Post, Update, Tweet, or Snap? Promoting Safe Social Media Use for Young Adults with Intellectual Disability

A Dissertation Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

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May 2020

Dedication

For all past, current, and future students.

May you always defy gravity.

Acknowledgements

This dissertation and degree could not have been done without the support given by others. I am grateful for everyone who crossed my path during this process, the knowledge and professional skills I gained, and the incredible bonds created with those who gave endless support. I am especially thankful for the following:

God, for giving me strength, courage, talents, faith, and hope.

Mom and Dad, for instilling in me work ethic, love for knowledge, and curiosity.

Jody and Erik, for their endless support. Your support and willingness to talk me through many tear-filled phone calls gave me the strength to continue.

Teddy, for being best little furball ever! Thank you for the reminder that a good walk outside solves everything. I promise many days filled with belly rubs, fetch, walks, car rides, and squeaky toys to make up for the lack of attention you got during this dissertation process.

Karlee, Linda, Jerry, Eli, and Bella, for making this past year more enjoyable. Karlee, thank you for designing the survey T-shirt; coordinating with the VolShop; carpool karaoke; Starbucks, gym, and pool dates; laughter; the list goes on and on. You reminded me that while there are bigger stressors in life, it is important to take a step back and enjoy the little moments. Linda, thank you for pushing me to finish this dissertation, holding me accountable for finishing, and teaching me the meaning of all those Southern phrases. Thank you all for your friendship.

Michael M, for designing the infographic used in this dissertation, sharing my love of Disney and Scooby Doo, and bringing a smile to my face with a text message.

Digital Literacy students, for giving me the experience I needed to not only discover the need for this dissertation topic, but also my passion for it. I am grateful for all the smiles you brought to my face. I enjoyed every second of being your teacher and wish you the best for the future.

My committee, Dr. David Cihak, Dr. Maribeth Colemen, Dr. Tara Moore, and Dr. Jennifer Morrow, for supporting me throughout this process and allowing me to go down the path less travelled. Your feedback and expertise meant the world to me during this process. I would especially like to thank Dr. Jennifer Morrow, for supporting my survey idea when it first came into being during a Survey Research course; Dr. David Cihak, for supporting me and having faith in me throughout this process (especially when I got the idea to venture outside the College of Education and into the School of Information Sciences); and Dr. Carolyn Hank, for encouraging me to pursue this topic and guiding me during the very first steps of this dissertation.

Lastly, I would like to thank the UTK Graduate School for awarding me with the Student/Faculty Research Award and providing funding for the survey study of this dissertation.

Abstract

Social media (SM) use statistics for young adults with intellectual disability (ID) are more than 70% lower than young adults without ID (Anderson & Jiang, 2018; Jenaro, et al., 2018; Smith & Anderson, 2018). While there are benefits to young adults with ID using SM, concerns related to online safety continue to result in decisions that prohibit SM use and/or prevent SM use education for these young adults. Currently, few online resources provide SM safety education specifically for these young adults. Additionally, no research has investigated instructional strategies that can be used when teaching SM safety to young adults with ID. Therefore, the purpose of this dissertation was to identify the need for these instructional strategies, propose a possible SM safety instructional strategy, and assess the effectiveness of this proposed solution.

Study 1 of this dissertation explored the SM risk combating knowledge, perceptions of SM use, SM use, and desire to use SM of young adults with ID through the implementation of a nationally distributed accessible online survey. Results indicated that young adults with ID desired to learn more about using SM, perceived SM as beneficial to use, already used SM platforms, did not have knowledge of addressing risks pertaining to hacked accounts, and mainly learned SM use from family. Facebook was the most used SM platform and Twitter was the least used. The platforms of Facebook, Instagram, and Snapchat were reported as easy to use, while Twitter was identified as hard to use and the least desired to be used.

Study 2 proposed the instructional strategy of using a visual checklist and corrective feedback to teach young adults with ID the skill of electronic message safety level identification. Effectiveness of this strategy was assessed through the implementation of a single-subject multiple probe across participants design in which accuracy of electronic safety level

identification was measured through online simulations. Generalization into the platforms of Gmail, Facebook, Instagram, Twitter, and Snapchat, as well as skill maintenance, were evaluated. All five female participants immediately improved on identification accuracy, generalized this skill into SM platforms, and maintained the skill two weeks later.

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List of Key Terms

Young Adult: Individuals between the ages of 13 (minimum age required for an individual to have a social media account) and 24 (maximum age for the young adult age group set by the PEW research center).

Intellectual Disability: Individuals who have (a) deficits in intellectual functions; (b) deficits in adaptive functioning; and (c) symptoms present during the development period (American Psychiatric Association, 2013).

Social Media: Any online service through which users can create and share a variety of content (Bolten et al., 2013).

Social Media Platforms: According to the Pew Research Center (2018), the most popular social media platforms in 2018 were that of Facebook, Snapchat, Instagram, and Twitter. Therefore, these platforms were used as the focus of this dissertation.

Social Media Use: Contributing, sharing, searching, and/or consuming content on social media platforms (Bolten et al., 2013).

List of Abbreviations

SM: Social Media

ID: Intellectual Disability

SLT: Social Learning Theory

UDL: Universal Design for Learning

ZPD: Zone of Proximal Development

TAM: Technology Acceptance Model

PU: Perceived Usefulness

PEU: Perceived Ease of Use

IRB: Institutional Review Board

LAR: Legally Authorized Representatives

PSE: Postsecondary Education

VC: Visual Checklist

CF: Corrective Feedback

PEM: Percentage Exceeding the Median

Chapter 1

Social Media Use of Young Adults with Intellectual Disability

Problem Statement

According to the PEW Research Center, American young adults (aged 18 to 24) used social media (SM) platforms more frequently than other age group in 2018. Of these young adults, 78% used Snapchat, 71% Instagram, 45% Twitter, and 71% visited multiple platforms multiple times per day (Smith & Anderson, 2018). Among the American young adult population aged 13 to 17, 85% used YouTube, 72% Instagram, 69% Snapchat, 51% Facebook, and 32% Twitter. Snapchat was identified as the most often used SM platform for this age range (Anderson & Jiang, 2018). Additionally, it was found that the majority of Americans use at least three of eight SM platforms (Smith & Anderson, 2018). As can be inferred from these statistics, the majority of American young adults use some form of SM platform. However, these statistics are quite different for American young adults with intellectual disability (ID). In fact, the existing literature that examined the SM use of these young adults have found that none of these young adults reported using Snapchat, 19.4% used Twitter, 25% Instagram, and 56% Facebook (Jenaro, et al., 2018). With some of these statistics being more than 70% lower than young adults without ID, it can be inferred that the divide between the SM use of young adults with ID and their same aged peers is vast.

As an instructor of digital literacy courses for young adults with intellectual and/or developmental disabilities, this researcher has made the observation of this population's desire to participate in using SM like their non-disabled peers. The researcher also had conversations with parents of these young adults who would like their young adult to increase their use of SM to further connect with peers and family. Research has found that many young adults with ID, as

well as their parents, have these same desires. (Darragh, Reynolds, Ellison, & Bellon, 2017; Löfgren-Mårtenson, Molin, & Sorbring, 2018; Molin, Sorbring, & Löfgren-Mårtenson, 2017; Ramsten, Martin, Dag, & Hammar, 2018; Shpigelman, 2017; Sorbring, Molin, & Löfgren-Mårtenson, 2017). While there are many benefits of SM use driving these desires, concerns regarding online safety continue to heavily weigh decisions that prohibit, or limit, SM use and education for these young adults (Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Darragh, et al., 2017; Jenaro, et al., 2018; Löfgren-Mårtenson, et al., 2018; Löfgren-Mårtenson, Sorbring, & Molin, 2015; Merells, Buchanan, & Waters, 2017; Molin, et al., 2017). With education and training in SM safety skills, young adults with ID can learn to safely navigate and use SM platforms. However, curriculums and instructional strategies geared specifically towards teaching SM and internet safety to these young adults do not exist. This demonstrates a need to conduct research in this area. Therefore, the purpose of this dissertation was to identify the need for SM safety instruction geared specifically towards young adults with ID, propose a possible instructional strategy that could be used in this instruction, and assess the effectiveness of this proposed instructional strategy.

Organization of Dissertation

This two-study dissertation used an action research design, which identifies a problem, investigates the current status of the problem, proposes a possible solution to the problem, and assesses the solution for effectiveness (Stringer, 2007; Willis & Edwards, 2014). The four chapters of this dissertation follow the action research process. Chapter 1 outlines the problem, purpose, and research questions addressed by the two studies of this dissertation. Included in this chapter is a detailed discussion of the results of a systematic literature review and the theoretical framework used to design the research methods of both studies. Chapter 2 consists of the first

study, which was conducted to identify the current status of the need for SM safety instruction geared specifically towards young adults with ID. Within this chapter, the formation of an accessible survey, implementation of the survey with young adults with ID, and survey results are discussed. Chapter 3 is comprised of study 2, which analyzed the formation, implementation, and effectiveness of using a visual checklist and corrective feedback to increase accuracy of electronic message safety level identification for young adults with ID. Lastly, chapter 4 includes a discussion of findings, limitations, implications, and future research related to SM safety instruction for young adults with ID.

Purpose

The purpose of this dissertation was to examine the need for SM safety instructional strategies geared specifically towards young adults with ID, form a possible instructional strategy that could be used in this instruction, and assess the effectiveness of this instructional strategy. In study 1, a survey research study was designed and implemented to determine the need for young adults with ID to receive SM safety instruction. Study 2 implemented a single-subject study to examine the effectiveness of using a visual checklist and corrective feedback to increase the accuracy of electronic message safety level identification for young adults with ID. The specific research questions addressed by both studies are included in the following paragraphs.

Study 1. The purpose of this study was to identify the need for SM safety instruction formed specifically for young adults with ID. To identify this need, it is important to distinguish not only if these young adults use, or want to use SM platforms, but also how they perceive SM platforms. It is also critical to examine their knowledge of combating SM risks that could occur when using SM platforms. Specific research questions addressed by this study included:

1. What knowledge do young adults with ID have in regard to combating SM safety risks?
    a. What is the relationship between learning SM from school, friends, or family and knowledge of combating SM risks?
2. What perceptions do young adults with ID have in regard to using SM?
3. What is the current SM use of young adults with ID?
4. Do young adults with ID desire to use, or increase their use of, SM?

Study 2. The purpose of this study was to examine the effectiveness of using a visual checklist and corrective feedback to teach electronic message safety level identification to young adults with ID. The specific research questions addressed by this study included:

1. What is the effectiveness of using a visual checklist and corrective feedback to increase accurate identification of the safety level of electronic messages for young adults with ID?
2. What is the social validity of using a visual checklist to support online safety for young adults with ID?

Theoretical Foundations

As this dissertation focused on examining the need for SM safety instruction and the effectiveness of an instructional strategy, the theories that grounded research methods related to the domains of SM use and learning. Specific theories used included that of the Technology Acceptance Model (Davis, 1989), Social Learning Theory (Bandura, 1971), Zone of Proximal Development (Vygotsky, 1978), Bloom's Taxonomy for Learning (Bloom, 1976), and Universal Design for Learning (Meyer & Rose, 1998). Each of these theories, and how they were applied to the research methods used in this dissertation, are discussed within the following sections.

SM Theory

Since the rise of SM, numerous theories have been formed to aid in the determination of why, and how, individuals use SM. The constructs of these theories have been utilized to form survey items and rating scales to predict and analyze SM use, as well as behaviors of individuals on SM. The theory most frequently used to form survey protocols used to predict and analyze the SM use of individuals is that of the Technology Acceptance Model (TAM; Davis, 1989). To form a survey protocol that could effectively measure how young adults with ID use and perceive SM, the researcher utilized TAM constructs to form survey components and questions. The constructs of TAM are discussed in detail within the following paragraph.

Technology Acceptance Model. Driving the design and creation of the survey in study 1, was the Technology Acceptance Model (TAM; Davis, 1989). TAM uses the constructs of perceived usefulness and ease of use to explain an individual's attitude towards using, intention to use, and actual use of a technological device. While TAM was originally formed to explain and predict an individual's acceptance of technological devices (i.e., computers, cell phones, tablets, etc.), the model has been used to predict, explain, and gather an individual's perception/use of SM (Hossain & Silva, 2009; McGowan, et al., 2012; Kwon & Wen, 2010; Rauniar, et al., 2014; Sánchez, Cortijo, & Kaved, 2014). The first construct of TAM, perceived usefulness, refers to the extent one believes a technological device to be useful. This construct directly impacts an individual's attitude towards the device, as well as their intention to use it. The second construct of TAM, perceived ease of use, refers to the degree in which an individual perceives a technological device as easy to use. Perceived usefulness can directly impact an individual's attitude towards a technological device and their intention to use it. In contrast, the construct of perceived ease of use can only directly impact an individual's attitude towards the

device and the degree to which they perceive it to be useful. The complete TAM can be seen in Figure 1.

In study 1, the TAM constructs of perceived ease of use and perceived usefulness were used to develop survey items and aid in survey organization. According to TAM, the use of these two constructs would allow for the prediction of the attitude young adults with ID have towards using SM and/or their intention to use SM. These predictions, combined with knowledge of combating SM risks, can assist in the identification of the need for SM safety instruction geared specifically towards young adults with ID. For example, if the majority of survey respondents perceive SM platforms to be useful and/or easy to use, it can be predicted that they already use SM, desire to use SM, and/or have good attitudes toward using SM. In this situation, safety instruction will be needed if a lack of knowledge pertaining to combating SM risks exists.

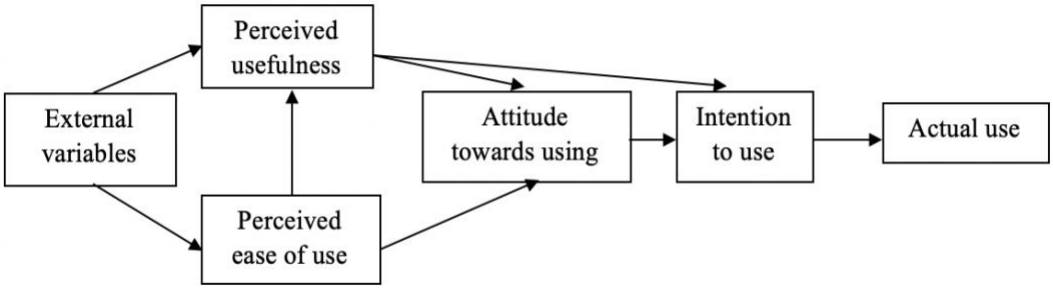


Figure 1: *Technology Acceptance Model (Davis, 1989)*

Learning Theories

In order to form a possible strategy that would be effective in teaching SM safety skills to young adults with ID, the researcher utilized several learning theories. These theories were used to form the visual checklist, instructional methods, and research phases of study 2, as well as the accessibility features of the survey used in study 1. Among the theories used were that of the Social Learning Theory (Bandura, 1971), Zone of Proximal Development (Vygotsky, 1978), Bloom's Taxonomy for Learning (Bloom, 1976), and Universal Design for Learning (Meyer & Rose, 1998). Each of these theories are discussed in the following paragraphs.

Social Learning Theory. In the social learning theory (Bandura, 1971), it is stated that learning occurs either through direct experience or the observation of behavior in one's surroundings. When this theory is utilized in educational settings, teachers implement the practice of modeling. Bandura stated that effective modeling must: (a) be done by an individual who is an associational preference for the student; (b) be intrinsically rewarding; (c) create a visual picture for the student that references their prior knowledge and can be paired with a new stimulus; and (d) provide task analyzed directions that can be reproduced by the student. Bandura also identified four sub-processes of modeling: (a) attentional, which occurs when the teacher obtains the full attention of the student; (b) retentional, which occurs when a student begins to retain information through observing the modeling being done; (c) motoric reproduction, which occurs when a student begins to put together the task analyzed sequences to create a response similar to the modeling that was done; and (d) reinforcement, which is done when the instructor provides the student with positive feedback. When forming the intervention for study 2, the concept and subprocesses of modeling were used throughout the training stage to

teach study participants to use the visual checklist when determining the safety level of an electronic message.

Zone of Proximal Development. In 1978, Vygotsky identified the gap between a learner's prior knowledge and the knowledge they need to gain in order to reach mastery as the Zone of Proximal Development. When using this theory, a teacher assesses a student's prior knowledge about the concept being taught and gradually fades assistance/prompts as the student begins to gain new knowledge. Depending on the student's amount of prior knowledge, much assistance/prompting may need to be used at the beginning of instruction. Once a student has reached mastery, the student is able to independently perform the learned task and all assistance/prompts are faded. This process has been identified as scaffolding. The concept of assessing prior knowledge was used throughout the baseline and training phase of study 2. Scaffolding was implemented during the training, intervention, and generalization phases of study 2.

Bloom's Taxonomy for Learning. In Bloom's Taxonomy for Learning, Bloom (1976) identified six levels of thinking that students achieve throughout the learning process. The six levels of learning include: (a) knowledge, which is defined as the ability to recall facts, terminology, trends, sequences, concepts, and principles; (b) comprehension, defined as the ability a student has to take the knowledge they have learned, interpret it, and then translate it into their own words; (c) application, the student's ability to use the information they have learned and apply it to problem solving or making decisions; (d) analysis, the ability to analyze individual parts, elements, relationships, and organizational principles of a concept that has been learned; (e) synthesis, the ability to put together what one has learned to form a meaning, idea, or plan; and (e) evaluation, the ability to evaluate and make judgments based on the concepts that

have been learned. To promote generalization into SM platforms, the training, generalization, and maintenance phases in study 2 were designed so that all six levels of thinking were utilized by participants.

Universal Design for Learning. The last theory used to form research methods was that of Universal Design for Learning (UDL; Meyer & Rose, 1998). UDL "reflects an awareness of the unique nature of each learner and the need to accommodate differences by creating learning experiences that suit the learner and maximize his or her ability to progress. UDL provides a framework that helps teachers differentiate their instruction through carefully articulated goals and individualized materials, methods, and assessments" (Rose & Meyer, 2002, p. 70). The UDL framework is based off the following three brain networks used in learning: recognition (recognizing and recalling knowledge), strategic (planning, organizing, strategic thinking, expression), and affective (attention and motivation; Meyer & Rose, 2000). These three brain networks were utilized to form the three components of the UDL framework, multiple means of representation (recognition network), expression (strategic network) and engagement (affective network; Chita-Tegmark, Gravel, Maria De Lourdes, Domings, & Rose, 2012; Gargiulo & Bouck, 2018; Rose & Dalton, 2009; Rose & Meyer, 2002).

