



SAGE Research Methods: Doing Research Online



University-Based Youth Mentorship Program: Adapting a Quantitative Digital Citizenship Study to the Online Environment

Case

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Abstract

The research upon which the proposed case study is based was conducted during the spring of 2021 as part of a therapeutic youth mentoring program serving “multiply marginalized” (Cyrus, 2017) youth (ages 10–14 years). The proposed case study will explore the challenges faced when adapting a would-be in-person quantitative research study with youth to an online environment. The study and youth programming were facilitated by the department of counseling and human services, out of a university in the Rocky Mountain region. The project expanded upon experiential activities currently employed by the program, with the primary aim of enhancing youths’ knowledge and awareness of digital use habits and skills to participate in safe self-regulated online engagement. With support from trained undergraduate student mentors and graduate assistants, youth engaged in guided digital citizenship activities and group discussions via Zoom regarding digital wellness, digital accessibility, user data and securing digital devices, and personal information and the digital footprint. Before and after each digital citizenship activity, each youth completed a brief survey distributed using Qualtrics online survey platform. These pretests and posttests measured changes in the understanding of key concepts involved in cybersecurity and digital wellness. Youth participants reported changes in key areas of social and emotional wellness were also explored using the Youth Participant Survey (National Research Center, 2013). All research activities were facilitated in the virtual setting using Zoom for communication between participants and research team members and online interactive games and platforms for digital citizenship activities. Informed consent and assent and survey instruments were administered using the Qualtrics online platform.



Learning Outcomes

By the end of this case, students should be able to:

- Understand the pretraining, technology support, and scaffolding necessary to ensure the success of online research endeavors with youth participants
- Describe digital methods of acquiring parent/caregiver consent for youth to participate in research and obtaining youth assent to participate
- Articulate how to facilitate experiential and engaging research-related interventions with youth using teleconference platforms and their features (e.g., chat functions, screen sharing, breakout rooms) and online interactive games and activities
- Discuss accessibility considerations related to access to technology and high-speed internet
- Describe recommendations and challenges associated with administering survey instruments following teleconference facilitated interventions, using online survey platforms

Project Overview

Description of the Program (What It Aimed to Achieve, How It Would Usually Be Facilitated, and Need to Transition Online)

The research project discussed in this case study was facilitated during the spring of 2021, 10 months after the start of the Corona Virus Disease of 2019 (COVID-19 crisis) pandemic. This was a particularly

opportune time to explore the implementation of online research methods, as all would-be in-person research and activities were required by the university to transition to fully virtual administration. Furthermore, at a global level, youth experienced new challenges associated with the emergency transition to online learning and extracurricular activities (Ferri et al., 2020) such that further study of interventions aimed at enhancing digital citizenship seemed both timely and necessary. From the inability to access necessary technology and hardware to lack of digital literacy and online literacy skills (Harris & Johns, 2021), youth have reported feeling like “robots who’re gonna sit at the computer and do work all day” (Literat, 2021, p. 5). The aim of this study was twofold, as the research team hoped to support youths’ development of digital and online literacy skills and utilize measures to explore possible changes in learning and key areas of social and emotional development.

The research team benefitted from the wisdom gained during these 10 months of all virtual interactions, as this time provided opportunities to learn from other approaches to online research and troubleshoot emerging challenges to transitioning mentorship programming to the virtual setting. The mentorship program transitioned to online-only facilitation in February of 2020. By spring of 2021, the youth mentorship program with which this study was administered had offered online-only programming for just shy of a year. The research team elected to implement the digital citizenship curriculum during the spring of 2021, as the need for a digital literacy-focused curriculum seemed increasingly necessary in the post-COVID-19 world. Also, the project received the necessary funding for development and implementation from the Cybersecurity Faculty Seed Grant.

