) express that they are concerned about digital safety, there seems to be some mismatch between conceptions and practices of digital safety.

Online identities and practices

Table 5 Student Online Identities

	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%

- 26 Table 5 shows students' opinion on anonymity and the representation of their online identities. As previously stated, students are concerned about their digital safety. The majority of the students indicate that "it is okay for people to log on anonymously" (62%). A much smaller percentage of students say that "It is okay for people to create a fake identity" (22%). Only few students admit that "It is okay for people to log on as someone older" (12%) or "It is okay for people to log on as a different gender" (10%). However, a significant number of students report that "It is NOT okay for people to do any of the above" (40%). The data in this table show that for these students, anonymity is an important conception of safety. They prefer anonymity over the use of fake identity. Anonymity conveys the notion of not being able to be traced or tracked. They want to be in their digital networks, but want self-protection through anonymity. They want to be involved, but not exposed to various unacceptable online practices that bring them harm or hurt. It is possible that they view anonymity as a means to protecting themselves. It could be concluded here that anonymity, from the students' perspectives, is an important conception of digital safety. This also suggests that educators need to be aware of this

conception, and to be actively involved in digital advocacies around protection of identity and the possible online risks related to their personal identity.

School Librarians as Respondents

- 27 This section explores the responses made by school librarians which basically focuses on their conceptions, practices, and library programs related to digital safety. Overall there were ten school librarians confirmed to participate in an interview.

School librarians' conceptions of digital safety.

- 28 School librarians were asked about digital safety and its importance in the educational learning environment. The majority of librarians (60%, $n = 6$) indicated that discussing digital safety enables them to educate their students about safely using the Internet. Forty percent ($n = 4$) of respondents indicated that digital safety plays a key role in protecting individual online identities and privacy. School librarians perceive that digital safety centers on protecting personal identities and privacy.

School librarians' activities in relation to digital safety

- 29 With various discussions happening in education today around the idea of digital safety, the study aimed to determine school librarians' understanding of the term of digital safety. Six school librarians refer to digital safety as protecting one's identity and privacy in the online world. Three of the school librarians indicated that digital safety is concerned with identifying potential threats and inappropriate sites. One school librarian associated digital safety with keeping a strong and secure password. Consistent with the data above, digital safety seems to have an important role in protecting online identities, personal privacy and strategic actions to avoid online threats and exposure to harmful websites.

Existing library programs in relation to digital safety

- 30 When it comes to developing and implementing library programs, school librarians shared whether these type of programs are included in their library practices. Six of the school librarians do not engage in any library programs to support digital safety. One indicated they have "Internet filtering," which prevents students accessing age-inappropriate, harmful, and restricted sites. One librarian responded that they conduct information literacy sessions to teach important points about Internet safety. Another librarian reported that she normally collaborates with faculty in designing library programs on digital safety, which is systematically integrated in the school's curricular model and mandated by the Media Education in partnership with the French government. Findings presented here show that despite the availability of resources on digital safety, some school librarians do not implement any library programs in relation to digital safety as part of library instruction, and view digital safety as technical skills that requires additional training from the experts.

Further Commentary

- 31 In a separate survey done at QNL as part of student research project, which is introduced by UCL-Qatar to its current students, one question sought to determine how young learners could further be assisted through public library services. It is interesting to note that more than half number of participants seek help when it comes of their digital engagement particularly practical tips and advice and actions in becoming safe online. The results reveal three emerging themes as identified below:

Practical tips and advice

- 32 Sixteen students mentioned that they needed practical tips and advice from library professionals especially when accessing information and engaging with others online. These involve proper use of social media, Internet safety, website restrictions, online behavior, using secured password, face-to-face counselling. Some of the individual commentaries include:
- “To guide us in using social media platforms.”
 - “They make us more aware of safety guidelines when using the internet.”
 - “Put restrictions on certain sites.”
 - “Teach us how to become safe online (what to post and what not to post).”

Library Instruction

- 33 Thirty students reported that library instructions could help them develop some skills needed for digital safety. Feedback centers on workshops and special sessions in the library, library programs, and lectures. Some of the individual commentaries include:
- “Librarians will provide more awareness.”
 - “Librarian will conduct workshops or lectures about Internet safety.”
 - “Librarian will teach us more knowledgeable about digital world.”

School Visit

- 34 Four students mentioned that digital safety should be included as part of the school visit in QNL. Aside from the tour, students expect that QNL will provide additional session for digital safety where they can use computers and learn hands-on process and strategies in becoming safe online. Some of the individual commentaries include:
- “I expect that ‘how to be safe online’ will be taught during our school visit at QNL.”
 - “To learn about online behavior when our school gets a slot in QNL.”
 - “I would love to see librarians teach our class how to use various online platforms available for our upcoming visit in April!”

Conclusions

- 35 This research has seen various discourses around digital safety by students and school librarians, with an emphasis on different conceptions and practices in a digital environment. Furthermore, this paper recognizes the role of digital safety plays a pivotal role in helping young users to become effective online learners to critically assess,

evaluate, synthesize and organize various information from a wide range of digital sources which is considered a necessary skill in the 21st century learning environment. With the perspectives and findings presented here, this will provide us an impetus to further investigate how digital safety could be possibly embedded into instructional role of library services that creates opportunities for learners to achieve in-depth learning for personal, academic, and social enrichment. This could also be another opportunity for teachers, educators, and policymakers to re-visit their instructional-based curriculum and re-evaluate some possibilities of integrating digital safety as a one of the key parameters for learning success.

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ABSTRACT

This study investigated high school students' and school librarians' conceptions about what it means to be safe online and to understand the actions, processes, and strategies they engage in order to be safe online. The study also identified the existing library programs organized by school librarians in relation to digital safety and how school librarians and school libraries can support and address students' digital safety needs. This paper sought to answer the following research 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 do students think of librarians' role helping them to be safe online? 4) What existing library programs are implemented by school librarians in relation to digital safety? By understanding possible gaps between students' and school librarians' conceptions and practices on digital safety, educators and school administrators will gain understanding on how digital safety could be more effectively developed and integrated as part of the school curriculum.

INDEX

Keywords: Digital Safety, School Libraries, Digital Literacy

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