Multiple means of representation, engagement, and expression were used during the formation of the survey in study 1 and the training phase of study 2. Within the survey, videos with a closed captioning option that contained video modeling and/or descriptions of survey components, enlarged and bolded text, text-to-speech audio clips, and pictorial and text response options were embedded to serve as multiple means of representation and engagement. Additionally, the online format allowed for multiple means of expression through providing opportunities for respondents to give verbal or gestural responses to an individual inputting their

response choices, input their own responses through clicking on their response choice with a mouse on computers, or select their response with their finger on touch screen devices. During the training phase of study 1, think-aloud teacher modeling, opportunities to practice with printed copies of the checklist and electronic messages, guided verbal practice, discussions with teacher, having the choice to read messages alone or have the teacher read aloud, and opportunities to practice using the visual checklist with electronic messages on a computer simulation were used as multiple means of the UDL components.

Literature Review

Prior to the formation of the research methods used in this dissertation, a systematic literature review was conducted to identify trends, issues, and instructional interventions pertaining to the SM use of young adults with ID. The search methods and inclusion criteria for this literature review are discussed within the following paragraphs.

Literature Search Procedures

When identifying existing literature pertaining to the SM use of young adults with ID, several search procedures were used. The databases of Google Scholar, Educational Resources Information Center (ERIC), and Academic Search Complete were used to conduct searches during December of 2018. Databases were searched using a combination of the following search terms:

(1) (young adult) OR (youth) OR (adolescent)

AND

(2) (intellectual disability) OR (cognitive disability) OR (developmental disability)

AND

(3) (social media) OR (internet) OR (social networking sites) OR (Facebook) OR (Snapchat) OR (YouTube) OR (Twitter) OR (Instagram) OR (ICT) OR (Information Communication Technology)

These search terms resulted in a total of 29 articles being identified as studies that had potential for inclusion in this literature review. Articles were examined for inclusion based on the criteria discussed within the inclusion criteria section of this paper.

Inclusion Criteria

In order to identify literature relevant to the specific purpose of this dissertation, inclusion criteria were set. If located literature met each of the following criteria, it was selected for inclusion in this literature review: (a) study participants either were (i) young adults with ID or (ii) the parents, guardians, caretakers, teachers, or support staff of young adults with ID; (b) the research pertained to the use of SM sites, specifically those of Facebook, Twitter, Snapchat, and Instagram; (c) the publication was written in English; (d) were included in peer review journals or conference proceedings; and (e) were published between the dates of history to December 2018. Any studies that did not meet these criteria were excluded from the review. Using this inclusion criteria, four of the 29 articles were excluded from this literature review. This resulted in a total of 25 studies being included in this literature review. Each of these studies are discussed within the following results section.

Results

Twenty-five studies met the inclusion criteria set for this literature review. Eleven of these studies used qualitative designs that implemented semi-structured interviews. Six studies utilized a survey research design. Four studies used mixed method approaches that implemented interviews, surveys, observations, and/or single subject designs. Only two of these mixed method

studies utilized single subject designs. Both of these studies used a pre and post-test measure to provide evidence of the effectiveness of an intervention. Lastly, two of the included studies were literature reviews. It was also noted that three researchers appeared frequently as authors of the included studies. Additionally, the majority of included studies originated in Scandinavian countries. Only one of the included studies originated in the United States. However, two studies originated in Israel, but used United States citizens as survey participants. This limited amount of research indicated a need for this research to be done in the United States. Further details pertaining to the designs, participants, and findings of included articles are provided in Appendix A.

After analyzing each study's design and findings, seven themes were identified. These themes were that of: (a) benefits of young adults with ID using SM; (b) risks of young adults with ID using SM; (c) perceptions individuals have pertaining to these young adults using SM; (d) actual use of SM by young adults with ID; (e) barriers to these young adults using SM platforms; (f) support needed for these young adults to successfully use SM; and (g) SM interventions implemented with young adults with ID. Each of these themes are discussed in more detail within the following sections of this paper. Appendix A includes information pertaining to the frequencies of theme appearances within the 25 included articles.

Benefits

Fourteen of the 25 included studies mentioned benefits young adults with ID could experience from using SM. These benefits were further categorized into the four categories of social, learning, self-esteem, and society inclusion. These categories are discussed in more detail within the following paragraphs.

Social. Socialization was identified as the main benefit young adults with ID could experience from SM use. Parents, educators, and caretakers of young adults with ID; members of the general population without a diagnosis of ID; and young adults with ID have all expressed that SM allows these young adults to keep in contact with friends and family (Chadwick, Quinn, & Fullwood, 2016; Chadwick, Wesson, & Fullwood, 2013; Löfgren-Mårtenson, Molin, & Sorbring, 2018; Raghavendra, Hutchinson, Grace, Wood, & Newman, 2018; Sallafranque-St-Louis & Normand, 2017; Shpigelman, 2017; Sorbring, Molin, & Löfgren-Mårtenson, 2017). Other social benefits included opportunities to participate in support groups (Chadwick, et al., 2016), gain access to advice, increase feelings of social connectedness (Raghavendra, et al., 2018), strengthen existing relationships, share mutual interests with others (Raghavendra, et al., 2018; Shpigelman, 2017), and gain confirmation from others (Löfgren-Mårtenson, Sorbring, & Molin, 2015). Parents and support staff noted that SM was a great place for these young adults to go when experiencing feelings of loneliness or isolation (Löfgren-Mårtenson, et al., 2015). Parents and caretakers also indicated that SM gave young adults with ID the ability to communicate in an age appropriate way that was easier for them, due to the visual means (i.e., emoticons, memes, gifs, etc.) available for use (Raghavendra, Newman, Grace, & Wood, 2015). The last social benefit was given by parents of young adults with ID. Some parents stated that their young adult has friended parents of their friends who also have an ID on SM. These parents felt relief from this because it gave their young adult a way to get in contact with another guardian figure who understood them (Sorbring, et al., 2017).

Learning. Another common benefit among the 25 included studies was that of SM providing opportunities for young adults with ID to learn, practice, and increase skills (e.g., initiating online conversations, increase word recognition, learn how to redecorate a bedroom,

etc.). Parents who participated in semi-structured interview studies felt that SM could provide opportunities for their young adult who has an ID to gain more awareness of their disability (Molin, Sorbring, & Löfgren-Mårtenson, 2015), a safer place to practice real life social skills (Raghavendra, et al., 2018; Sorbring, et al., 2017), an opportunity to expand their knowledge and perspective of the world around them (Shpigelman, 2017), and a safe place to learn about sexuality (Darragh, Reynolds, Ellison, & Bellon, 2017; Löfgren-Mårtenson, et al., 2015) or take sexual risks that would be risky when done face-to-face (Löfgren-Mårtenson, et al., 2015). Additionally, parents found that frequent SM use resulted in their young adult increasingly using clearer and more meaningful communication (Keskinen, Heimonen, Turunen, Rajaniemi, & Kauppinei, 2012; Raghavendra, et al., 2015), improved word recognition (Raghavendra, et al., 2018), and increased confidence in written and spoken communication (Raghavendra, et al., 2015). Members of the general population who did not have ID felt that SM use by individuals with allowed for opportunities to learn about further educational and work opportunities (Chadwick, et al., 2016). Lastly, parents and caretakers both indicated that SM use gave young adults with ID the opportunity to learn social skills, such as initiating online contact and starting a conversation (Sorbring, et al., 2017).

Self-Esteem. Opportunities to increase self-esteem was the third most frequently mentioned benefit of young adults with ID using SM. Parents and teachers of young adults with ID felt that SM allowed these young adults to create a self-presentation that was more favorable and non-stigmatized (Caton & Chapman, 2016; Chadwick, et al., 2013; Molin, et al., 2015), which resulted in allowing these young adults to feel more "normal" (Löfgren-Mårtenson, et al., 2015). Support staff and parents indicated that SM allowed young adults with ID to feel proud of their accomplishments through the receiving of compliments from others on SM (Shpigelman,

2017). The last self-esteem benefits were discussed by young adults with ID. These young adults indicated that SM allowed them to receive emotional support from others (Sallafranque-St-Louis & Normand, 2017) and feel like everyone else (Shpigelman & Gill, 2014).

Inclusion in Society. The last cited benefit of young adults with ID using SM was that of societal inclusion. Parents, teachers, caretakers, and support staff of young adults with ID felt that SM gave these young adults access to a wider society, which resulted in greater opportunities for the young adult to participate in society (Molin, et al., 2015; Shpigelman, 2017). To further discuss this benefit, parents of young adults with ID informed Molin, et al., (2015) about their anxiety pertaining to society continually moving onto SM platforms. This anxiety resulted in parents feeling it was crucial for their young adult to have SM accounts and that denying their young adult access to SM resulted in further exclusion from society.

Risks

Eleven of the 25 studies identified risks that could occur when young adults with ID use SM. It was noted that young adults with ID held two different roles when engaged in SM risks. These two roles were that of the victim (Chadwick, et al., 2016; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Löfgren-Mårtenson, et al., 2018; Löfgren-Mårtenson, et al., 2015; Raghavendra, et al., 2018; Shpigelman, 2017) and perpetrator (Chiner, et al., 2017; Löfgren-Mårtenson, et al., 2015). Lastly, it was found that young adults with ID had strategies they used to handle SM risks (Löfgren-Mårtenson, et al., 2015; Löfgren-Mårtenson, et al., 2018; Molin, Sorbring, & Löfgren-Mårtenson, 2017; Raghavendra, et al., 2018; Sallafranque-St-Louis & Normand, 2017; Schaafsma, Kok, Stoffelen, & Curfs, 2017; Sorbring, et al., 2017). The roles of victim and perpetrator, as well as ways in

which these young adults combated SM risks are discussed in more detail within the following paragraphs.

Victims. The majority of identified SM risks that could occur to young adults with ID were those in which the young adult was the victim. These risks included that of being bullied (Chadwick, et al., 2016; Löfgren-Mårtenson, et al., 2018), threatened (Chadwick, et al., 2016), harassed, insulted (Chiner, et al., 2017), susceptible to online scams (Chadwick, et al., 2016), told unpleasant things (Chiner, et al., 2017; Chiner, et al., 2017**)**, blocked (Chiner, et al., 2017), asked for pictures or information (Chiner, et al., 2017), and given opportunities to provide too much information to others (Chadwick, et al., 2016). Risks that were concerns for caretakers of young adults with ID and members of the general population without an ID were that of sexual nature. These risks included that of the young adult being sent pictures or videos that were sexual in nature (Chiner, et al., 2017), sexually assaulted, (Löfgren-Mårtenson, et al., 2018) and able to access inappropriate content (i.e., pornography; Löfgren-Mårtenson, et al., 2015; Raghavendra, et al., 2018). Other concerns related to the young adult's privacy, security, and addiction to SM (Shpigelman, 2017). The last identified risk was that of the emotions that occur when the young adult forms an online relationship with people who remain unknown in face-to-face life. Parents discussed their concerns pertaining to the despair and sadness that occurred when their young adult ended a relationship with an online significant other (Löfgren-Mårtenson et al., 2015).

***Experienced risks*.** Young adults with ID stated they had personally experienced SM risks. Among these risks were those of having been bullied (Molin, et al., 2017), blocked (Chiner, et al., 2017), told unpleasant things, insulted (Chiner, et al., 2017; Sallafranque-St-Louis & Normand, 2017), mocked, threatened (Molin, et al., 2017; Sallafranque-St-Louis & Normand, 2017), flirted with against their will (Chiner, et al., 2017), asked to provide pictures that were

sexual in nature (Sallafranque-St-Louis & Normand, 2017), asked for sexual information, and asked to talk about sex against their wishes. Also noted were the experiences of receiving pictures or videos that were sexual in nature and did not want to be seen (Chiner, et al., 2017; Sallafranque-St-Louis & Normand, 2017), having someone use their password without their consent (Chiner, et al., 2017), and agreeing to meet someone offline without notifying anyone of their meeting (Sallafranque-St-Louis & Normand, 2017).

Perpetrators. The other identified SM risks involved young adults with ID being the perpetrator. Surveyed caretakers indicated that young adults with ID have insulted others, threatened someone, used someone else's personal information, and sent sexual pictures or videos without asking for the recipient's consent (Chiner, et al., 2017). Young adults with ID have identified that they blocked someone, said unpleasant things to others, insulted someone, threatened others, and flirted with someone without their consent (Chiner, et al., 2017). Löfgren-Mårtenson, et al., (2015) found that educators believed these actions occurred because the young adult who has an ID is not aware of the consequences of their actions in online interactions.

Combating Risks. Seven articles gave evidence that young adults with ID are not only aware of risks that could occur with SM use but are also knowledgeable about ways to mitigate these risks. Blocking and deleting individuals who sent unwanted or bothersome messages were the most commonly cited strategies used by young adults with ID (Löfgren-Mårtenson, et al., 2015; Löfgren-Mårtenson, et al., 2018; Raghavendra, et al., 2018; Schaafsma, et al., 2017). It was also found that young adults with ID did not send friend requests to strangers on SM (Sallafranque-St-Louis & Normand, 2017), seldom agreed to meet a person they have only met online in real life (Löfgren-Mårtenson et al., 2015), and refused to comply with unwanted requests sent to them on SM (Sallafranque-St-Louis & Normand, 2017). Lastly, parents,

caretakers, and support staff of young adults with ID indicated that whenever a risky situation occurred on SM, the young adult with would often discuss the situation with them (Molin, et al., 2017; Sorbring, et al., 2017).

Perception of SM Use

Six articles indicated that individuals have mixed feelings pertaining to young adults with ID using SM. Young adults with ID stated that using Facebook was a positive experience, which they enjoyed (Shpigelman & Gill, 2014). The majority of these young adults' parents perceived SM as positive for their young adult (Löfgren-Mårtenson, et al., 2015; Shpigelman, 2017). Furthermore, several parents believed that the benefits their young adult could experience from using SM outweighed the possible risks. According to these parents, the real risk was for their young adult to experience social isolation and loneliness. They believed that SM use alleviated these two risks for their young adult (Löfgren-Mårtenson, et al., 2015). While parents had an overall positive feeling about young adults with ID using SM, teachers and support staff of these young adults had more mixed feelings. Some support staff believed that SM was beneficial for these young adults (Löfgren-Mårtenson, et al., 2018; Shpigelman, 2017), while others had more negative feelings (Löfgren-Mårtenson, et al., 2015; Löfgren-Mårtenson, et al., 2018; Shigelman, 2017). One staff member, who expressed that SM use was beneficial to these young adults, stated that the risks in the virtual world of SM were the same as the risks in the real world (Shigelman, 2017). Other support staff members felt that SM was full of bullying, sexual assault, and sexual risks (Löfgren-Mårtenson, et al., 2018). This resulted in negative feelings towards young adults with ID using SM. Teachers of these young adults indicated that while SM provided opportunities, problematic situations were likely to occur (Molin, et al., 2015). Lastly, 91% of caregiver survey respondents identified the internet as unsafe for adults with ID. 100% of these

caregivers deemed it as completely unsafe for minors with and without an ID (Chadwick, et al., 2016).

Actual Use

Fifteen articles discussed the actual use of SM done by young adults with ID. These articles discussed platform specific use, amount of SM use, reasons these young adults use SM, and reasons they do not use SM. Each of these are discussed in more detail within the following paragraphs.

Platform-Specific Use. Among the SM platforms, Facebook and YouTube were found to be the preferred platforms of young adults with ID (Ågren, Kjellberg, & Hemmingsson, 2018; Merells, Buchanan, & Waters, 2017; Sallafranque-St-Louis & Normand, 2017; Schaafsma, et al., 2017; Sorbring, et al., 2017). Two studies indicated that the SM use of young adults with ID was similar to that of the use of young adults who do not have an ID (Jenaro, et al., 2018; Sallafranque-St-Louis & Normand, 2017). A 2018 survey given to 216 young adults with ID found that 81% of these participants used YouTube, 56% used Facebook, 25% used Instagram and 19.4% used Twitter (Jenaro, et al., 2018). These preferences were similar to the preferences of the 410 young adults who do not have an ID and were also surveyed. Additionally, young adults with ID have a Facebook friend network of 20 to 400 (Sallafranque-St-Louis & Normand, 2017). This network is comprised of close family members, extended family members, and friends from school, work, and the community. This was also comparable to the friend networks maintained by American adults who do not have an ID. It was also found that Twitter was not used by young adults with ID because it was too difficult (Schaafsma, et al., 2017). Lastly, there was only one mention of a young adult who had an ID using Instagram (Ramsten, et al., 2018) and Snapchat (Lofgren-Martenson, et al., 2018).

Amount of Use. The actual amount of SM use done by young adults with ID varied across studies (Caton & Chapman, 2016; Ramsten, et al., 2018; Shpigelman & Gill, 2014). Shpigelman and Gill (2014) found that the majority of 34 adults who had an ID and were aged 18 or older accessed Facebook at least once a week from their own devices without the assistance of a caregiver or friend. Only 25% of these participants used Facebook at least once a day. Ramsten, Martin, Dag, & Hammer (2018) found that young adults with ID used YouTube on a daily basis and some used the same SM platform more than once a day.

Reasons for SM Use. The reasons young adults with ID used SM was investigated in several survey and interview studies. Results of these studies indicated that these young adults use SM for more than one reason. However, the main reason for their SM use was that of keeping in touch with friends and family (Chiner, et al., 2017; Darragh, et al., 2017; Löfgren-Mårtenson, et al, 2015; Merells, et al., 2017; Ramsten, et al., 2018; Sallafranque-St-Louis & Normand, 2017; Schaafsma, et al., 2017; Sorbring, et al., 2017). Other cited reasons were that of finding significant others (Löfgren-Mårtenson, et al., 2015; Schaafsma, et al., 2017), watching videos (Chiner, et al., 2017), chatting with friends when feeling lonely (Darragh, et al., 2017; Löfgren-Mårtenson, et al., 2015; Ramsten, et al., 2018; Shpigelman & Gill, 2014), getting inspiration (Ramsten, et al., 2018), experiencing joy (Caton & Chapman, 2016; Ramsten, et al., 2018), creating new friends (Darragh, et al., 2017), seeing what others are doing (Ramsten, et al., 2018; Sallafranque-St-Louis & Normand, 2017), showing identity (Shpigelman & Gill, 2014), exploring sexuality (Darragh, et al., 2017), joining community groups based on interests and hobbies (Darragh, et al., 2017), discussing emotions (Shpigelman & Gill, 2014), and entertainment (Sallafranque-St-Louis & Normand, 2017; Shpigelman & Gill, 2014; Sorbring, et al., 2017). Also noted was the fact that these young adults had a desire to use SM “like everyone

else" (Molin, Sorbring, & Löfgren-Mårtenson, 2017, p. 653) and felt that one missed out on vital life experiences by not using SM (Molin, et al., 2017). These young adults also had a desire to form more authentic relationships through using SM (Molin, et al., 2017). Lastly, it was noted that gender differences in the reasons young adults with ID used SM existed. Löfgren-Mårtenson, et al. (2015) found that young adults who had an ID and were female were more involved in using SM for relationship-seeking behaviors. The young adults who had an ID and were male used SM mainly for factual reasons.