Description of the Evaluation (What It Aimed to Achieve)

- This case study explores the experience of the research team while facilitating a newly designed and implemented digital citizenship curriculum in a university-based therapeutic youth mentorship program. All aspects of this study were reviewed by the university’s Institutional Review Board (IRB) and were approved in November of 2020. Digital citizenship activities aimed to teach youth essential online skills to promote persistence in virtual and in-person education settings and cultivate an understanding of participants’ “rights, responsibilities, and opportunities of living, learning, and working in an interconnected digital world” (International Society for Technology in Education, 2019, p. 1). A total of eight youth participants out of the 13 participating in mentorship programming assented and had parental/caregiver consent to participate in the study. The research team anticipated a limited sample size due to the relatively small cohort of youth who participate in mentorship programming each semester and thus chose to focus on methods of data collection that assess changes in learning during digital citizenship activities. Another focus of data collection was to explore youth participants’ perceived changes in academic success, cultural competency, lifestyle, life skills and life choices, core values, sense of self, higher education readiness, workforce skills, and satisfaction with programming.



Section Summary

- The emergency shift to online learning and activities during the COVID-19 pandemic brought to the forefront the need for youth programming that aimed to develop digital citizenship.
- Many factors informed the development of the online quantitative digital citizenship study discussed herein.
- Data collection and analysis focused on youth participants’ reported changes in learning during digital citizenship activities and shifts in key aspects of social and emotional wellness.

Research Design

How the Program Was Administered Online

The digital citizenship quantitative study was designed during the fall of 2020. It was during this semester that the digital citizenship activities and associated handbook were developed by several graduate assistants (GA) using the Common Sense Digital Citizenship Curriculum ([Common Sense Education, 2020](#)) online program, with the support of program faculty and staff. All aspects of the study were submitted for IRB review, and approval of the research design, instruments, and assent and consent forms and process were approved in November of 2020. Funding from the Cybersecurity Faculty seed grant was awarded in December of 2020, which ensured the funding of three GAs necessary for the facilitation of digital activities and data collection. GAs facilitated a total of four 50-minute digital citizenship activities with youth mentees and youths' assigned undergraduate student mentors. Activities highlighted specific aspects of digital citizenship, including digital wellness, digital accessibility, user data and securing digital devices, and personal information and the digital footprint.

How the Evaluation Was Administered

Pretest and posttest measures assessing understanding of student learning objectives for each activity were administered before the beginning of the activity and immediately after the activity. At the end of the 12-week mentorship program, youth also responded to select items from the Youth Participant Survey ([National Research Center, 2013](#)) pertaining to key aspects of social and emotional wellness. Each evaluation was administered using the Qualtrics online survey platform.

The digital citizenship curriculum included in this research is part of a youth mentorship curriculum; thus, all youth completed the activities and pretest and posttest regarding learning objectives. This is typical of this program, as new activities are employed each semester, and all participants engage in these activities, regardless of whether or not they elect to participate in research. Only those youth who provided assent—and parent/caregiver provided consent—for the team to pull the data for their pretest and posttest were included in the analysis. Parents/caregivers and youth sign consent and assent forms at intake providing permission to gather data for program purposes; the research consent and assent are separate and administered prior to initiation of the first of the digital citizenship activities and administration of pretest and posttest.

Over the course of the 12-week study and proceeding with data analysis, a number of challenges associated with the online facilitation of research emerged. The most challenging aspects of the online methods employed in this study included obtaining parent consent and youth participant assent, pretraining youth participants about how to participate in online activities and research, cultivating engagement during interventions (and managing accessibility of technology and internet access), and ensuring youth participants completed the online administered instruments as instructed.



Section Summary

- The digital citizenship quantitative study was designed in the fall of 2020, obtained funding in December of 2020, and was implemented over the course of 12 weeks in the spring of 2021.
- Four digital citizenship activities were adapted from the Common Sense Digital Citizenship Curriculum ([Common Sense Education, 2020](#)) online program and covered the following topics: digital wellness, digital accessibility, user data and securing digital devices, and personal information and the digital footprint.
- Several challenges related to the facilitation of online research surfaced over the course of the study related to consent and assent and participant ability to engage in online

activities and complete assessment measures.

Research Practicalities and Lessons Learned

Program—What Went Well, What Didn't Work So Well, What Would You Recommend (e.g., Issues With Tech, Distractions, etc.)

The challenges associated with conducting the digital citizenship study online involved a variety of factors and emerged during multiple stages of study development. From informed consent and assent to the administration of activities and data collection, there were several instances where an adjusted approach could have circumvented some of the difficulties experienced. These changes to methodology may have also improved the accuracy of study results. Primary areas of growth for improving our adaptation of research methods to the virtual environment, as well as processes that went well are outlined below.

Informed Consent

The youth mentorship program with which this study was conducted is based out of a university in the Rocky Mountain region and coordinated by members of the department of counseling and human services. The program partners with local urban and rural schools to recruit youth who might benefit from engaging in a supportive mentorship relationship with a trained undergraduate student mentor. Youth mentees are middle-school age (10–14 years of age), with priority for participation given to multiple marginalized youths from historically oppressed communities. Youths are referred to the mentorship program by their school counselors or school administration. Several weeks before the start of the program, youth and their parent and/or caregiver are contacted regarding the intake process. Starting in February 2020, all intake paperwork was transitioned online, with parents/caregivers completing intake forms via Adobe Sign. The completion of these forms was critical, as these initial consent and assent forms enable youth participation in all activities, and collection of data for program purposes (with additional informed consent and assent forms reviewed and signed for the digital citizenship study). Although parents/caregivers were contacted via phone to discuss the paperwork and programming information, this switch from in-person to online completion of intake and consent forms lead to a significant decrease in timely completion of these items. Program staff contacted parents/caregivers 2–4 times via phone and email to inquire about the completion of intake and informed consent forms before these items were completed and submitted, or the intake was deemed “incomplete” and the individual was removed from the participant list.

The lesson learned from this experience is that parents and caregivers may need additional support accessing and completing online intake and consent forms. When completing the intake and informed consent process in the virtual setting, program staff and research team members should schedule a time with each caregiver or parent and youth participant to meet virtually. This virtual meeting will be conducted via teleconference so that the team member and parent/caregiver and participant can review all paperwork together to ensure participant and caregiver understanding. This process may be completed by the staff or research team member sharing their screen or both parties having the paperwork open on their computer. Spending some time with the youth and caregiver prior to the initiation of programming may also serve as an opportunity to complete some pretraining or orientation to using the teleconference platform employed for virtual programming.

Pretraining

Meeting with parents/caregivers and youth participants to complete the intake paperwork and initial consent and assent forms would have provided the research team with an opportunity to provide the scaffolding

necessary for participants' successful engagement in online research. We propose initial pretraining and technology support for all participants in online studies to ensure adequate access to teleconference platforms and related applications. This initial meeting ought to utilize the same teleconference platform used during the facilitation of the virtual study, as this provides the research team member facilitating the meeting with the opportunity to provide a guided tour of the teleconference platform. Many parents/caregivers and participants may be unfamiliar with how to access teleconference platforms and, thus, may benefit from both a phone call and email prior to the first meeting that outlines how to access the teleconference platform on their device, how to set up an account, and where to find and how to utilize the teleconference meeting link. These instructions may also include where participants and their parents/caregivers can find online videos walking them through how to access the platform on their specific device.

The research team learned early in the planning for this digital citizenship study that some faculty and graduate assistants had a better understanding of the teleconference platform and Qualtrics online survey application used for this study. The team relied upon those members of the team who were more "technologically savvy" for guidance and technology support. Though our team members were good sports and willing to take on the role of in-house technology support, persons engaging in online research ought to take the time to ensure all of the team is oriented to the technology, teleconference platform(s), and online applications used.