Reasons for Not Using SM. Only two reasons were given as the cause of young adults with ID not using SM. Schaafsma, et al. (2017), found that one participant did not use Facebook because they were informed that private data were made public by Facebook. While this participant stated that they did not know if this was true, it still resulted in their decision to not use SM. The second reason for these young adults not using SM was found to be that of having access to SM denied, limited, or restricted by their parents, caregivers, or support staff (Darragh, et al, 2017; Lofgren-Martenson, et al., 2018).

Barriers

Fourteen studies found barriers that limited the use of SM for young adults with ID. These barriers included skill deficits, safety concerns, accessibility, technical matters, and lack of support/training. While these barriers existed, it was noted that these young adults already used strategies to overcome these barriers. These barriers and strategies are addressed within the following paragraphs.

Skill Deficits. The most frequently cited barrier to these young adults using SM was that of skill deficits. The deficits reported as barriers were that of difficulties with reading (Ågren, et al., 2018; Caton & Chapman, 2016; Shpigelman, 2017; Ramsten, et al., 2018), writing (Ågren, et

al., 2018), spelling (Ågren et al., 2018; Ramsten, et al., 2018), communication (Canton & Chapman, 2016; Merrells, et al., 2017), technology skills (Sorbring, et al., 2017), social skills (Shpigelman, 2017), language use (Kydland, et al., 2012), memory (Sorbring, et al., 2017), and using usernames and passwords (Ågren, et al., 2018). Another skill deficit cited as a barrier was that of understanding proper netiquette (Caton & Chapman, 2016; Löfgren-Mårtenson, et al, 2015; Sorbring, et al., 2017), which refers to the social codes, conventions, and proper behavior used in the digital world (Sorbring, et al., 2017).

Lack of Support and Training. The lack of SM support and training made available to young adults with ID was identified as the second most frequently mentioned barrier to SM use for these young adults (Chadwick, et al., 2013; Ramsten, et al., 2018; Sorbring, et al., 2017). It was found that some young adults with ID were either denied access to SM or had their use controlled by caretakers, support staff, or parents **(**Darragh, et al., 2017; Lofgren-Martenson, et al., 2018). Also noted was the lack of policy and governmental support pertaining to these young adults using SM (Chadwick, et al., 2013), societal attitudes towards individuals with ID, societal exclusion **(**Chadwick, et al., 2013; Sorbring, et al., 2017), and safety concerns held by parents, caretakers, educators, and support staff (Caton & Chapman, 2016; Chiner, et al., 2017; Darragh, et al., 2017; Merrells, et al., 2017). Molin, Sorbring, and Löfgren-Mårtenson (2015) expressed that the "old fashioned and anti-Facebook/Internet-approach (p. 31)" of educators has resulted in an absence of SM support and education made available for young adults with ID.

Technical. The technical aspects of SM were cited as the third most commonly mentioned barrier to the use of SM for young adults with ID. It was noted that many SM platforms have complex designs (Davis, et al., 2015; Shpigelman, 2017) with too much on a page (Davis, et al., 2015). Additionally, the frequency of applications and operating systems

updating to new versions with different appearances was identified as a barrier for these young adults (Ågren, et al., 2018; Sorbring, et al., 2017).

Accessibility. The accessibility of SM platforms was identified as the last barrier to the SM use of young adults with ID. It was found that the lack of access to needed equipment, assistive technology, and digital devices resulted in inaccessibility for these young adults (Merrells, et al., 2017; Sorbring, et al., 2017). The sensory and motor ability of young adults with ID was also said to limit accessibility for these young adults (Sorbring, et al., 2017).

Overcoming Barriers. Ågren, et al. (2018) found that young adults with ID utilized strategies to overcome the barriers that limited their SM use. Among the strategies used were that of asking for support from others; using correctly spelled handwritten notes written by others; utilizing suggestions that show in prediction/autocorrect when typing; and/or enabling voice commands and dictation. It was also found that young adults who had an ID and more severe reading difficulties chose to use videos and pictures to help with their SM use. Lastly, Löfgren-Mårtenson, et al. (2018) found that young adults with ID frequently asked their support staff for help when using SM.

Support and Education

Eight studies discussed the need for further SM support and training to be given. This support was said to be needed for not only young adults with ID, but also for their caretakers and direct support staff. This need is discussed within the following paragraphs.

Support for Young Adults with ID. Researchers, parents of young adults with ID, and young adults with ID have all discussed the need for there to be more SM education and support. Molin, et al., (2017) found that young adults with ID had a desire for adults to increase their involvement and responsibility in their internet and SM use. Also noted was that these young

adults felt they had little need for help with the technical skills needed to use SM. Instead, they expressed a need for emotional support. When it came discussing what occurred online, young adults with ID reported having difficulty talking to their parents about cyberbullying, due to the feeling that discussing it would make matters worse. It was also reported that discussing sexuality and relationships was much easier for these young adults. Ramsten, et al. (2018) and Shpigelman (2017) both found that some young adults with ID felt they had no one to go to for ongoing SM support. However, parents stated they were the everyday support for their young adult's emotional and technical skills (Sorbring, et al., 2017). While parents believed they could provide SM support through discussions and being present on SM, they would like schools to provide instruction and assignments pertaining to SM use. They believed this would increase their young adult's curiosity and interest in SM. Additionally, parents expressed a preference for cyber safety information to come from a third party (Raghavendra, et al., 2018). Lastly, Lofgren-Martenson, et al, (2018) stated a need for these young adults to receive SM support from their support staff. These researchers also discussed the importance of forming SM support for these young adults in order to "empower them to participate on the internet as their lack of awareness of the online world commonly functions as a reason for hindering people with disabilities from being digitally included" (Molin, et al., 2017, p. 658).

Support for Caretakers and Support Staff. Several studies found that support staff and caretakers had a need for support, educational strategies, and training that pertained to handling issues that arise when a young adult with uses SM (Chiner, et al., 2017; Löfgren-Mårtenson, et al., 2018; Shpigelman, 2017). Löfgren-Mårtenson, et al., (2018) noted the lack of strategies, knowledge, and policies pertaining to how support staff should handle problems that arise when young adults with ID use SM. Additionally, several support staff members expressed a need for

specialized training that would enable them to help these young adults use SM (Shpigelman, 2017). Lastly, Chiner, et al. (2017) found that almost half of 44 surveyed caretakers felt unprepared when it came to solving problems that occurred when young adults with ID used SM. This resulted in these researchers expressing the importance of providing caretakers with educational strategies for handling online risks to "strengthen their ability to prevent and identify problems that may occur on the internet, as well as equip them with strategies for early intervention" (Chiner, et al., 2017, p. 196).

SM Interventions

Four of the 25 articles focused on providing young adults with ID with alternative interfaces, assistive technology/alternative equipment, and direct instruction interventions that would enable them to participate in SM platforms. These interventions are described in detail within the following paragraphs.

In 2015, Raghavendra, et al. (2015) conducted a study on using SM to enhance the social participation of young adults who had communication disabilities and lived in rural Australia. Nine participants, between the ages of 10 and 21, were chosen to participate in this study. Of these nine participants, five had a diagnosis of ID. The intervention program consisted of providing any equipment, software, support, and training needed to address the participant's distinct communication problem areas and goals. Software used to support reading and writing consisted of Texthelp (Read & Write), ireadwrite, WordQ, and SpeakQ. Strategies and support given to participants ranged from providing word banks, abbreviated expansions for frequently needed word or phrases, visual prompts for completing tasks, templates to guide the writing of messages, and hints to remember accounts and passwords. The intervention resulted in the majority of participants achieving above their communication goals. Additionally, all participants

increased their amount of independent SM use. This study provided evidence that SM is beneficial for increasing the total communication done by young adults with ID and the meaningfulness of communication.

In 2018, Raghavendra, et al., conducted a similar intervention with a focus on developing the SM skills of young adults who had a disability and lived in rural Australia. Of the nine participants, between the ages of 11 and 17, four had a diagnosis of ID. The intervention consisted of individualized home-based trainings. These trainings consisted of face-to-face support for the hardware, software, and devices that were provided to aid in the participant's online communication. Provided support depended primarily on the participant's identified communication problem areas. Teaching strategies used when giving support included prompting, task analysis, visual aids, scaffolding, modeling, and opportunities to practice skills. This intervention resulted in the majority of participants achieving above their SM communication goals. All participants increased the number of communication partners they had on SM. It was also found that assistive technology helped support participant reading and writing and allowed participants to be more independent with their use of SM. Improved word recognition was also found to be a result of the intervention. More frequent SM use was cited as the reason for this. Lastly, all participants indicated that the intervention resulted in more feelings of satisfaction when using SM. Results of this study provided evidence that young adults with ID can independently use SM and increase their communication skills when provided with support and training.

Other SM interventions focused on designing interfaces that enabled young adults with ID to use SM. One of these interfaces was created and tested in 2012 by Keskinen, et al. This interface was called SymbolChat and focused on supporting online multimodal communication

through picture-based instant messaging. SymbolChat was designed to be customized based on an individual's needs. Nine participants, who were between the ages of 14 and 37 and diagnosed with ID, were chosen to test SymbolChat. It was found that SymbolChat increased participant communication speed and improved communication. Participants stated that SymbolChat was fun to use because they could talk to others. However, some participants did identify SymbolChat as hard to use, due to the symbols being unknown to them or hard to find. The second interface, Endeavor Connect, was created to support the Facebook use of individuals with ID (Davies, et al., 2015). Endeavor Connect allowed for text-to-speech and playback features to be used when posting a comment or status on Facebook. The interface was also designed to have less on the page and support all functions available on Facebook (posting videos, pictures, comments, etc.). After Endeavor Connect was created, it was tested with 12 participants who were between the ages of 20 and 45 and diagnosed with ID. Eleven of the participants completed five Facebook tasks with three or fewer prompts or errors per task. It was noted that only four of the participants were able to do these tasks on mainstream Facebook. Researcher observations indicated that the reading and writing skills required to use Facebook, as well as Facebook's complexity and screen clutter, made mainstream Facebook difficult to use for study participants. It was also noted that when using mainstream Facebook, participants would often click on incorrect screen elements or stop using the system and ask for help on how to proceed. The amount of information shown on Facebook required multiple verbal and gestural prompts for participants to complete a single task. Task analysis prompts had to be utilized by the researchers when guiding participants through the use of mainstream Facebook. While participants indicated that Endeavor Connect was easier to use, they did make common errors. Both the SymbolChat and Endeavor Connect interventions indicate that alternative interfaces can be designed to

support the SM use of young adults with ID. However, there is still more that needs to be done when designing these interfaces to allow for optimal SM use success and independence.

Conclusion

This literature review has revealed that SM use can be beneficial to young adults with ID, however it also can be dangerous. The dangers these young adults may face when using SM tend to heavily weigh decisions that prohibit, or limit, SM use for these young adults. Through providing education and support in the area of SM safety to young adults with ID, SM dangers can be alleviated. Unfortunately, this literature review has revealed that instructional strategies for teaching SM safety skills to young adults with ID do not exist. In fact, the lack of overall SM education, support, and policy made available to these young adults has been identified as the largest barrier they face to using SM. Through conducting an internet search, the researcher has located various curriculums, instructional strategies, and parental guides that have been created for educators and parents to use when teaching non-disabled young adults SM safety skills. Yet, none exist for young adults with ID. This is evidence that researchers and practitioners in the fields of special education, SM, and technology must begin to work together to form the educational supports these young adults need to be able to safely use SM. As Molin, et al., (2015) have expressed, we are further excluding these young adults from society by not providing them the education and support they need to use SM.

Need for Further Research

Through analyzing the 25 studies that met inclusion criteria set for this literature review, a lack of SM education and instruction given to young adults with ID has been identified. Much research has been conducted to gain the perspectives parents, caretakers, support staff, and educators of young adults with ID; members of the general population who do not have ID; and

young adults with ID have in regard to young adults with ID using SM platforms. In fact, the existing literature is dominated by research done to gain this information. Additionally, it was noted that previously conducted single subject studies did not use sound methods. As can be concluded from this literature review, there exists a critical need for research to be conducted in the area of SM education for young adults with ID. The future research done in this area must focus on utilizing sound methods to not only measure intervention effectiveness, but also allow for replication to produce evidence-based practices for teaching SM skills to these young adults. Lastly, the existing literature indicated that educational interventions need to emphasize on providing young adults with ID with support in combating SM risks, coping with emotions that may occur when using SM, cyber safety, netiquette, and the consequences that may occur as a result of actions used in online interactions.

Summary

This chapter gave an overview of the problem that will be addressed within this dissertation, discussed the theoretical framework used to design the methods of both proposed studies, and provided the results of a systematic literature review pertaining to the use of SM by young adults with ID. As can be concluded from this literature review, SM use can be beneficial to these young adults, however the risk of being a victim or perpetrator to online dangers (i.e., cyberbullying, predators, scams, hacking) does exist. While some literature has indicated that some young adults with ID use strategies to combat online dangers, no formal instructional interventions have been formed to address these dangers. Additionally, no research has focused on identifying the current SM use of young adults with ID who live in the United States; examining the knowledge these young adults have pertaining to combating online dangers; and

formulating possible instructional strategies to use when instructing SM safety to these young adults. These findings resulted in the formation of the following purpose for this dissertation.

Purpose

The purpose of this dissertation was to (a) identify the need for SM safety instruction geared specifically towards young adults with ID and (b) examine the effectiveness of a possible instructional strategy that could be used to teach these young adults SM safety skills. A survey research design was used in study 1 to determine the need for these young adults to receive SM safety instruction. In study 2, a single-subject research design was implemented to examine the effectiveness of using a visual checklist and corrective feedback to teach the skill of electronic message safety level identification.

Study 1. The purpose of this study was to identify the need for SM safety instruction for young adults with ID who live in the United States. Specific research questions addressed by this study included:

1. What knowledge do young adults with ID have in regard to combating SM safety risks?
    a. What is the relationship between learning SM from school, friends, or family and knowledge of SM risks?
2. What perceptions do young adults with ID have in regard to using SM?
3. What is the current SM use of young adults with ID?
4. Do young adults with ID desire to use, or increase their use of, SM?

Study 2. The purpose of this study was to examine the effectiveness of using a visual checklist and corrective feedback to instruct the skill of identifying the safety level of electronic

messages to young adults with ID. The specific research questions addressed by this study included:

1. What is the effectiveness of using a visual checklist and corrective feedback to increase accurate identification of the safety level of electronic messages for young adults with ID?
2. What is the social validity of using a visual checklist to support online safety for young adults with ID?

Chapter 2

Examining the Need for Social Media Safety Instruction for Young Adults with Intellectual Disability

Prior to the formation of SM safety instructional strategies for young adults with ID, it is important to identify the need for these strategies. Several questions need to be answered in order to identify this need. First, it is important to know if young adults with ID currently use, or desire to use, SM. Second, the perceptions these young adults have pertaining to SM use must be identified. Lastly, the knowledge these young adults have for combating SM risks must be investigated. If these young adults have no desire to use SM, perceive SM as hard to use or unbeneficial, and/or already have knowledge on how to combat SM risks, it could be determined that SM safety instructional strategies are not needed for this population. Therefore, it is critical to examine the answers to these questions prior to the formation of possible instructional strategies.

A survey research design is used to assess the knowledge, attitudes, and beliefs of groups of individuals (Colton & Covert, 2007). Due to this, it is being used to gain the information needed to determine the need for SM safety instruction. Other reasons a survey research design was utilized included that of surveys allowing for access to a wide range of participants, quicker method of data collection, and ability to adapt questionnaires in order to provide access to a wide range of ability levels. (Mathiyazhagan & Nandan, 2010). A survey design also allows for questionnaires to utilize response choices that contain pictorial images with words, simplified questions with limited response choices, enlarged text, and the increase of white space on a page. As the participants in this study are young adults with ID, these adaptations are essential in allowing these young adults independence when completing the survey.

Surveys that analyze the SM use of the general population are prolific. However, only six survey studies have been conducted to examine the SM use of young adults with intellectual disability (Chadwick, Quinn, & Fullwood, 2016; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Jenaro, et al., 2018; Shpigelman & Gill, 2014; Shpigelman & Gill, 2014). Furthermore, only four of these six studies included young adults with ID as survey participants (Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Jenaro, et al., 2018; Shpigelman & Gill, 2014; Shpigelman & Gill, 2014). The six survey studies focused on identifying the actual use of SM by young adults with ID (Jenaro, et al., 2018; Shpigelman & Gill, 2014; Shpigelman & Gill, 2014); perceptions of the risks and benefits young adults with ID could experience when using SM (Chadwick, Quinn, & Fullwood, 2016; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017); experienced SM risks (Chiner, Gómez-Puerta, & Cardona-Moltó, 2017); and perception of the safety level of SM (Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017). No survey has been conducted to examine the knowledge these young adults have regarding combating SM risks; their perceptions pertaining to SM ’s usefulness and ease of use; or their desire to use SM. Additionally, survey protocols that have been used with these young adults have not been published. The adaptions or supports used to help the young adults complete the survey also were not mentioned. The purpose of this survey was to create an accessible survey (i.e., pictorial responses, enlarged text) that obtained information about SM use, SM use perspectives, knowledge of combating SM risks, and desire to use SM from young adults with ID.

Purpose

The purpose of this survey study was to identify the need for SM safety instructional strategies formed specifically for young adults with ID. In order to identify this need, the knowledge of combating SM risks, perceptions of SM, desire to use to SM, and use of SM of these young adults must be examined. Therefore, this survey study addressed the following research questions:

1. What knowledge do young adults with ID have in regard to combating SM safety risks?
    a. What is the relationship between learning SM from school, friends, or family and knowledge of SM risks?
2. What perceptions do young adults with ID have in regard to using SM?
3. What is the current SM use of young adults with ID?
4. Do young adults with ID desire to use, or increase their use of, SM?

Constructs

Five constructs were used to address research questions and aid in survey organization, development, and measurement. These constructs were that of knowledge of SM risks, perceived ease of use, perceived usefulness, current SM use, and desired use of SM. These constructs are operationally defined within the following paragraphs.

Knowledge of SM Risks. With there being much concern regarding to the safety of individuals with ID on SM platforms, it is essential to determine if this population is aware of dangers that may occur when they participate on SM platforms. The Global Kids Online report (2016), released by EU Kids Online, defined SM risks as “any online experience that may put

children at risk" (p. 6). This ranges from adding people they do not know, meeting people they met online in person, responding to threats, being bullied, exposure to sexual content, etc. The EU Kids Online organization continually conducts surveys within European countries, and the European Union as a whole, to examine youth awareness of internet dangers. This organization has published a toolkit for researchers which contains their SM risks and opportunities survey protocol and guidebook. Two surveys have been administered to young adults with ID and their caregivers using the SM risks portion of this toolkit (Chiner, et al., 2017; Chiner, et al., 2017). When creating survey items for this construct, items were taken from the EU Kids Online SM risk survey protocol and adapted with simplified language and pictorial response options to accommodate for respondents with ID.

Perceived Usefulness. Perceived usefulness (PU) was one of the two constructs being used to measure the perceptions young adults with ID have about using SM. PU was defined for this study using a modified version of the definition provided in the TAM framework (Davis, 1989). Within this framework, PU is defined as the degree to which one perceives a technological device to be useful. To use this concept for measuring perception of SM, PU was modified to include SM platforms instead of technological devices. Therefore, PU was defined for this survey as that of the degree to which one perceives a SM platform to be useful. Since the development of SM, PU has been used by researchers to measure how once perceives SM to be useful, as well as predict their intention to use and actual use of SM (Hossain & Silva, 2009; McGowan, et al., 2012; Kwon & Wen, 2010; Rauniar, et al., 2014; Sánchez, Cortijo, & Javed, 2014). However, no studies have been conducted to examine how young adults with ID perceive SM to be useful. Instead, studies have analyzed why these young adults use SM. Many of the given reasons have been listed as benefits these young adults may experience from using SM

(i.e., talking to friends when feeling lonely, learning new things, etc.). Due to this, the survey items related to this construct were taken from the main benefits found within the systematic literature review included in chapter 1 of this dissertation.

Perceived Ease of Use. The second construct used to measure SM perception was that of perceived ease of use. Perceived ease of use (PEU) was also defined for this study through the use of the definition Davis (1989) provided within the TAM framework. Davis defined this construct as the degree to which an individual perceives a technological device as easy to use. For the purpose of this study, PEU modified to include SM, instead of technological devices. Therefore, PEU was defined as the degree to which an individual perceives a social platform as easy to use. Similar to PU, studies have used PEU to measure an individual's perception of, as well as to predict and explain their intention to use and actual use of, SM (Hossain & Silva, 2009; McGowan, et al., 2012; Kwon & Wen, 2010; Rauniar, et al., 2014; Sánchez, Cortijo, & Javed, 2014). Again, no studies have used this construct to measure how a young adult with ID perceives SM. In order to limit the number of survey items, the survey created for this study contained one question which asked respondents to identify if a specific SM platform was easy or hard to use. This question was replicated for each of the SM platforms.

Current SM Use. To operationally define current SM use, it was important to have definitions of SM, current, and SM use. According to Bolten et al. (2013), SM is any online service through which users can create and share a variety of content. This includes everything from chatrooms to blogs and the major SM platforms (i.e., Facebook, Instagram, etc.). Numerous SM platforms exist. Therefore, the SM platforms this survey examined needed to be defined. A literature review of previously conducted SM use surveys aided in this determination. According to the Pew Research Center (2018), the most popular SM platforms used by the general

population in the United States during 2018 were that of YouTube, Facebook, Instagram, Twitter, and Snapchat. Additionally, there are three surveys that have explored the use of SM done specifically by young adults with ID (Jenaro et al., 2018; Shpigelman & Gill, 2014; Shpigelman & Gill, 2014). These surveys focused on Facebook, YouTube, Instagram, Twitter, Flickr, chatrooms, and other sites (i.e., Pinterest, online games with chatrooms, etc.). As it was important to limit the number of survey items, the researcher decided to focus this survey specifically on the most frequently used SM platforms where one must have an account to participate or consume information. Therefore, the platforms of Facebook, Instagram, Twitter, and Snapchat were the focus of this survey. SM use also had to be defined prior to the creation of this survey. According to Bolten, et al. (2013), SM use is any activity in which an individual is contributing, sharing, searching, and/or consuming content on SM platforms. Many surveys have been conducted with the general population to discover the amount in which individuals have performed these specific SM use activities. However, no survey has been conducted with young adults with ID to examine this. Instead, the three existing surveys defined "use" as spending time on a SM platform. As the main purpose of this survey is to identify if there is a need to instruct SM safety skills to young adults with ID, it is only important to know if they spend time on the platforms. Therefore, SM use is defined for this survey as spending time on SM platforms. Lastly, it is important to define the timeline for "current." The Pew Research Center (2018) uses the past week for determining an individual's current SM use. The three surveys conducted with young adults with ID did not define "current." Instead, they asked respondents if they had been on the SM platform never, once a month, two or three times a month, once a week, daily, two or three times a day, or all day long. In order to form survey questions that are not time consuming to answer, a shorter time span to reflect upon was used. As it may be difficult to reflect on one's

SM use over the past seven days, the timeline for current use was defined for this survey as the previous two days. In summary, current SM use was defined for this survey as the amount of time spent on Facebook, Twitter, Instagram, and Snapchat over the course of the past two days.

Desired Use of SM. Since the purpose of this survey was to determine if the need for SM safety instruction geared towards young adults with ID, it was important to identify if these individuals had a desire to use, or increase their use of, SM. The desired use of learning SM construct was defined for this survey as the feeling of wanting to learn how to use SM. This construct has been analyzed through a qualitive interview of 27 high school students with ID. In this interview study, Molin, Sorbring, & Löfgren-Mårtenson (2017) found that these young adults had a desire to use SM. Stated within the interviews were comments that indicated these young adults "wanted to use the internet like everyone else, or so to say, participate like others" (Morlin, Sorbring, & Löfgren-Mårtenson, 2017, p. 653). Additionally, the young adults stated that if one did not use the internet, they would miss out on vital life experiences. This is some evidence that this population has a desire to use SM. While this research study has been published, the interview protocol that was used is not. Therefore, survey items formed for this construct will be singular questions that will ask if the young adult (a) wants to use the specific platform or (b) wants to use the specific platform more than they already do.

Participants

Inclusion criteria was set to ensure survey respondents were members of the specific population of young adults with ID. The following criteria was used to qualify for survey participation: (a) live in the United States; (b) between the ages of 13 and 24; and (c) receive special education or agency services under the category of ID. Prior to survey completion, respondents who were over the age of 18 and their own legal guardian, parent(s)/guardian(s), or

legally authorized representatives (LARs) were asked to confirm the age and disability of the respondent through answering screening questions. If an individual's responses to the screening questions did not meet the inclusion criteria, the survey was terminated.

Participant Characteristics. A total of 141 respondents were included within survey analyses. Descriptive statistics pertaining to respondent characteristics were examined during data analysis. Due to the anonymity of the survey, only the characteristics of gender and age were collected. These statistics showed that an equal number of male (n = 68) and female (n = 68) respondents. However, five respondents preferred not to provide their gender and eight respondents skipped the gender survey item. Respondents varied in age from 13 to 24, with a minimum of four respondents from each age. The age with the most respondents was 19 (n = 31). The age with the least number of respondents was 15 (n = 4). Refer to Table 1 or a complete listing of respondent characteristics. Lastly, the location of respondents was collected through the T-shirt sign up form. This data showed that respondents were from 29 states and the District of Columbia, with at least one respondent being from each region of the United States. The states/region with the most respondents were Florida (n = 24), District of Columbia (n = 24), Kansas (n = 11), and North Dakota (n = 10). It is important to note that not all respondents signed up for the free T-shirt incentive. Therefore, this data does not reflect the entirety of respondents. For a map of respondent locations, refer to Figure 2.

Table 1: *Respondent Characteristics*

Characteristic	*N*	*%*	*M*	*SD*
Gender	141	94.6	1.55	0.57
Females	68	45.6		
Males	68	45.6		
Prefer Not to Answer	5	3.4		
Age	141	94.6	7.33	3.04
13	11	7.4		
14	5	3.4		
15	4	2.7		
16	5	3.4		
17	5	3.4		
18	9	6.0		
19	31	20.8		
20	23	15.4		
21	15	10.1		
22	11	7.4		
23	9	6.0		
24	13	8.7		

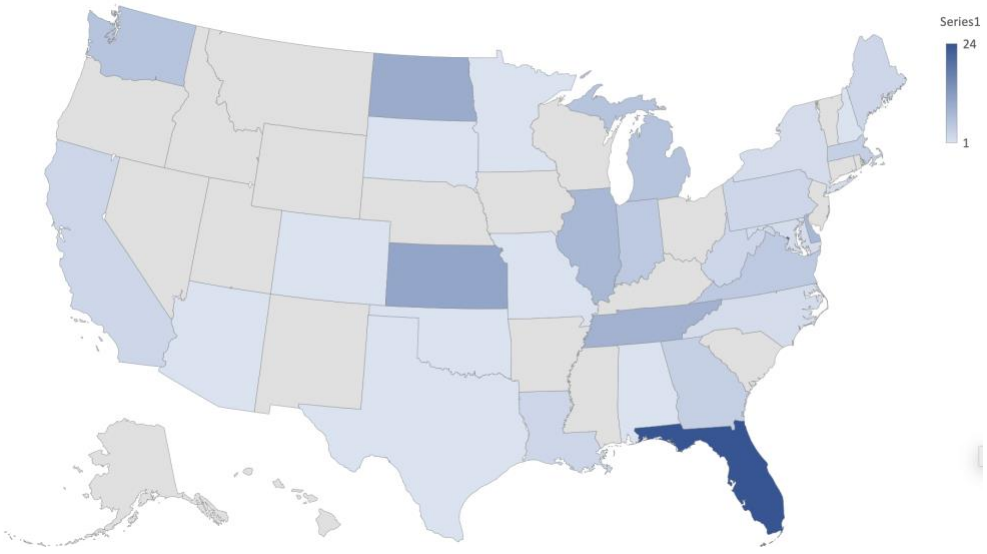


Figure 2: *Location of Respondents*

Sampling

Purposive snowball sampling was used for this survey. Snowball sampling occurs when respondents or gatekeepers generate additional responses through referrals (Fricker, 2008). According to Fricker (2008), snowball sampling is ideal to use when desired participants are difficult to find or identify. Since this survey's inclusion criteria focused on a low incidence population (young adults with ID) snowball sampling was selected as the sampling method for this study. One limitation of snowball sampling is the inability to calculate response rate, as it is not possible to determine the number of individuals in which recruitment information was shared. Therefore, the response rate of this survey could not be calculated. An additional limitation of using snowball sampling for this study related to social desirability bias. Due to this sampling method, it was impossible to determine if a respondent completed the survey by themselves, had someone present while completing the survey, and/or had someone else complete the survey for them. Having another person present during survey completion could result in the respondent responding with options that seemed more favorable to those present.

Prior to recruitment efforts, it was important to determine the minimum number of respondents needed. Therefore, an a priori power analysis was conducted. Results of this power analysis indicated that a minimum of 88 respondents were needed in order to achieve medium statistical power (0.8; Cohen, 1988) for the specific analyses being used in this study. Therefore, 88 was set as the minimum number of respondents for this survey. The following paragraph outlines the specific recruitment strategies used to reach this minimum.

Recruitment Strategy. To ensure that respondents met inclusion criteria set for this study, gatekeepers were used for recruitment. A recruitment email (see Appendix C) was sent to individuals who personally knew young adults with ID and/or provided education or agency

services to these young adults. This recruitment email contained study information, specific inclusion criteria set for this study, an information graphic (see Appendix B), an email consent form to send to parents/guardians/LARs, a copy of the electronic consent form for parents/guardians/LARs, and steps to take should the individual chose to be a gatekeeper for this study. Recruitment emails to organizations/agencies also contained a SM post that could be used (see Appendix E). As reminder emails have been shown to improve response rates (Van Mol, 2017), reminder recruitment emails were sent to gatekeepers four to six weeks after initial contact. To recruit gatekeepers, the incentive of a Tennessee T-shirt, designed by a student enrolled in a PSE program for young adults with intellectual and/or developmental disabilities, was used. All gatekeepers were given this shirt for their assistance. This incentive was also used for respondents. To allow for anonymous responses, respondents were asked to input their mailing address and T-shirt size on a separate form, which was not linked to their survey responses, by clicking on a link presented upon survey completion or termination. Respondents were also given the opportunity to use their teacher's name and mailing address should they not desire to use their own personal mailing address and name.

Among the agencies/organizations in which recruitment gatekeepers participated were: the National Arc; National Technical Assistance Center on Transition; Division of Autism and Developmental Disabilities; post-secondary institutions included on Think College's college search website; National Council of Developmental Disabilities; DC (District of Columbia) Rehabilitation Services Administration; Arts for All; Independence Incorporated; Disability Rights Tennessee; THRIVE (To Have Resources Independence Vocation and Education) Center; National Parent Center on Transition and Employment; Down Syndrome Affiliates in Action; and Transition Services Liaison Project; state/regional chapters of Arc; school districts;

universities; special education units/cooperatives; and state Councils for Developmental Disabilities. Gatekeepers participated in recruitment by posting the SM recruitment post to the SM platforms of Facebook, Instagram, and Twitter; sending recruitment emails out on listservs; including study information on e-newsletters, printed newsletters, and websites; and giving study information to parents/guardians/LARs of young adults with ID or young adults with ID who were their own legal guardian.

Modes of Administration

This survey was administered through a web-based survey via the QuestionPro survey platform. This mode of administration has many strengths, however the primary reason this mode was chosen related to the flexibility web-based surveys have in regard to accessibility. According to Evans and Mathur (2003), web-surveys allow for surveys to become accessible to individuals who have varying levels of ability. Items can be read aloud by screen readers, increased font sizes can be used, video models can be used to describe directions and model how to respond to questions, and images can be used as response choices. Additionally, the number of survey items seen on the screen at one time can be controlled. Web-based formats are also convenient, allow for easy data entry/analysis, use of various response scales, branching, and control of the order in which respondents complete the survey (Evans & Mathur, 2003). This mode of administration also allowed for survey responses to be kept anonymous. Identifiable information (besides age and gender) and IP addresses were not collected through the survey.

Procedures and Timeline

When conducting this survey, there was a series of procedures that were followed. First, the survey was created via QuestionPro software. Then, it was reviewed by researchers in the fields of special education, survey research, and SM in June 2019. Changes were made based on

feedback. Institutional Review Board (IRB) approval was sought and gained at the University of Tennessee, Knoxville (UTK) during July 2019. In August, the survey was pilot tested with five participants who met inclusion criteria. Changes were made to the survey based on feedback from these participants (changes made are discussed within the pilot testing section of this paper). In September, recruitment emails were sent to potential gatekeepers and posts were released on the SM platforms of Facebook, Instagram, Twitter, and Reddit. Reminders were sent to gatekeepers four to six weeks after initial contact was made. Recruitment procedures were implemented from September to the last week of January. Respondents completed the survey via a QuestionPro weblink throughout the time period of September to mid-February. The survey link was closed on February 14th, 2020. After the data collection period, data were input into SPSS and cleaned following the 12 steps of data cleaning (Morrow, 2017). Once cleaned, analyses were conducted to address the research questions. The specific analyses ran for each research question are given in the following data analysis section. Lastly, recruitment and survey participation T-shirts were ordered and mailed in February and March.

Data Collection

Item Creation

All survey items were created using a variety of procedures. First, a literature review was conducted to examine surveys that have been administered to measure the constructs used in this survey. Surveys administered with individuals with ID and individuals without ID were located. This literature review aided in the formation of the survey questions pertaining to the constructs of PEU, PU, and actual use of SM. Survey questions were formed through the use of found survey protocols, but were adapted so that they would be more accessible to individuals with ID. These adaptations are described in the following paragraph.

Accessibility Features. To allow young adults with ID the opportunity to independently complete the survey, several adaptations were used when forming the survey. First, survey items were written with simplified language. Complex and complicated words, in which meanings may not be known, were eliminated from survey items. Responses to survey items were limited to two or three options. All response options utilized text and pictorial images in which meanings were universal (e.g., green checkmark for yes, red checkmark for no, numerical number for number, etc.). Refer to Figure 3 for an example of response options. Each question of the survey contained a play button that could be clicked on to listen to the researcher reading the question (as seen in Figure 4). This play button allowed for the replaying of the question as many times as it was needed. Video modeling videos that utilized captions were also included when a new question format was presented. These videos contained the researcher giving directions on how to answer the question (e.g., "once the button next to the question is filled with blue, the question is answered. So, I will take my mouse and move it down to the blue submit button. Then, I will click on the submit button to get to the next question") and statements on how one would feel for each response option (e.g., "If I knew what to do when someone sent me a mean message, I would click on the button next to the yes option with the green checkmark. If I do not know what to do when someone sent me a mean message, I would click on the button next to the no option with the red checkmark"). Scripts used for the video directions are included with the survey protocol in Appendix F. Other adaptions used included enlarged/bolded text and the presentation of only one survey item on the screen at a time. Lastly, videos of the researcher explaining the purpose of the survey and informed consent were used. These videos used simplified language to describe what would be presented in the survey, how to access the T-shirt form, and the meaning of giving consent for participation.

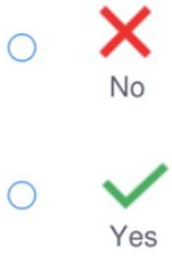


Figure 3: *Pictorial and Text Response Options*

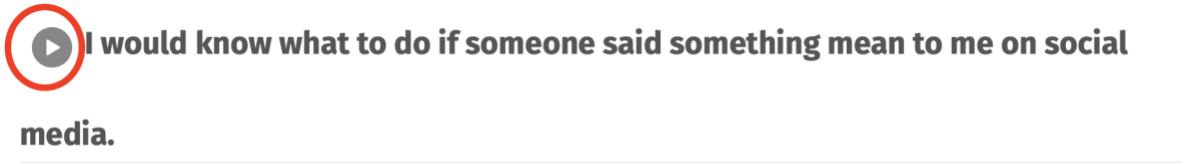


Figure 4: *Text-to-Speech Options*

Survey Items

This survey consisted of the following seven sections: knowledge of SM risks; PU; Facebook specific use, PEU, and desired use; Instagram specific use, PEU, and desired use; Twitter specific use, PEU, and desired use; and demographics. These sections organized the survey. Since the purpose of this survey was to identify the need for SM safety instruction, the knowledge of SM risks and PU sections were presented first. This ensured that if a respondent chose to terminate the survey prior to finishing the entire survey, the most pertinent information

was collected. SM platform specific use, PEU, and demographics were the final sections of the survey. Branching was used during the platform specific use sections. If a respondent indicated they did not use a specific platform, they were branched to answer the desired use and PEU questions. Respondents who indicated they used a specific platform were not branched. Instead, they were given a question to indicate their amount of use and another pertaining to their desire to use the platform more. The survey protocol and scripts for video directions can be seen in Appendices J and K.