Assent

Prior to COVID-19, the mentorship program obtained youth assent for research activities during the first night of programming by reviewing a hard copy of the assent document with a research team member, then initialing which aspects of the research they assented to, and signing the end of the document. During online programming and research facilitation, the assent form was transitioned to the online survey platform Qualtrics. Qualtrics provides an anonymous link to the survey that can be shared online. Online facilitation of mentorship programming was conducted using the Zoom teleconference platform, with some activities and discussions held in the "main room" (i.e., the teleconference room where all participants initially enter the meeting and remain if breakout rooms are not utilized), and others completed in small groups in the "breakout rooms" (i.e., private teleconference rooms for small group discussion). When working to obtain youth assent to participate in research, a research team member shared the link to the assent form in the chat window of the "main room" of the Zoom teleconference and asked that all youth click on the link to open the survey. The research team member then opened the survey on their computer and used the screen share option to review the assent document with all youth program participants.

A number of difficulties emerged during this process that prevented youth from completing the assent form in its entirety. One challenge that arose was the lack of access to technology that would allow the youth to fully view and complete the survey. Although the Qualtrics survey was considered "mobile-friendly" and thus could be completed using a phone, some youth who were engaging in programming using a mobile device (e.g., phone or tablet) did not know how to navigate having a Zoom meeting open and opening a link to another online platform. Other youth experienced difficulty remaining signed in and "in" the Zoom teleconference session due to lack of access to high-speed internet, and/or malfunctioning technology, or devices with software in need of updating. Youth participants were also confronted with several distractions during the assent process. From other devices (e.g., television, gaming systems, video applications) to parents/caregivers, loved ones, and pets, some youth seemed to only hear parts of the discussion around assent. The lack of understanding of some aspects of the assent form was evident in some youths' responses to the assent questions; for example, one youth entered a nickname in response to the "what are your initials" question on the assent, while another youth listed "a person." The initials provided on the assent were used to identify which participants had parent consent to participate in research, and thus, the data from those participants who misunderstood this request and provided inadequate information were not pulled for analysis.

The lessons learned during the assent process highlight the need for careful discussion of the assent form, and assent and consent process, as well as equitable access to technology and related resources necessary for engagement in online programming. Many youths utilized school-provided computers to participate in

programming via Zoom and experienced frequent “crashing” of their computer. It seemed that these devices, while able to complete basic school-related tasks, struggled to run the Zoom platform for extended periods of time. In addition to issues surrounding access to technology and hardware, the research team must also consider the impact of in-home distractions on youths’ attention to what is discussed during the assent process. Research team members may benefit from completing the assent process in small groups using teleconference breakout rooms, with a separate team member explaining the assent process to only a few participants at a time and checking in regularly regarding understanding.

Evaluation, What Went Well, What Didn’t Work So Well, What Would You Recommend (Including a Discussion of the Ethical Issues Associated With This)

Activities and Evaluation

Over the course of the 12-weeks of programming, the youth had the opportunity to complete four digital citizenship activities during four separate sessions. Although the digital citizenship curriculum was included as part of the mentorship program, participation in the activity was optional, and youth had the ability to select from multiple activities. Around 6–10 youth elected to participate in each digital citizenship activity, with each activity including a specific focus and sharing of information, an interactive activity, and a pretest and posttest regarding learning objectives. Youth and their parents/caregivers provided consent and assent during the intake process indicating that data will be collected during activities for program improvement purposes; parents/caregivers indicated in the consent form whether they provided consent for their youth’s data to be used for research purposes. Separate assent forms were provided to youth participants immediately before the first digital citizenship activity, enabling them to indicate whether they assented to having the responses to the pretest and posttest used in research. Only those youth participants who assented to having their responses utilized for research had their data pulled from Qualtrics for research purposes.