The first section of the survey, knowledge of combating SM risks, consisted of 13 items. All 13 items started with the phrase, "I would know what to do if someone," ended with a SM risk (e.g., said something mean to me), and used the response choices and scoring information of No=0, Yes=1. Refer to Table 2 for items included in this section and Figure 5 for a sample item from this section. The second section of this survey, perceived usefulness (PU), contained 12 items that began with the phrase, "I think social media is good for," ended with a benefit of using SM (e.g., talking to others more), and used the responses options and scoring information of No = 0, Yes = 1. Table 3 includes the items included in the PU section and Figure 6 provides a sample item from this section. The platform specific sections of the survey consisted of 20 items, with five items per platform (Facebook, Instagram, Snapchat, and Twitter). The first item for each platform asked respondents to indicate if they used the platform (i.e., do you use Facebook) and used the response options and scoring information of No = 0, Yes = 1. If a respondent indicated that they used the platform, they were branched to a survey item pertaining to frequency of platform use within the past two days (i.e., in the past two days, how many times have you been on Facebook). Use frequency items used the response options and scoring information of Not at all = 0, Once = 1, and More than once = 2. After responding to this item,

the respondent was branched to an item that asked about their desire to increase their use of the platform (i.e., would you like to use Facebook more). The desire to increase platform use items used the response options and scoring information of No = 0, Yes = 1. If a respondent did not use a specific platform, they were branched to an item that asked about their desire to use the platform (i.e., would you like to use Facebook). These desire to use items used the response options and scoring information of No = 0, Yes = 1. The final section of the survey pertained to demographics and consisted of six items. The first demographic item asked respondents to indicate how old they were (i.e., how old are you) and used the following response options and scoring information: 13= 1; 14= 2; 15 = 3; 16 = 4; 17 = 5; 18 = 6; 19 = 7; 20 = 8; 21 = 9; 22 = 10; 23 = 11; 24= 12. The second item in the demographic section asked respondents to indicate their gender (i.e., what is your gender) and used the response options and scoring information of Male = 1, Female = 2, and Prefer not to answer = 0. The final demographic items asked about learning of SM (i.e., did you learn how to use social media from school; has a family member or guardian helped you learn to use social media; has a friend helped you learn to use social media; and would you like to learn more about using social media). These items used the response options and scoring information of No = 0, Yes = 1.

Table 2: *Knowledge of Combating SM Risks Survey Items*

1. I would know what to do if someone said something mean to me on social media.
2. I would know what to do if someone on social media told me to do something I didn't want to do.
3. I would know what to do if someone tried to sell me something on social media.
4. I would know what to do if someone on social media got my password.
5. I would know what to do if someone I don't know asked for pictures of me on social media.
6. I would know what to do if someone on social media sent messages as me.
7. I would know what to do if someone I don't know sent me a message on social media and
8. asked to meet me them in person.
9. I would know what to do if someone I don't know tried to talk to me on social media.
10. I would know what to do if someone I don't know added me as a friend on social media.
11. I would know what to do if someone got into my social media account without my
12. permission.
13. I would know what to do if someone on social media kept bothering me.
14. I would know what to do if someone on social media sent me something that made me uncomfortable.
13. I would know what to do if someone on social media asked for personal information.

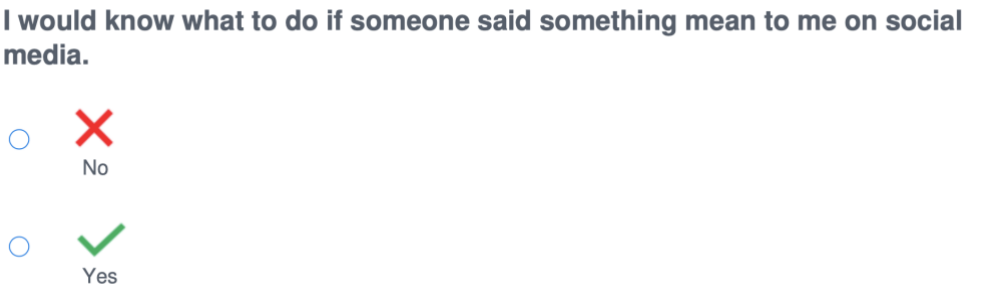


Figure 5: *Knowledge of Combating SM Risks Sample Survey Item*

Table 3: *PU Survey Items*

1. I think social media is good for telling others how I feel.
2. I think social media is good for showing others who I am.
3. I think social media is good for finding information.
4. I think social media is good for talking to friends and family.
5. I think social media is good for finding new friends.
6. I think social media is good for finding others like me.
7. I think social media is good for talking to others when I feel lonely.
8. I think social media is good for talking to others more.
9. I think social media is good for seeing what others are doing.
10. I think social media is good for getting support from others.
11. I think social media is good for learning new things.
12. I think social media is good for having fun.



Figure 6: *PU Sample Survey Item*

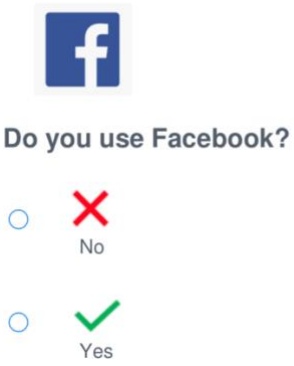


Figure 7: *Platform Specific Response Options*

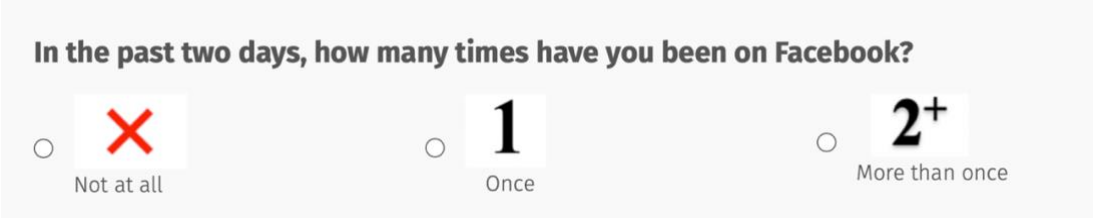


Figure 8: *Frequency of SM Platform Use Response Options*



Figure 9: *PEU Response Options*

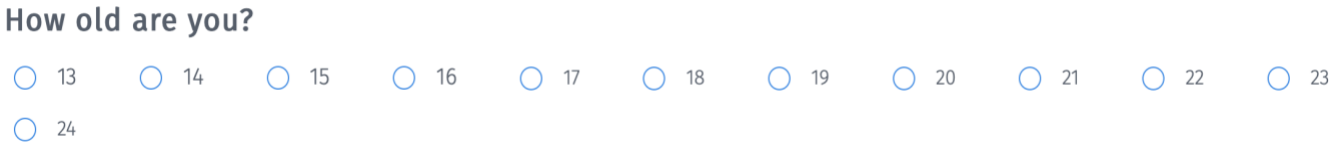


Figure 10: *Age Sample Item*

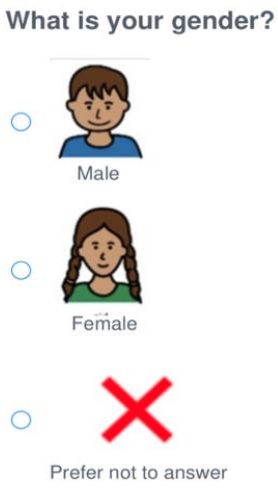


Figure 11: *Gender Sample Item*

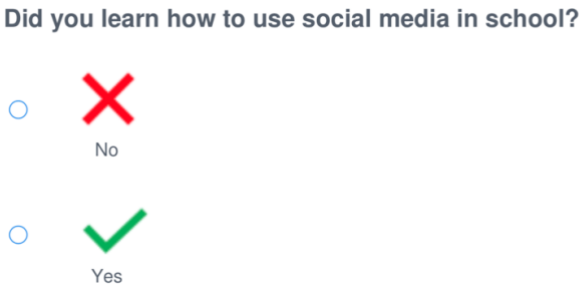


Figure 12: *Learning SM Sample Item*

Reliability/Validity

Content validity of survey items was assessed through the pretesting of items with respondents similar to the respondents that will participate in the survey and review by researchers in the field of survey research, special education, and SM. Changes were made to the survey based on feedback. Results of the pilot testing are discussed within the following

paragraphs. Changes made to the survey based on feedback from researchers included: changes of pictorial response images to pictures with universal meanings; elimination of YouTube survey items to shorten survey length; changes to survey organization to collect pertinent responses first; and the shortening of the SM use timeline in which a respondent has to reflect. Reliability was assessed through the calculation of an a priori power analysis. This was conducted to determine the minimum sample size needed to obtain reliable results. Results of this power analysis indicated that a minimum sample sized needed to have medium statistical power was 88.

Pilot Testing. In August, the survey was tested with five participants who met study inclusion criteria. Participants were administered the survey in a one-on-one session with the researcher. During this session, participants independently completed the survey while the researcher observed any usability issues. After participants completed the survey, the researcher asked for feedback on survey usability, length, and accessibility.

Pilot Testing Results. Researcher observations during pilot testing sessions indicated that only one participant required prompting or guidance to complete the survey. At the time of administration, the SM risk questions were in the form of a matrix. This format was unfamiliar to the participant and questions were asked. Feedback from this participant included the recommendations of having only one question on a page and elimination of the matrix format. These changes were made prior to pilot testing sessions with the remaining four participants. All participants reported liking the audio clips of the researcher reading survey items, picture responses, and video modeling directions. One participant reported liking that questions were easy. Another stated that audio clips and pictures made it easy to do the survey independently. All five participants reported satisfaction from being able to independently complete the survey. One participant did indicate that survey length should be shorter. However, the time duration for

survey completion ranged between 10 to 15 minutes for all participants. Due to no other participant giving feedback on the length of the survey, and the average time for completion being 10 to 15 minutes, changes to the length of the survey were not made.

Data Analysis

Data were cleaned using the 12 steps of data cleaning (Morrow, 2017). Missing data were examined and decisions for inclusion or exclusions were made for any respondent, question, or variable that had more than 75% of responses missing. The data cleaning process is described in more detail within the results section. Once the data were cleaned, analyses were ran. Due to the questions being nominal in nature, analysis was limited to descriptives, such as frequencies, means, and modes. Descriptives were ran for overall survey responses, as well as each demographic (gender, age, etc.). The specific analyses ran to address research questions are included in Table 4.

Table 4: *Planned Analyses to Address Research Questions*

Research Questions	Data Collection	Data Analysis
1. What knowledge do young adults with ID have in regard to combating SM safety risks?	SM risk knowledge construct survey items: #1-13	Descriptives: Frequencies, means, and modes for each of the 13 SM risk variables Frequencies for 13 SM risks by gender Point-biserial correlation between SM combating knowledge composite score and gender Frequencies for 13 risks by age Chi-square between SM combating knowledge composite score and age groups of PSE and high school
1.a. What is the relationship between learning SM from school, friends, or family and knowledge of SM risks?	SM safety knowledge construct survey items: #1-13 Learning SM demographic survey items: #48-50	Chi-Square between total knowledge of SM risks and learning SM from school Chi-Square between knowledge of SM risks and learning SM from family Chi-Square between knowledge of SM risks and learning SM from friends
2. What perceptions do young adults with ID have in regard to using SM?	PEU construct survey items: #14-25 PU construct survey items: #30, 35, 40, 45	Descriptives: Frequencies, means, and modes for ease of use and usefulness variables
3. What is the current SM use of young adults with ID?	Actual use construct survey items: #26, 27, 31, 32, 36, 37, 41, 42	Descriptives: Frequencies, means, and modes for actual use variables for each SM platform
4. Do young adults with ID desire to use, or increase their use of, SM?	Desired use construct survey items: #28, 29, 33, 34, 38, 39, 43, 44	Descriptives: Frequencies, means, and modes for desired use variables for each SM platform

Results

Prior to conducting analyses, data were cleaned according to the 12 steps of data cleaning (Morrow, 2017). First, initial frequencies were run and data were analyzed for coding errors. This resulted in the recoding of response options with an absolute zero (responses of no, not at all, and prefer not to answer) to the scoring code of 0 = No and 1= Yes (instead of the 1, 2 scoring code used on the QuestionPro software). Due to all response options being categorical and planned analyses being non-parametric, normality and outliers were not assessed. Lastly, missing data for respondents and variables were examined. Pairwise deletion was used for missing data. Respondents were removed from analyses if missing data existed for variables used within analyses. Respondents who were missing 100% of the responses within variables used for analyses were removed from the data set. This resulted in 77 respondents being removed and 141 being included within analyses. The total amount of missing data for individual variables varied from 0 to 8%. As no variable had a large amount of missing data, all variables were included in analyses. Within the following paragraphs, the results of analyses are discussed in the order of research questions. Information pertaining to respondent characteristics is also included.

Knowledge of Combating SM Safety Risks

Research Question 1: What knowledge do young adults with ID have in regard to combating SM safety risks?

For the first research question, frequencies were analyzed to examine knowledge of combating SM risks. On the SM safety risk portion of the survey, respondents were asked to respond to the statement, “I would know what to do if,” followed by one of the 13 SM risks (e.g., someone said something mean to me on social media). Possible responses were yes or no. A response of “no” indicated that a respondent did not knowing combating strategies for a specific

SM safety risk (e.g., a response of "no" to "I would know what to do if someone said something mean to me on social media" indicated a respondent did not know how to address the situation of someone saying something mean to them on SM). A response of "yes" indicated that a respondent knew what to do if the SM risk did occur. Findings indicated three SM risk areas in which 50% or more of respondents indicated not knowing combating strategies. These SM risks were that of "someone on social media got into my account without my permission" (n = 81, 54.4%), "someone on social media got my password" (n = 75, 50.3%), and (c) "someone on social media sent messages as me" (n = 75, 50.3%). The majority of respondents, ranging from 55.7% to 65.1% of total respondents, reported knowing strategies to combat 10 of the SM risks. The SM risks in which respondents most frequently knew combating strategies included: "someone on social media said something mean to me" (n = 97, 65.1%); "someone on social media asked for personal information" (n = 95, 63.8%); "someone I don't know asked for pictures of me on social media" (n = 94; 63.1%); and "someone on social media told me to do something I didn't want to do" (n = 93, 62.4%). The SM risks in which the lowest majority of respondents knew combating strategies included: "someone I don't know asked to meet me in person on social media" (n = 83, 55.7%); "someone tried to sell me something on social media" (n = 87; 58.4%); "someone on social media sent me something that made me uncomfortable" (n = 88; 59.1); and "someone on social media kept bothering me" (n = 89; 59.1%). For a complete listing of SM risk combating knowledge response frequencies, refer to Table 5.

Gender. To further examine the SM risk knowledge of respondents, frequencies for the gender groups of male and female were analyzed. Additionally, a point-biserial correlation was conducted to examine the relationship between gender and combating SM risks knowledge composite score. The combating knowledge composite score (M = 0.59*; SD* = 0.35*)* was created

through the calculation of the mean for all "yes" responses on the 13 SM safety risk survey items. The point-biserial correlation demonstrated a statistically significant relationship between gender and the combating SM risks knowledge composite score, r_{pb} (1, n = 141) = 0.17, p = 0.04. For each of the 13 SM risks, males reported unknown combating strategies more frequently than females. The majority of males (ranging from 63.2% to 51.5% of total male respondents) indicated not knowing how to combat the following SM risks: "someone on social media got into my account without my permission" (n = 43, 63.2%), "someone on social media sent messages as me" (n = 40, 58.8%), "someone on social media got my password" (n = 36, 52.9%), and "someone I don't know added me as a friend on social media" (n = 35, 51.5%). The SM risks in which males most reported having combating knowledge included: "someone said something mean to me on social media" (n = 30, 44.1%), "someone I don't know tried to talk to me on social media" a stranger talked to me" (n = 30, 44.1%), and "someone on social media sent me something that made me uncomfortable" (n = 30, 44.1%). The SM risks in which females most frequently reported unknown combating strategies included: "someone on social media got my password" (n = 32, 47.1%), "someone got into my social media account without my permission" (n = 29, 42.6%), "someone I don't know sent me a message on social media and asked me to meet them in person" (n = 25, 36.8%), "someone I don't know added me as a friend on social media" (n = 21, 30.9%), and "someone on social media sent me something that made me uncomfortable" (n = 21, 30.9%). For a complete listing of frequencies pertaining to unknown SM risk combating knowledge by gender, refer to Table 6.

Age. Frequencies of SM risk knowledge were also analyzed for age groups. The two groups of high school aged (13 to 18-years-old) and PSE aged (19 to 24-years-old) were used. A chi-square correlation was also conducted to analyze the relationship between these two groups

and the combating SM risks knowledge composite score. When compared with the PSE aged group (*n* = 39; 27.7%) the high school aged group (*n* = 102; 72.3%) more frequently reported not having knowledge of SM safety risk combating strategies, $x^2(1, n = 141) = .20, p = .02$. The majority of high school aged respondents (ranging from 64.1% to 59.0% of total high school aged respondents) reported not knowing how to address the following SM risks: "someone on social media sent messages as me" (*n* = 25, 64.1%), "someone got into my social media account without my permission" (*n* = 25, 64.1%), "someone I don't know sent me a message on social media and asked me to meet them in person" (*n* = 23, 59.0%), and "someone I don't know added me as a friend on social media" (*n* = 23, 59.0%). The SM risk areas in which the high school aged group most frequently reported knowing combating strategies included: "someone on social media said something mean to me" (*n* = 97, 65.1%), "someone on social media asked for personal information" (*n* = 95, 63.8%), and "someone on social media asked for pictures of me" (*n* = 95, 63.1%). The SM safety risks in which the PSE aged group most reported unknown combating strategies included: "someone got into my social media account without my permission" (*n* = 50, 49.0%), "someone on social media sent messages as me" (*n* = 47, 46.1%), and "someone on social media got my password" (*n* = 26, 45.1%). The SM safety risks in which the PSE aged group most frequently reported knowing combating strategies included: "someone on social media said something mean to me" (*n* = 73, 71.6%), "someone on social media told me to do something I didn't want to do" (*n* = 70, 68.6%), "someone on social media asked me for personal information" (*n* = 71, 69.6%), and "someone on social media asking for pictures of me" (*n* = 67, 65.7%). For a complete list of frequencies for unknown SM risk combating knowledge by age group, refer to Table 7.

Table 5: *Overall Knowledge of Combating SM Safety Risks*

	Yes		No	
SM Risk Combating Knowledge Area	*N*	*%*	*N*	*%*
Someone said something mean to me	97	65.1	52	34.9
Someone told me to do something I didn't want to do	93	62.4	51	34.2
Someone tried to sell me something	87	58.4	58	38.9
Someone got my password	73	49.0	75	50.3
Someone I don't know asked for pictures	94	63.1	51	34.2
Someone sent messages as me	74	49.7	75	50.3
Someone I don't know asked me to meet them in person	83	55.7	65	43.6
Someone I don't know tried to talk to me	91	61.1	55	36.9
Someone I don't know added me as a friend	86	57.7	62	41.6
Someone got into my account without my permission	67	45.0	81	54.4
Someone kept bothering me	89	59.7	59	39.6
Someone sent me something that made me uncomfortable	88	59.1	59	39.6
Someone asked for personal information	95	63.8	52	34.9

Table 6: *Unknown Combating Knowledge by Gender*

	Males		Females	
SM Risk Combating Knowledge Area	*N*	%	*N*	%
Someone said something mean to me	30	44.1	18	16.5
Someone told me to do something I didn't want to do	29	42.6	17	25.0
Someone tried to sell me something	32	47.1	21	30.9
Someone got my password	36	52.9	32	47.1
Someone I don't know asked for pictures	30	44.1	16	23.5
Someone sent messages as me	40	58.8	31	45.6
Someone I don't know asked me to meet them in person	33	48.5	25	36.8
Someone I don't know tried to talk to me	30	44.1	19	27.9
Someone I don't know added me as a friend	35	51.5	21	30.9
Someone got into my account without my permission	43	63.2	29	42.6
Someone kept bothering me	31	45.6	19	27.9
Someone sent me something that made me uncomfortable	30	44.1	21	30.9
Someone asked for personal information	28	41.2	19	27.9

Table 7: *Unknown Combating Knowledge by Age*

	13-18		19-24	
SM Risk Combating Knowledge Area	*N*	*%*	*N*	*%*
Someone said something mean to me	19	48.7	29	28.4
Someone told me to do something I didn't want to do	19	48.7	29	28.4
Someone tried to sell me something	16	41.0	38	37.3
Someone got my password	25	64.1	46	45.1
Someone I don't know asked for pictures	17	43.6	31	30.4
Someone sent messages as me	25	64.1	47	46.1
Someone I don't know asked me to meet them in person	23	59.0	38	37.3
Someone I don't know tried to talk to me	19	48.7	32	31.4
Someone I don't know added me as a friend	23	59.0	36	35.3
Someone got into my account without my permission	25	64.1	50	49.0
Someone kept bothering me	18	46.2	36	35.5
Someone sent me something that made me uncomfortable	18	46.2	37	36.3
Someone asked for personal information	18	46.2	31	30.4

Learning SM

Research Question 1.a: What is the relationship between learning SM from school, friends, or family and knowledge of SM risks?

Prior to analyzing the relationship between learning SM from family, friends, and school and knowledge of SM risks for research question 1.a, frequencies of the learning SM variables were examined. For the learning SM survey items, respondents were asked to respond to the following statements: (a) "has a family member or guardian helped you learn to use social media;" (b) "has a friend helped you learn to use social media;" (c) "did you learn to use social media in school;" and (d) "would you like to learn more about using social media?" The majority of respondents reported learning SM from family (n = 78; 52.8%). Sixty-seven respondents (45.0%) learned SM from friends. School was the least reported for learning SM (n = 44; 29.5%). Lastly, the majority of respondents reported having desire to learn more about using SM (n = 83; 55.7%). For a listing of learning SM frequencies, refer to Table 8.

In order to determine the relationship between learning SM from family, friends, and/or school and knowledge of combating SM risks, chi-squares were conducted between the SM risk combating knowledge composite score and (a) learning SM from family, $x^2(1, n = 141) = -.04$, $p = .60$; (b) learning SM from friends, $x^2(1, n = 141) = .22$, $p = .01$; and (c) learning SM from school, $x^2(1, n = 141) = .22$, $p = .008$. These chi-squares indicated that significant relationships existed between learning SM use from friends and school. However, there was no significant relationship for learning SM use from family. Chi-squares were also conducted with each SM risk combating knowledge areas and learning SM from (a) school, (b) friends, and (c) family. Six SM risk combating knowledge areas were significantly related to learning SM from friends. These six areas included: "someone said something mean to me on social media," x_2 (1, n =141)

= .28, p = .001; "someone on social media told me to do something I didn't want to do," x^2 (1, n =141) = .26, p = .003; "someone on social media got my password," x^2 (1, n =141) = .25, p = .004; "someone I don't know added me as a friend on social media," x^2 (1, n =141) = .17, p = .05; "someone got into my social media account without my permission," x^2 (1, n =141) = .19, p = .03; and "someone sent me something on social media that made me uncomfortable," x^2 (1, n =141) = .17, p = .04. Additionally, six SM risk combating knowledge areas were significantly related to learning SM from school. These six SM risks included: "someone on social media got my password," x^2 (1, n =141) = .22, p = .009; "someone got into my social media account without my permission," x^2 (1, n =141) = .19, p = .02; "someone on social media kept bothering me," x^2 (1, n =141) = .18, p = .04; someone sent me something that made me uncomfortable, x^2 (1) = 10.02, p = .04; "someone on social media asked for pictures of me," x^2 (1, n =141) = .17, p = .05; and "someone on social media asked me for personal information," x^2 (1, n =141) = .27, p = .001. Lastly, no SM risk combating knowledge area was significantly related to learning SM from family. To see chi-square results for all 13 SM risk combating knowledge areas, refer to Table 9.

Table 8: *Learning SM*

	Yes		No	
	N	%	N	%
Learned SM From				
Family	78	52.3	61	40.9
Friends	67	45.0	71	47.7
School	44	29.5	97	65.1
Desire to Learn More	83	55.7	53	35.6

Table 9: *SM Safety Risk Knowledge and Learning SM Relationships*

	Family		Friends		School	
SM Safety Risks	x^2	*p*	x^2	*p*	x^2	*p*
SM Risk Combating Knowledge Composite	-.04	.60	.22	.01*	.22	.008*
Someone said something mean to me	-.03	.70	.28	.001*	.13	.13
Someone told me to do something I didn't want to do	.01	.87	.26	.003*	.10	.24
Someone tried to sell me something	-.06	.52	.12	.15	.14	.09
Someone got my password	-.07	.44	.25	.004*	.22	.009*
Someone I don't know asked for pictures	-.14	.10	.13	.13	.17	.05*
Someone sent messages as me	-.02	.84	.07	.39	.08	.37
Someone I don't know asked me to meet them in person	-.02	.86	.06	.47	.16	.58
Someone I don't know tried to talk to me	-.05	.54	.06	.50	.11	.22
Someone I don't know added me as a friend	-.12	.21	.17	.05*	.13	.09
Someone got into my account without my permission	-.11	.21	.19	.03*	.19	.03*
Someone kept bothering me	.09	.30	.12	.15	.18	.04*
Someone sent me something that made me uncomfortable	.07	.41	.17	.04*	.20	.02*
Someone asked for personal information	-.002	.98	.14	.09	.27	.001*

Note *p<.05

Perceptions of Using SM

Research Question 2: What perceptions do young adults with ID have in regard to using SM?

When analyzing perceptions of SM use for research question two, frequencies of the PU and PEU variables were examined. On the PU survey items, respondents were asked to respond to the statement, "I think social media is good for," followed by one of the 12 benefits of SM use (e.g., "telling others how I feel"). A response of "yes" indicated that a respondent thought SM was beneficial for the benefit of SM use. A "no" response indicated that a respondent did not think SM use beneficial for the benefit of SM use. For PEU items, respondents were asked to respond to the statement, "I think *inserted name of specific SM platform here* (i.e., Facebook, Instagram, Twitter, and Snapchat) is," following by the response options of "hard to use" and "easy to use." The majority of respondents, ranging from 61.1% to 83.9% of total respondents, indicated perceiving SM to be useful for all 12 PU variables. The highest ranked PU variables included: "talking to friends and family" (n = 125, 83.9%); "having fun" (n = 113; 75.8%); "learning new things" (n = 110, 73.8%); "finding information" (n = 106, 71.1%); and "seeing what others are doing" (n = 101, 67.8%). A complete listing of response frequencies for each PU variable is included in Table 10. The PEU frequencies revealed platforms in which respondents reported as easy or hard to use. The majority of respondents, ranging from 49.7% to 57.0% of total respondents, indicated that Facebook (n = 86, 57.7%), Instagram (n = 76, 51.0%), and Snapchat (n =74, 49.7%) were the easy to use. Ninety-one respondents (61.1%) reported Twitter as hard to use. Frequencies of PU variables for each SM platform can be seen in Table 11.

Table 10: *Perceived Usefulness*

	Yes		No	
SM Perceptions	*N*	%	*N*	%
Telling others how I feel	91	61.1	54	36.2
Showing who I am	93	62.4	53	35.6
Finding information	106	71.1	38	26.4
Talking to friends and family	125	83.9	21	14.1
Finding new friends	95	63.8	50	33.6
Finding others like me	97	65.1	49	32.9
Talking to others when I feel lonely	94	63.1	48	32.2
Talking to others more	91	61.1	55	36.9
Seeing what others are doing	101	67.8	41	27.5
Getting support from others	96	64.4	45	30.2
Learning new things	110	73.8	31	20.8
Having fun	113	75.8	25	16.8

Table 11: *Perceived Ease of Use*

	Easy to Use		Hard to Use	
SM Platform	*N*	%	*N*	%
Facebook	86	57.7	51	34.2
Instagram	76	51.0	59	39.6
Snapchat	74	49.7	62	41.6
Twitter	48	32.2	91	61.1

Current SM Use

Research Question 3: What is the current SM use of young adults with ID?

Current SM use frequencies were analyzed to address research question three. First, specific SM platform use was examined. For these survey items, respondents were asked to respond to the following statement, "do you use *inserted name of specific SM platform here* (i.e., Facebook, Instagram, Twitter, and Snapchat)," followed by the response options of yes and no. A response of "yes" indicated that respondents did use the SM platform, while a response of "no" indicated that they did not use the SM platform. The majority of respondents (n = 81, 54.4%) reported using Facebook. Sixty-one (40.9%) respondents used Instagram and 52 (34.9%) used Snapchat. Twitter was the least used among respondents (n = 24, 16.1%). Respondent frequency

of SM platform use was also examined through frequencies. On these survey items, respondents were asked to respond to the statement, "in the past two days, how many times have you been on *inserted name of specific SM platform here* (i.e., Facebook, Instagram, Twitter, and Snapchat)," followed by the response options of "more than once," "once," and "not at all." The majority of respondents who used SM platforms, ranging from 35.6% to 9.4%, reported using specific platforms more than once within the past two days. Facebook frequency of use ranged from more than once (n = 53, 35.6%), once (n = 16, 10.7%), and not at all (n = 9, 6.0%). Instagram users reported using the platform within the past two days more than once (n = 40, 26.8%), once (n = 15, 10.1%), and not at all (n = 6, 4.0%). Frequency of use within the past two days among Snapchat users ranged from more than once (n = 35, 23.5%), once (n = 9, 6.0%), and not at all (n = 6, 4.0%). Lastly, Twitter users reported using the platform within the past two days more than once (n = 14, 94%), once (n = 5, 3.4%), and not at all (n = 5, 3.4%). For a complete listing of respondent specific SM platform use, refer to Table 12. Table 13 provides information pertaining to frequency of SM use within the past two days.

Table 12: *SM Platform Use*

	Yes		No	
SM Platform	*N*	*%*	*N*	*%*
Facebook	81	54.4	61	40.9
Instagram	61	40.9	80	53.7
Snapchat	52	34.9	89	59.7
Twitter	24	16.1	117	78.5

Table 13: *Frequency of SM Use in the Past Two Days*

	More than Once		Once		Not at all	
SM Platform	*N*	*%*	*N*	*%*	*N*	*%*
Facebook	53	35.6	16	10.7	9	6.0
Instagram	40	26.8	15	10.1	6	4.0
Snapchat	35	23.5	9	6.0	6	4.0
Twitter	14	9.4	5	3.4	5	3.4

Desire to Use SM

Research Question 4: Do young adults with ID desire to use, or increase their use of, SM?

For research question four, desire to use SM frequencies were analyzed for SM platform non-users and users. On these survey items, respondents who indicated that they use specific SM platforms were asked to respond the statement, "would you like to use *inserted name of specific SM platform here* (i.e., Facebook, Instagram, Twitter, and Snapchat) more," followed by the response options of yes and no. A response of "yes" indicated that a respondent wanted to use a SM platform more than they already do, whereas a response of "no" indicated that they did not want to use the platform more. Respondents reported not use specific SM platforms were asked to respond to the statement, "would you like to use *inserted name of specific SM platform here* (i.e., Facebook, Instagram, Twitter, and Snapchat)," followed by the response options of yes and no. A response of "yes" indicated that a respondent wanted to the SM platform and a response of "no" indicated that they did not want to use the platform. The majority of SM platform non-users reported having no desire to use the platform. One hundred and nine Twitter non-users (68.5%) had no desire to use the platform. 65 (43.6%) Snapchat non-users, 59 (39.6%) Instagram non-users, and 45 (30.2%) Facebook non-users did not have desire to use the platform. Sixteen non-users of Facebook (10.7%), 21 of Instagram (14.1%), 24 of Snapchat (16.1%), and 15 of Twitter (10.1%) had desire to use the platform. Table 14 contains a complete listing of the desire to use SM variable for non-users. The majority of respondents, ranging from 67.5% to 11.3% of total respondents, who were users of specific SM platforms, desired to increase their use of the platform. Fifty-four users of Facebook (67.5%) 46 of Instagram (28.7%), 40 of Snapchat (25.0%), and 18 of Twitter desired to increase their use of the platform. 26 Facebook users (32.5%), 15 Instagram (9.4%), 12 Snapchat (7.5%) and 6 Twitter (2.8) did not desire to increase

their use of the specific platform. Refer to Table 15 for a listing of the desire to increase SM use for platform specific users.

Table 14: *Non-User Desire to Use SM*

	Yes		No	
SM Platform	*N*	%	*N*	%
Facebook	16	10.7	45	30.2
Instagram	21	14.1	59	39.6
Snapchat	24	16.1	65	43.6
Twitter	15	10.1	102	68.5

Table 15: *User Desire to Increase SM Use*

	Yes		No	
SM Platform	*N*	%	*N*	%
Facebook	54	67.5	26	32.5
Instagram	46	28.7	15	9.4
Snapchat	40	25.0	12	7.5
Twitter	18	11.3	6	3.8

Discussion

This study used a web-based accessible survey to examine the need for SM safety instruction specifically formed for young adults with ID. In order to determine this need, the survey analyzed the knowledge of combating SM risks, perceptions, current SM use, and desire to use SM of young adults with ID who lived in the United States and ranged in age from 13 to 24. Survey data indicated a need for SM safety instruction specifically geared towards these young adults. Within the following paragraphs, this need is discussed in relation to the individual research questions addressed by this study.

A lack of knowledge in combating SM risks factored largely into the need for SM safety instruction. Results indicated that the SM risk area in which instruction is most critical is that of hacked accounts (i.e., someone obtaining password or accessing accounts without permission), as the majority of respondents did not know how to address these SM risks. It was also indicated

that males and high school aged (13 to 18-years-old) respondents may require SM safety instruction more than respondents who were female and/or of the PSE age (19 to 24-years-old). While the majority of respondents indicated knowing how to address 10 of the SM risks, there were still between 51 to 62 young adults who did not have knowledge of strategies to use when combating these risks. This reflects a minimum of 36% of the total population, which is a relatively large portion of the total sample. To highlight the need for SM safety instruction for this population, it is important to note that at least 36% of this survey sample are at risk when using SM. By not having knowledge of addressing specific SM risks, these individuals could respond incorrectly/inappropriately when a SM risk does arise. Effects of this can be detrimental, as one incidence of responding inappropriately to an SM risk can cause harm. Through providing SM safety instruction for the young adults with ID who are more at risk for inappropriately responding to SM risks, we can alleviate the dangers of these risks.

The need for SM safety instruction was also determined by the lack of individuals teaching SM use to young adults with ID. Survey data indicated that family members were primarily teaching SM use to these young adults. However, learning SM from family was not significantly related to knowledge of combating SM risks. The reasons for this lack of significant relationships could be attributed to many factors (i.e., lack of resources, lack of personal knowledge of SM risk combating strategies, etc.). One of these factors could be due to the lack of family friendly resources available for teaching young adults with ID SM safety. The development of these resources could be beneficial. This opens a need for further research to investigate the need for these resources. Friends also played a critical role in teaching SM to young adults with ID. A significant relationship existed between learning SM use from friends and knowing how to address the SM safety risks of receiving mean comments, being told to do

something against will, hacked passwords, strangers sending friend requests, hacked accounts, and receiving something that resulted in uncomfortable feelings. School did not play a critical role in teaching SM use to respondents, as only 29.5% of respondents reported learning SM use from school. However, learning SM from school did have a significant relationship with the SM risks of hacked passwords, hacked accounts, being bothered by someone, receiving something that resulted in uncomfortable feelings, being asked for pictures, and being asked for personal information. While significant relationships between learning SM use from school and friends and knowledge of SM risk combating strategies exist, it is important to note that this does not imply causation. Instead, it can be inferred that respondents who reported learning SM use from friends and school more frequently reported knowing strategies to combat the risks in which the significant relationships exist. This knowledge can be impacted by a number of factors. The need for further investigation into these relationships is discussed within the future research section. Lastly, the majority of respondents reported having a desire to learn more about SM. Each of these findings for learning SM reflect a need for SM safety instruction, as well as a possible need for family friendly resources in this area.

The TAM (Davis, 1989) variables of PU and PEU were examined to determine the need for SM safety instruction. Respondents reported SM to be useful for all 12 benefits of SM use, especially those of talking to friends and family, having fun, learning new things, finding information, and seeing what others are doing. The SM platforms of Facebook, Instagram, and Snapchat were the platforms in which respondents reported as easy to use. The easiest to use platform was Facebook. Instagram was second easiest to use and Snapchat was the third easiest. Twitter was the only SM platform reported as hard to use. According to TAM these perceptions can predict the actual, or intended, SM use of respondents. Through applying TAM to these

results, it can be inferred that the majority of respondents may either already use or intend to use the SM platforms of Facebook, Instagram, and Snapchat. Whereas, the majority of respondents may not intend to use Twitter. Further statistical analyses can be run with survey data to predict/investigate this relationship; however, this is beyond the purpose of this dissertation. Through analyzing the TAM constructs, a need to provide SM safety instruction specific to the platforms of Facebook, Instagram, and Snapchat is demonstrated.

Current SM use of young adults with ID also indicated a need for SM safety instruction. Facebook, Instagram, Snapchat, and Twitter all had respondents who reported using the platform. Facebook was the SM platform with the most users. Instagram ranked as second in users and Snapchat third. Twitter had the lowest number of users. The majority of those who used specific platforms use the platform more than once within the past two days. This data indicates that not only do young adults with ID already use SM platforms, but that they use these platforms quite frequently. As a result of this finding, it is imperative for SM safety instruction to be given to these young adults.