Several challenges emerged during the activities and evaluation process related to online facilitation that impacted both participants’ experience and the data collected. Activities were approximately 50 minutes in length, with the first 5 minutes spent completing the pretest, and the final 5 minutes dedicated to the completion of the posttest. Activities were facilitated in breakout rooms. Some participants experienced difficulty entering the breakout room and remaining in the Zoom teleconference session. On multiple occasions, youth dropped out of the Zoom conference due to issues with their device and/or internet access. After the first few times this occurred, it was discovered that a setting in Zoom had been selected (for security purposes) that prevented participants from rejoining. There were several occasions where participants either came into the breakout room late, and thus missed the pretest, or had to leave early and so did not complete the posttest.

One success achieved over the course of the project was the use of interactive online games to engage youth during digital citizenship activities and support learning of key concepts. During one activity, GAs introduced Google’s “Interland,” an online interactive game that enables participants to explore an online world with multiple “mountains” or spaces where multiple minigames are available. Each mini game introduces digital citizenship concepts, then illustrates their application through specific tasks played in game format. During this particular activity, GAs asked youth participants to click on the link to “Interland” (provided via the Zoom chat window) and go to “Mindful Mountain”. While in “Mindful Mountain,” participants played a game exploring how information is shared on the internet and what happens when we “overshare”. Participants then discussed personal information online and the digital footprint. Those youth who were able to participate in this game seemed highly engaged during this lesson. Unfortunately, some youth were unable to access the game due to a lack of access to high-speed internet and/or device issues.

Another success was the use of connection-based online games, followed by the use of the “think, pair, and share” format ([Cooper & Robinson, 2002](#)) for each digital citizenship activity. GAs who facilitated the activities consistently opened with an online multiplayer gamer application such as Tee K.O. and Skribbl.io to encourage youth to connect with one another and cultivate engagement. The participants then completed

the pretest, were introduced to key concepts (“think”), completed an activity that included small groups or pairs (“pairing”), and then engaged in a group discussion around how the concepts applied to their experience (“share”). The “think, pair, and share” format ([Cooper & Robinson, 2002](#)), combined with the development of connection through interactive online games, supported youth participants’ engagement during activities. Despite this success, some youth participants had difficulty maintaining participation due to internet connection or device issues.

The lesson learned during these experiences is the importance of ensuring that participants have the ability to access high-speed internet and the technology needed to participate in activities. Furthermore, research team members must understand platform settings that allow and disallow participant access to online sessions. It may be of benefit to have a research team member monitor the teleconference participant list during activities and follow up with participants who either join the breakout room late or leave early, to ensure they were able to fully participate and complete pretest and posttest measures. If participants miss too much of the intervention, the team member should ensure that the participant’s data is removed prior to analysis.



Section Summary

- During all online facilitation of programming, intake forms were entered into Adobe Sign and sent to the youth participants’ parents/caregivers. The online provision of intake paperwork ought to include an online meeting with intake coordinators to ensure participants have the information needed to access programming and online survey platforms.
- Participant assent can be obtained via Zoom teleconference program, with the use of Qualtrics to obtain youth’s virtually signed assent form; actions should be taken to ensure youth understanding of assent form and process and to minimize distractions.
- Engaging in online multiplayer gamer applications to establish a connection, before engaging in activities using the “think, pair, and share” format, can improve participant engagement.
- Participant access to adequate technology and high-speed internet is of the utmost importance when engaging in online research. The research team found that using online games to engage participants and review key concepts was particularly helpful but that participants must have adequate access to technology in order to successfully participate in online interventions.

Conclusion

As previously mentioned, the outcome of the digital citizenship quantitative research project was impacted in many aspects due to the shift from in-person to an online format. The faculty, staff, and GAs had several months to modify the program. Despite the successful transition to online programming, the digital citizenship study still encountered a variety of technological difficulties. Following the completion of the 12-week program and related study, the researchers learned valuable lessons to better engage in research online. While there were technological difficulties, many of the participants were able to engage virtually in new ways and be supported by their mentors during a difficult academic year. The digital citizenship activities offered participants an opportunity to engage in meaningful discussion virtually. Online platforms such as Qualtrics and Zoom enabled the facilitation of this study in the online setting, while interactive virtual games (e.g., Google’s “Interland”) enabled enhanced engagement with the material presented during digital citizenship activities. This offered unique discussion outcomes based on their current experience due to the COVID-19 pandemic.