Data related to the desire to use, or increase use of, SM also demonstrated a need for SM safety instruction. The majority of young adults with ID who were not users of SM platforms reported having no desire to use the SM platforms. Among non-users, Twitter was the least desired to be used, while Snapchat was the most desired to use. In contrast, respondents who did use specific SM platforms desired to increase their use of the platform. The desire to increase use was highest among Facebook users and Instagram was the second highest. Twitter was the least desired for increasing use. These findings indicate the need for SM safety instruction particularly among young adults with ID who are already users of SM. The lack of desire to use SM among non-users can be attributed to several factors. One of these factors could be a result of lack of

knowledge and/or exposure, as well as fear of using SM because of dangers that could arise. By providing SM safety instruction to these young adults, these young adults would be equipped with the knowledge and skills needed to make informed decisions about using SM. It would also play a beneficial role for if, or when, the young adult chooses to use SM.

Limitations

Several limitations do exist for this study. First, this survey was based on self-reporting. As with any self-reporting, responses could contain bias and/or not be a true indication of the actual nature of the response. It is also possible that social desirability had an effect on survey responses. Respondents may have chosen responses based on what they perceived to be favorable for the researcher or those present when completing the survey. Secondly, administration of this survey was purely online. Additionally, recruitment was done through websites, listservs, and SM platforms. Therefore, individuals who did not meet study inclusion could have had access to the survey. Steps were taken to prevent this (gatekeepers were used for recruitment and respondents were asked to confirm that inclusion criteria were met in order to gain access to the survey). While these steps were taken, there could still be a chance that those who did not meet inclusion criteria accessed the survey.

Another limitation of this study pertains to the reporting of knowledge for combating SM safety risks. While one can indicate that they have knowledge of how to address SM risks, this knowledge may not reflect the actions that will be taken when a risk does occur. These actions relate to choices made when presented with the risk situation in real life. This limitation offers room for future research, which is discussed in the following section.

The last limitations of this study relate to reliability and generalization. While the sample met the minimum number of respondents set by an a priori power analysis, the survey was

implemented at one point in time with one sample (young adults with ID who were between the ages of 13 and 24 and lived in the United States). Additionally, the demographics of gender and age were the only demographics collected within the survey. Therefore, generalization into demographics other than gender and age cannot be made. Lastly, only 141 individuals completed the survey. While this is large number, it is only a small portion of the larger population of young adult with ID who live in the US. Each of these limitations to reliability and generalization result in a need for future research.

Future Research

Study findings indicated three main areas in which future research is needed, generalizability, reliability, the application of SM risk combating knowledge to actual risk situations, and the relationship between learning SM from friends, school, and family and knowledge of combating SM risks. Recommendations for research in these areas are included below.

It is essential to conduct future research in order to enhance the generalization and reliability of survey findings. To increase reliability, this survey should be replicated with other young adults with ID and results should be compared. Generalization of this study can be enhanced through the replication of the survey with respondents of different demographics (e.g., cultures, socioeconomic backgrounds, abilities, school settings, etc.).

Another area in which future research is needed pertains to the application of knowledge for combating SM risks. This study identified if survey respondents had knowledge of how to combat 13 SM risks. However, these findings may not generalize into actual actions that would be taken should a risk arise. Surveys in which respondents indicate actions they would take to address SM risk scenarios would be beneficial. Study 2 of this dissertation provides an example

of how this can be addressed with research. However, due to risk areas including sensitive topics, caution must be used. Should future research be pursued in this area, assistance of an IRB is highly recommended.

Lastly, there is a need to investigate the relationship between learning SM from school, friends, and family and knowledge of combating SM risks. These relationships can be investigated through surveys that examine the specific content in which young adults with ID learned from these groups of individuals. Surveys such as these could further identify groups of individuals in which SM safety resources should be formed.

Summary

This study implemented an accessible web-survey with young adults with ID who were between the ages of 13 and 24 and lived in the US. 141 respondents completed the survey. Of these respondents, there was an equal number of females and males. The majority of respondents did not have knowledge of how to address SM safety risks that pertain to hacked accounts. Males and high school aged respondents reported less knowledge of SM rick combating strategies than females and PSE aged respondents. SM use was mainly learned from family and friends. School was reported to have taught SM use to 29.5% of respondents. There were significant relationships between several SM risk combating knowledge areas and learning SM use from family and school. However, there were no significant relationships between total SM risk combating knowledge and learning SM use from school, friends, or family. SM platforms were perceived to be useful for all 13 perceived benefits. Talking to friends and family and having fun were among the most frequently reported perceived benefits. Facebook was the most used platform and Twitter the least used. SM platforms were used more than once within the past two days and users had a desire to increase their use of SM. Non-users of SM did not have a desire to

use specific platforms. Twitter was the least desired to use platform among both users and non-users of SM. Twitter was reported as hard to use, while the platforms of Facebook, Instagram, and Snapchat were easy to use. Lastly, young adults with ID had a desire to learn more about using SM. Each of these findings resulted in the identification of the need for SM safety instruction to be given to young adults with ID, particularly to males and/or high school aged individuals and pertaining to the SM platforms of Facebook, Instagram, and Snapchat.

Chapter 3

Using a Visual Checklist and Corrective Feedback to Identify Electronic Message Safety Level

A lack of support and education is frequently cited as a barrier to the SM use of young adults with ID (Chadwick, et al., 2013; Ramsten, et al., 2018; Sorbring, et al., 2017). This barrier has been mentioned by parents, direct support staff, young adults with ID, and researchers (Lofgren-Martenson, et al., 2018; Molin, et al., 2017; Ramsten, et al., 2018; Raghavendra, et al., 2018; Shpigelman, 2017; Sorbring, et al., 2017). Furthermore, parents of young adults with ID have expressed a desire for educators to take part in teaching their young adult SM skills (Raghavendra, et al., 2018; Sorbring, et al., 2017), especially in the area of cyber safety (Raghavendra, et al., 2018). In addition to these parental perspectives, young adults with ID have indicated a want for adults to increase their involvement and responsibility in their SM use (Molin, et al., 2017). These perspectives are evidence that educators must begin implementing instruction to promote SM and cyber safety skills in young adults with ID.

Among the 25 existing studies that investigated the SM use of young adults with ID, only one study (Raghavendra et al., 2018) mentioned teaching SM skills to these young adults. In this study, Raghavendra utilized prompting, task analysis, visual aids, scaffolding, modeling, and opportunities to practice skills. Another study mentioned using teaching strategies to provide assistance to adults who had an ID when using mainstream Facebook. Davies, et al. (2015) noted that while participants used mainstream Facebook, research staff had to use verbal and gestural prompting, as well as task analyzed verbal directions, to enable participants to successfully complete Facebook tasks. These two studies provided evidence that the teaching strategies of

prompting, tasks analysis, visual aids, scaffolding, modeling, and providing opportunities to practice may be beneficial to teaching SM skills to young adults with ID.

The online resources of Common Sense Education, Childnet International, United Kingdom Safer Internet Centre, and United Kingdom Down Syndrome Association each contain resources for parents, teachers, and students; lesson plans for educators; activities for students; and online games for students. Provided lesson plans contain task analyzed direct instruction, modeling, guided practice, discussion prompts, videos, visuals, and assessments to assess mastery of skills taught. Common Sense Education, Childnet International and the UK Safer Internet Centre are all geared towards teaching students who do not have a disability SM skills and safety. The UK Down Syndrome association is the only free online resource that contains resources specifically for teaching individuals with ID internet safety skills. This website contains one task analysis checklist that utilizes visual prompts for each internet safety step, which also provided evidence that the use of task analysis and visuals may be beneficial to teaching SM skills to young adults with ID.

Purpose

Currently, no literature provides possible interventions teachers can implement when teaching SM safety skills to young adults with ID. Therefore, the purpose of this study was to examine the effectiveness of a possible SM safety instructional strategy. This study addressed the following research questions:

1. What is the effectiveness of using a visual checklist and corrective feedback to increase accurate identification of the safety level of electronic messages for young adults with ID?

2. What is the social validity of using a visual checklist to support online safety for young adults with ID?

Method

Participants

Participants were chosen for this study based on the following criteria: (a) were between the ages of 18 and 24; (b) received education or agency services under the category of intellectual disability; (c) already had accounts to the platforms being used for the generalization phase of this study (Gmail, Twitter, Facebook, Instagram, and Snapchat) or were willing to create personal accounts for this study; (d) gave written consent to participate in this study; and (e) had a parent or guardian give written consent for study participation. Six young adults who met inclusion criteria were for this study. However, one young adult met mastery criteria during baseline and was removed from the study. As a result, five young adults participated in this study. All participants attended a post-secondary education (PSE) program at a large university located in the southeastern United States. PSE program enrollment consisted of auditing general university courses and participation in the program-specific courses of career planning, life skills, and digital literacy. PSE participants were also given options for on-campus residential living and membership in gender specific group counseling. Participants in this study consisted of five females who ranged in age from 20 to 23 and fulfilled PSE program enrollment requirements. Specific characteristics pertaining to each participant can be seen in Table 16. Pseudonyms were used in order to maintain confidentiality.

Table 16: *Participant Characteristics*

Participant	Age	Disability	IQ	Adaptive
Noel	20	Intellectual Disability	55[A]	63[D]
Daphne	20	Intellectual Disability	58[B]	85[E]
Effie	23	Intellectual Disability	56[B]	68[D]
Sylvia	20	Intellectual Disability	50[B]	61[D]
Izzie	22	Intellectual Disability	55[C]	62[E]

A= Stanford-Binet Intelligence Scales- Fifth Edition (SBIS V), B= Woodcock-Johnson Fourth Edition: Tests of Cognitive Abilities (WJ IV), C= Weschler Intelligence Scale for Children- Third Edition (WISC III), D= Vineland Adaptive Scales- Second Edition (VABS II), E= Adaptive Behavior Assessment System- Third Edition (ABAS III).

Noel. Noel was a 20-year-old female in her second year of the PSE program. She had an IQ of 55 when assessed with the Stanford-Binet Intelligence Scales- Fifth Edition (Roid, 2003)., which placed her in the mildly impaired range. Noel's adaptive behavior composite score was 63 on the Vineland Adaptive Scales- Second Edition (Sparrow, Balla, & Cicchetti, 1984). At the time of this study, Noel frequently used Facebook, Instagram, and email. In the past, Noel did use Snapchat but reported that she had some incidents where she used it inappropriately. This resulted in parents not allowing her the use of Snapchat. Noel had no previous experience with using Twitter.

Daphne. Daphne was a 20-year-old female in her second year of the PSE program. When assessed with the Woodcock-Johnson IV: Tests of Cognitive Abilities (McGrew, LaForte, Schrank, 2014), Daphne had an IQ of 58. This placed her in the very low range. Daphne's adaptive score was 85 when assessed with the Adaptive Behavior Assessment System- Third Edition (Harrison & Oakland, 2015). At the time of the study, Daphne frequently used Instagram and email. She had previous experience with using Facebook and Snapchat. Daphne did report previous incidents that resulted in parents not allowing the use of Snapchat. She also reported an incident where she engaged inappropriately on SM. This incident resulted in fear of posting on SM and replying to messages sent on SM.

Effie. Effie was a 23-year-old female in her first year of the PSE program. When assessed with the Woodcock-Johnson IV: Tests of Cognitive Abilities (McGrew, LaForte, Schrank, 2014), Effie had an IQ of 56. This placed her in the very low range. Effie's adaptive score on the Vineland Adaptive Scales- Second Edition (Sparrow, Balla, & Cicchetti, 1984) was 68. At the time of the study, Effie frequently used Instagram, Facebook, and email. She had no prior experience in using Snapchat or Twitter. Effie did report several past incidents where she was sent mean or inappropriate messages on a SM platform.

Sylvia. Sylvia was a 20-year-old female in her second year of the PSE program. When assessed with the Woodcock-Johnson IV: Tests of Cognitive Abilities (McGrew, LaForte, Schrank, 2014), Sylvia had an IQ of 50. This placed her in the very low range. Sylvia's adaptive score on the Vineland Adaptive Scales- Second Edition (Sparrow, Balla, & Cicchetti, 1984) was a 61. At the time of the study, Sylvia frequently used Facebook and email. She had no previous experience with using Twitter, Instagram, or Snapchat. Sylvia reported not having experience with receiving dangerous messages.

Izzie. Izzie was a 22-year-old female in her first year of the PSE program. When assessed with the Weschler Intelligence Scale for Children- Third Edition (Weschler, 1991), Izzie had an IQ of 55. This placed her in the extremely low range. Izzie's adaptive score on the Adaptive Behavior Assessment System- Third Edition (Harrison & Oakland, 2015) was 62. At the time of the study, Izzie frequently used Facebook, Snapchat, Instagram, and email. She had no previous experience with using Twitter. Izzie reported having no experience with receiving dangerous messages.

Teacher

A graduate assistant, who taught digital literacy courses to the participants in this study, was the teacher who implemented each phase of this study. The teacher had eight years of

experience teaching special education, held a bachelor and master's degree in special education, and was pursuing a doctorate in special education during the duration of this study. Additionally, the teacher had four years of experience teaching digital literacy skills to young adults with intellectual and/or developmental disabilities within the PSE program in which participants were enrolled.

Setting

All phases of this study occurred in one-on-one sessions with the teacher. Sessions took place in the teacher's office with the door closed and consisted of 5-15 minutes, depending on the time needed for the participant to log into their online course website and access the online simulation. Participants were students enrolled in the teacher's digital literacy courses. Due to this, participants had access to a course website that was embedded on the university's online learning management system, Canvas. This website contained course materials, assignments, a grade section for students to see their own grades, specific links to use when uploading assignments, a discussion board forum, and a secure place to take course quizzes/tests. The baseline, intervention, and maintenance phases of this study took place within secured simulations assigned and completed on the Canvas course website. Simulations were released only to participants in this study. Therefore, only the teacher and study participants had access to study simulations. The generalization phase of this study took place within messages sent to participants on Facebook, Gmail, Twitter, Instagram, and Snapchat. Lastly, sessions during baseline, training, intervention, and maintenance phases were audio recorded on the teacher's iPhone for procedural integrity and cybercrime mandatory reporting purposes.

Materials

Materials used in this study included a visual checklist (VC), simulations formed on Canvas, iMac desktop computer to form and take simulations, two accounts created on Facebook, Gmail, Twitter, Instagram, and Snapchat solely for research purposes, the teacher's personal accounts on each of these platforms, a voice recorder app on the teacher's iPhone, and a crisis plan should sensitive topics trigger problematic emotions for participants. These materials are discussed in further detail within the following paragraphs.

Visual Checklist. The VC used in this study was adapted from Common Sense Education's *Safe Online Talk* lesson for students in grades 6-8. Included in this lesson was a VC which utilized a traffic light to indicate when a student should become cautious or stop online conversations. The VC used in this lesson plan can be seen in Figure 13. Due to the complexity of this VC, the primary researcher made adaptations to allow independent use for young adults with ID. Adaptions made to the VC included the following: use of red stop sign and green go sign instead of traffic light; elimination of caution portion of VC; use of checklist format; enlarged and bolded text for action steps; and replication of checklist for both the stop and go portion of VC. The adapted VC used for this study can be seen in Figure 14. To aid in the determination of message safety, the VC prompted participants to ask themselves the following questions: (1) do you know the person that sent the message; (2) is the message appropriate; (3) does the message bother you; and (4) does the message ask for personal information? Affirmative statements that pertain to these questions were provided on the VC in the form of a checklist. The use of this VC is described in the training portion within the intervention section of this paper.



Stop! Too dangerous to proceed.	The person you are talking to is clearly acting inappropriately, and the conversation needs to end.
Slow down, be cautious—and be prepared to stop.	Something about this conversation makes you feel uncomfortable. You're alert for any signs of inappropriate or suspicious behavior.
Coast is clear (but look both ways!)	You feel safe and enjoy interacting with this person online. But you also remember that all conversations can take unexpected turns, so you're prepared to put the brakes on if you need to. You have not provided any private information.

Figure 13: *Common Sense Education's Visual Checklist* (Common Sense Education, 2017)

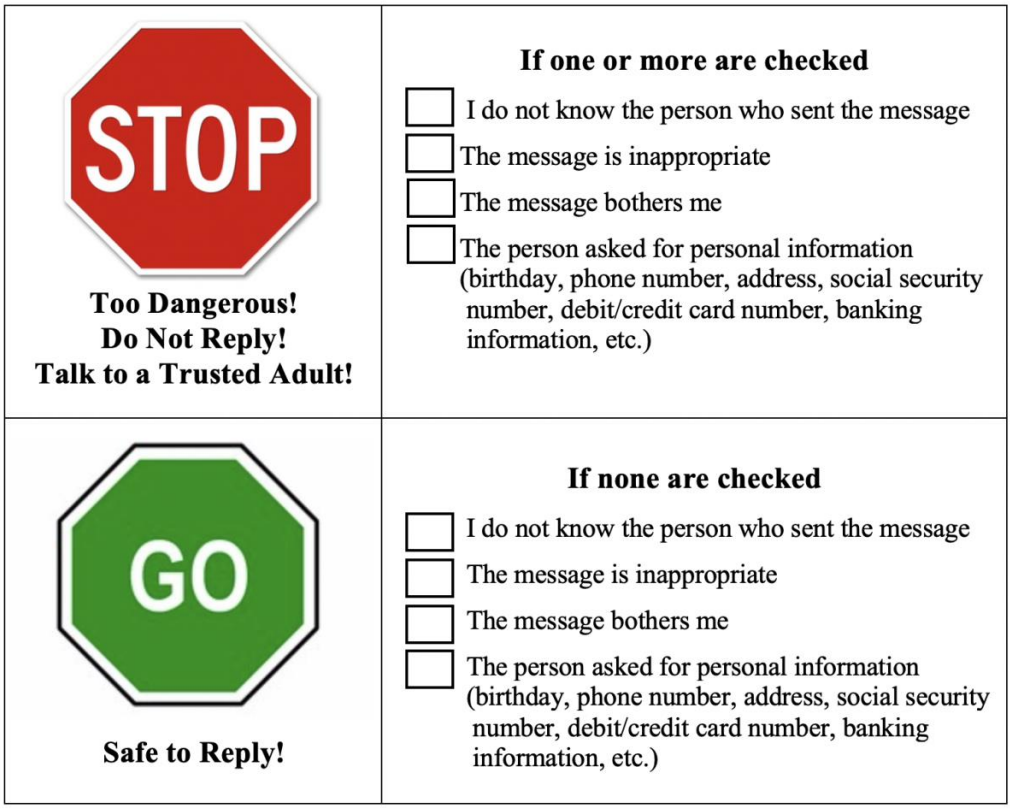


Figure 14: *Adapted Visual Checklist*

Message Simulations. In order to allow participants safe opportunities to use the VC when making decisions pertaining to electronic messages, message simulations were created and released to participants as ungraded surveys on Canvas. Each simulation contained five messages with two questions per message. A total of 10 questions were administered during each simulation. The messages given in simulations were designed to appear as if it was sent as an electronic message on Facebook, Gmail, Instagram, Snapchat, or Twitter (an example message can be seen in Figure 15 and messages used in this study are included within Appendix Q). The name or username of the sender of the message was also included in the message. Senders of the messages ranged from the names of fictious strangers, a fictious name that used the first or last name of a person the participants knew, favorite celebrities, and the teacher. Messages used in simulations were taken and adapted from the following resources: www.cyberbullying.org, https://www.usa.gov/common-scams-frauds-, Common Sense Education's (2017) *Private and Personal* Lesson plan for 4th grade students, and Common Sense Education's (2017) *Chatting Safely Online* Lesson plan for students in grades 6-8. The messages also were approved by the University of Tennessee's IRB. Each simulation presented messages in a randomized order. Upon opening the simulation, participants were presented with a message to read and asked the following two questions:

1. Is this message safe or dangerous?
    a. Safe
    b. Dangerous

2. Would you reply to this message?
    a. Yes
    b. No

After answering the questions, participants were presented with the next message and same two questions. This organization was replicated for each of the remaining three messages. An

example of a simulation is provided in Figure 15. Message simulations were released to participants at the beginning of each session to prevent participants from accessing them prior to meeting with the teacher. Lastly, it is important to note that screen readers could not be used with the electronic messages on the simulation, due to messages being screenshot from templates that mirrored actual SM messages. As some participants in this study used screen readers due to reading deficits, they were given the choice of either reading each simulation message out loud or having the teacher read the message to them.