The lessons learned during this online study speak to the adjustments needed to successfully transition a would-be in-person study to the online setting. Many aspects of the study, from obtaining assent and consent to the provision of interventions, and collection of data must be modified. One necessary adjustment includes meeting with parents/caregivers virtually via a teleconference platform like Zoom to review the

intake paperwork, how to use the virtual signature platform, and answer questions. This requires additional coordination with parents/caregivers to identify a schedule that allows paperwork to be completed. During initial sessions of programming, the research team must explore the type of technology available to each participant, their internet connection reliability, and the importance of minimizing distractions in the environment to engage full participation in activities.

This case study highlights additional considerations when transitioning research methodology online. The instruments utilized to collect data and ways we engaged in discussing them with youth required additional steps virtually. The researchers learned the importance of building in additional time for youth to complete the pretest and posttest virtually. The completion of the pretest and posttest were impacted if the youth had internet disruptions which required problem-solving. Additionally, the researchers learned the importance of increased communication between parents/caregivers to support the sustained engagement of the youth throughout the 12-week program. Increasing communication before and day of the program each week provides opportunities to help parents/caregivers and youth remember to join and set time for the program.



Classroom Discussion Questions

1. How do you select instruments that will be completed virtually with accessibility in mind? Consider the many layers of accessibility necessary for participation in online research, from internet speed, to appropriate technology (i.e., a tablet, phone, or computer).
2. How might you engage participants during virtual programming to ensure full participation during each intervention and over the course of a multiweek program?
3. How can we build online interventions that are appropriate for youth (ages 10–14), interactive and engaging, and best support youth's learning of new concepts?



Multiple Choice Quiz Questions

1. What was the curriculum used to facilitate the online program?

- a. Common Mind Citizenship Curriculum

Incorrect Answer

Feedback: This is not the correct answer. The correct answer is B.

- b. Common Sense Digital Citizenship Curriculum

Correct Answer

Feedback: Well done, correct answer.

- c. Commons Place Citizenship Curriculum

Incorrect Answer

Feedback: This is not the correct answer. The correct answer is B.

2. What was the age group of participants for the study?

- a. 6–10 years old

Incorrect Answer

Feedback: This is not the correct answer. The correct answer is C.

- b. 7–12 years old

Incorrect Answer

Feedback: This is not the correct answer. The correct answer is C.

- c. 10–14 years old

Correct Answer

Feedback: Well done, correct answer.

3. What is the purpose of the digital citizenship activities?

- a. To teach youth essential online skills to promote persistence in virtual and in-person education settings

Incorrect Answer

Feedback: This is not the correct answer. The correct answer is C.

- b. To teach youth to cultivate understanding of “rights, responsibilities and opportunities of living, learning, and working in an interconnected digital world

Incorrect Answer

Feedback: This is not the correct answer. The correct answer is C.

- c. Both a and b

Correct Answer

Feedback: Well done, correct answer.

4. When engaging in research online, it is safe to assume that everyone has access to high speed internet and adequate technology to complete the necessary paperwork (such as assent and consent), interventions and activities, and pre and posttests.

- a.True

Incorrect Answer

Feedback: This is not the correct answer. The correct answer is B.

- b.False

Correct Answer

Feedback: Well done, correct answer.

5. Participants who engage in research online may be confronted with a number of distractions in their environment. In this case study, distractions included loved ones, game systems, and online videos.

- a.True

Correct Answer

Feedback: Well done, correct answer.

- b.False

Incorrect Answer

Feedback: This is not the correct answer. The correct answer is A.

Further Reading

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