Created SM Accounts. For generalization purposes, two accounts were created on Gmail, Facebook, Twitter, Instagram, and Snapchat. These accounts were created primarily for this study and used private profiles. The profile names for each account were associated with either a completely fictitious name participants did not recognize or a name that utilized the first or last name of someone participants knew well. The teacher's personal accounts were also used, as the participants knew the teacher well and already had the teacher as a friend/follower/contact on these platforms.

Crisis Plan. Prior to the implementation of this study, a crisis plan was formed, should any participant either need further counseling for emotions triggered by sensitive topics or report cybercrimes that personally occurred to them. In situations where further counseling was needed, the PSE program specific counselor was to be contacted immediately. Prior to study implementation, the researcher was informed of items considered cybercrimes when involving young adults with ID. The researcher also was familiar in mandatory reporting requirements should a cybercrime be reported during a session. Had a participant reported a cybercrime, the mandatory reporting requirements would have been implemented.

You get the following email.

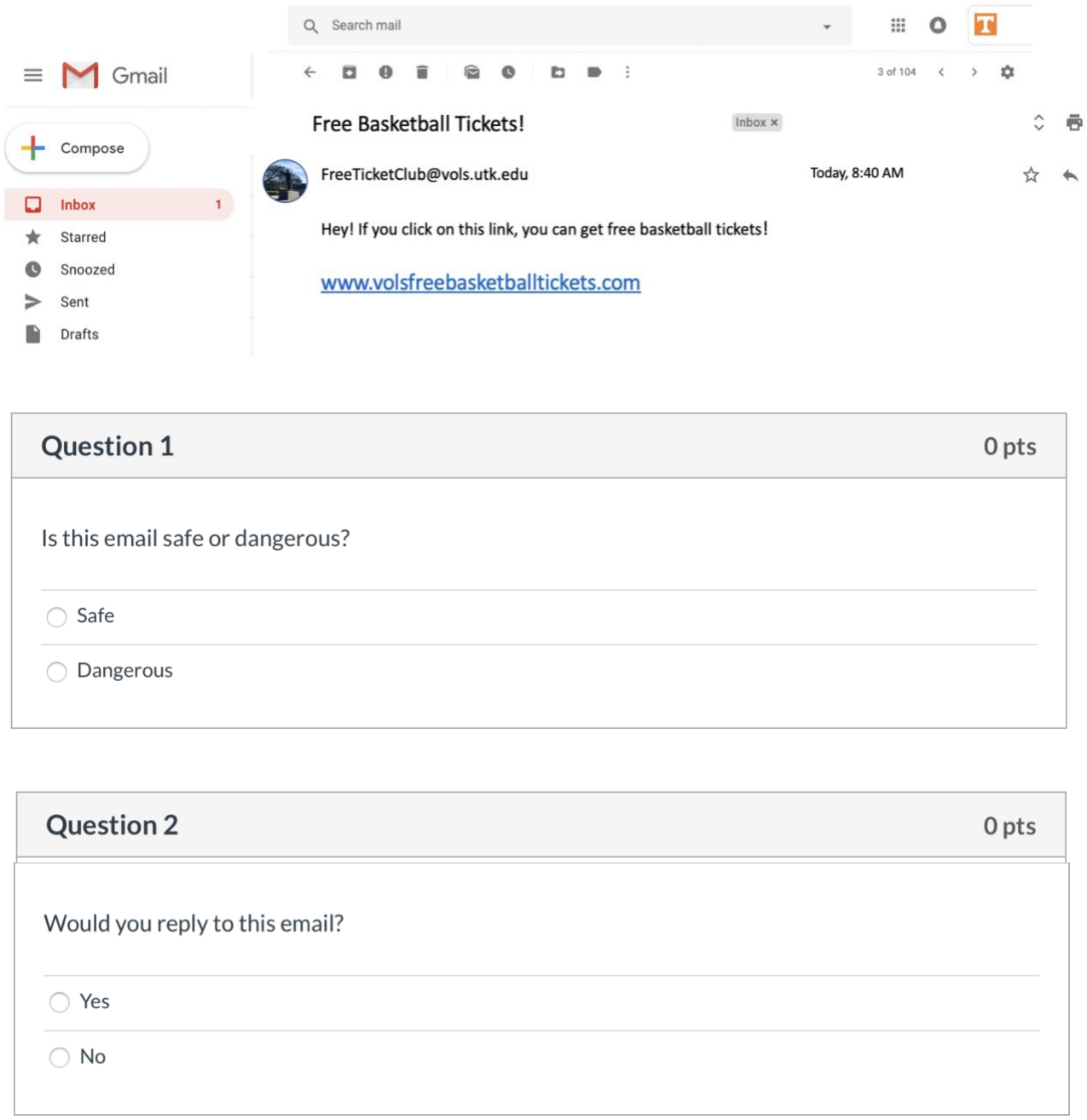


Figure 15: *Sample Safe or Dangerous Simulation*

Variables and Data Collection Methods

The total percentage of correct responses on message simulations served as the dependent variable in this study. During each session in the baseline, training, intervention, and maintenance phases of this study, participants were given one online simulation. These online simulations contained five messages, two questions per message, and a total of 10 questions. Message type (i.e., cyberbullying, predator, scam, safe, hacking) and platform (i.e., Facebook, Instagram, Twitter, Snapchat, and Gmail) were randomly presented in each simulation. The VC and CF intervention served as the independent variable in this study. Completed online simulations and replied messages on SM accounts created a permanent product that was used for data collection. The total percentage of correct responses on the online simulations were calculated, recorded, and graphed for each simulation. Event recording was used during the generalization phase of this study. During this phase, one message was sent to participants on Facebook, Instagram, Twitter, Snapchat, and Gmail (a total of five messages were sent to each participant). If a participant responded to a message that was safe, it was recorded as 100% correct. When a participant sent a response to a message that was dangerous, it was recorded as 0% correct. Total percentages for all five generalization messages were graphed for each participant.

Design

A multiple-probe across participants (Hammond & Gast, 2010) design was used for this study. This type of design allows for the examination of an intervention's effect across three or more participants (Byiers, Reichle, & Symons, 2012). As the purpose of this study was to examine the effectiveness a single intervention had on a participants' ability to identify the safety of an electronic message, multiple-probe across participants was chosen as the most appropriate

design for this study. When utilizing a multiple-probe across participants design, a researcher conducts a baseline phase with all participants simultaneously. After three to five baseline probes, the researcher introduces the intervention to the first participant (Horner, et al., 2005). The intervention is then given to the other participants in a staggering fashion (Byiers, Reichle, & Symons, 2012). By staggering the intervention, the researcher is able to demonstrate experimental control (Byiers, Reichle, & Symons, 2012; Horner, et al., 2005).

This study consisted of baseline, training, intervention, generalization, and maintenance phases that were replicated across five participants. Baseline procedures were conducted at the same time for all participants. As participants who participated in this study have close contact with each other, the intervention phase was systematically conducted to prevent issues that could arise if discussions about simulation messages were had between participants. When one participant achieved a score of 50% or higher than their average baseline score for three consecutive sessions, the next participant was introduced to the intervention. Once a participant met the acquisition criterion of 100% correct simulation responses for three consecutive sessions, they completed the intervention phase and were given a generalization probe. Noel began the intervention phase first. Once she achieved a score of 50% or higher than her average baseline score for three consecutive sessions, Daphne was introduced to the intervention. When Noel met the acquisition criteria, she began generalization probes. Once Daphne scored 50% or better than her average baseline score for three consecutive sessions, Effie began the intervention phase. When Daphne met the acquisition criteria, she began the generalization probes. Upon Effie's achievement of 50% or better than her average baseline score for three consecutive sessions, Sylvia began the intervention. When Effie met the acquisition criteria, she began generalization probes. Once Sylvia met 50% or higher than her average baseline score for three consecutive

sessions, Izzie was introduced to the intervention. Sylvia and Izzie were introduced to the generalization probes upon reaching the acquisition criteria. Lastly, two weeks after a participant reached the acquisition criterion, a maintenance probe of another simulation was given.

Procedures

Baseline. The baseline phase was comprised of one-on-one sessions that consisted of simulation completion and debriefing. Five probes were given to students simultaneously (Horner, et al., 2005). Both of these are described in further detail within the following paragraphs.

Simulation Completion. During the baseline phase, participants were simultaneously administered one simulation per session for five one-on-one sessions with the teacher. After completion of these five simulations, the first student began the intervention phase. The remaining four students were administered a baseline probe prior to introduction of the intervention. In these sessions, participants were prompted to log into Canvas and open the simulation that had been released to them. They were then provided with a verbal cue to begin the simulation (e.g., "this simulation is being done to see what you already know about electronic messages. You will complete it on your own. You may begin when you are ready"). No extra instruction, guidance, or prompts of any kind were given to participants during this phase of the study. If a participant asked for help, they were given verbal statements that reminded them of the purpose being to see what they already know (e.g., "remember that this is being done to see what you already know. If you are not sure of an answer, you are able to leave it blank or guess"). Questions pertaining to the technical use of simulations or computer hardware were answered (i.e., "how do I get to the next question? How do I work this mouse? Do I click on submit when I'm done?").

Debriefing. The last portion of the baseline phase consisted of a debriefing. Due to the sensitive nature of dangerous message topics (i.e., hate comments, cyberbullying, inappropriate flirtatious comments, asking for inappropriate pictures, etc.), a debriefing portion concluded sessions in the baseline phase. This debriefing consisted of the teacher asking if any messages bothered the participant (e.g., "some of the messages we saw today said hurtful, inappropriate, or bothersome things. Did any of them bother you or hurt your feelings?"). If a participant indicated that a message did bother them, the teacher asked the participant to talk about their feelings (e.g., "can you tell me more about how that made you feel?"). As the participant discussed their feelings, the teacher used active listening and responded when needed. The teacher also reinforced that messages seen were not real, but should similar messages be sent in real life it was important to show those to a trusted adult and report the message. If participants needed further guidance with emotions or reported a situation considered a cybercrime, the crisis plan was implemented.

Training. Prior to the introduction of intervention, participants were taught to use the VC in one training session. This training utilized direct instruction that consisted of modeling, guided practice, and independent practice. Each of these components are described below.

Introduction. The first portion of the training session was paper based (participants were given paper copies of the VC and printed copies of electronic messages formed specifically for the training phase of this study). Instruction began with the teacher introducing the key term of electronic messages. Participants were asked to give examples of electronic messages and identify if they have received any. If participants correctly identified electronic messages, the teacher gave positive feedback. When participants could not identify electronic messages, the teacher gave a definition and examples of platforms in which one could receive an electronic

message (i.e., text messages, email, social media messages, chat room messages, etc.). After feedback was given, the teacher asked the participant what one does with electronic messages. When it was determined that one reads and replies to messages, the concept of safe messages was introduced. Safe messages were defined for this study as a message that does not put the recipient in danger if replied to. Participants then engaged in a conversation with the teacher about messages that would be safe to reply to (e.g., family member asking what time participant was done with school, classmate asking when assignment was due, friend asking to do something, etc.). After identification of safe messages, dangerous messages were introduced. For the purpose of this study, dangerous messages were defined as messages that could cause harm if replied to and/or hurt someone's feelings. A conversation was then had between the teacher and participant about examples of dangerous messages (e.g., message asking for personal information, someone saying mean things, someone asking for nude pictures, etc.). The teacher also discussed that should one receive these messages, they should immediately tell a trusted adult, report the message, block the sender, and talk to someone about the emotions that were a result of the message. After this discussion, the teacher presented the VC to the participant with the following statement, "Sometimes, it can be hard to figure out if a message is safe or dangerous. To help us do this, we are going to use this visual checklist." The teacher then asked the participant to describe what they saw when they looked at the VC. As participants mentioned different elements of the VC, the teacher discussed the element with them. After discussion of the overall appearance of the VC, the teacher asked the participant to look at the checklist portion of the VC. Beginning with the stop portion of the VC, each statement was read, defined, and discussed as they relate to electronic messages (e.g., "what would be an example of a message that might bother you?"). Due to individuals having different definitions as to what might bother

them or be inappropriate, participants were asked to define these for themselves. The definitions of each checklist statement are provided in Table 17.

Table 17: *VC Checklist Statement Definitions*

Checklist Statement	Definition
I do not know the person who sent the message.	A person we do not know in real life, including celebrities.
The message is inappropriate.	Message that uses curse words; says mean things; tells one to do actions that are harmful or do not want to be done; and/or say, do, or ask for things that are sexual in nature.
The message bothers me.	Reading the message results in feeling upset, irritated, angry, or sad.
The person asked for personal information.	The message asks for personal information such as date of birth, phone number, address, social security number, debit/credit card information, and banking information.

Modeling. After the introduction of electronic messages and the VC, the teacher modeled the use of the VC to identify a message as safe or dangerous in a task analyzed manner (task analyzed steps can be seen in Table 18).To allow the participant the opportunity to follow along while the teacher modeled, the teacher gave the participant a printed copy of the VC and first message being used. Using the printed copies, the teacher began modeling by reading the message out loud. After reading the message to the participant, the teacher stated their thinking process out loud as they worked through the checklist (e.g., "First, I am going to start with the checkboxes next to the stop sign. I will start with the sentence next to the first checkbox. It says I do not know the person that sent the message. To find out who sent the message, I am going to look for the person's username. Where is their username? Ah, it is right here next to their message! This is someone I do know, so I am going to leave the first checkbox empty and go to the second checkbox"). This process was continued until the message was determined as safe. Then, the teacher presented the student with a paper copy of the second training message. The think aloud process was replicated with the dangerous message. For a detailed script of the

modeling process, refer to the lesson plan in Appendix R. Upon completion of the second message, the teacher gave the participant a paper copy of the third training message for guided practice. The guided practice process is described below.

Table 18: *Modeling VC Use Task Analysis*

1. Read username of sender
2. Look at profile picture of sender
3. Read message
4. Read first statement in stop portion of checklist (i.e., I do not know the person who sent the message)
5. Decide if sender is someone known personally
    a. If yes, leave first checklist box unmarked
    b. If no, place an "X" or checkmark in first checklist box
6. Read second statement in stop portion of checklist (i.e., The message is inappropriate)
7. Decide if message is inappropriate
    a. If yes, leave second checklist box unmarked
    b. If no, place an "X" or checkmark in second checklist box
8. Read third statement of stop portion of checklist (i.e., The message bothers me)
9. Decide if message is bothersome
    a. If yes, leave third checklist box unmarked
    b. If no, place an "X" or checkmark in third checklist box
10. Read fourth statement of stop portion of checklist (i.e., The person asked for personal information)
11. Decide if message asks for personal information
    a. If yes, leave fourth checklist box unmarked
    b. If no, place an "X" or checkmark in fourth checklist box
12. See if any box is marked within Stop portion
    a. If one or more are checked, identify the message as dangerous, do not reply, and show to a show a trusted adult immediately
    b. If none are checked, proceed to Go portion of the checklist and repeat checklist process
13. If one or more are checked in Go portion, identify the message as dangerous, do not reply, and show a trusted adult immediately
14. If none are checked in Go portion, identify the message as safe and reply as needed

Guided Practice. During guided practice, participants used a paper copy of the VC to make decisions about printed messages formed for the guided practice portion of the training session. First, participants were prompted to either read the message to the teacher or ask to have the teacher read the message to them. After reading the message, participants discussed the process of using the VC to determine the safety level of the printed message. Verbal and gestural prompts were given to participants as needed (e.g., teacher stating, "Remember to look at how many boxes are checked before moving on to complete the safe portion of the checklist" as pointing to checkboxes). Prompts were faded as participants mastered the process of independently using the VC. The guided practice portion of the training session continued until participants no longer needed prompting for the teacher in order to use the VC to accurately identify practice messages as safe or dangerous.

Independent Practice. The independent practice portion of the training session consisted of the participant independently completing an electronic message simulation on Canvas. Participants were prompted to log into Canvas and navigate to the quizzes portion of the Digital Literacy course website. After locating the simulation created for the training session, participants were given a paper copy of the VC and prompted by the teacher to begin the simulation (i.e., "You may begin the simulation whenever you are ready. You have a copy of the checklist next to you to use. This is for me to see if you can use the checklist on your own. Therefore, you will be completing the simulation on your own"). As participants completed the simulation, the teacher took note of their answers. If participants asked questions, a system of least to most prompting was utilized. First, the teacher would point to the VC and state, "remember to use the checklist." If the participant continued to need help, the teacher would point to the checklist and state, "work through the checklist." Once participants submitted the

simulation, the teacher engaged in a conversation with them that provided corrective feedback (CF). This process is described in detail within the following paragraph.

Corrective Feedback. During the CF stage of the training session, the teacher provided feedback to the participant regarding the answers they provided on their independent practice simulation. First, the teacher would ask the participant, "Let's talk about the first message of that simulation. This message said (*teacher reads message here*). What did you think about that message?" Once the student provided their thoughts, the teacher either gave positive feedback for correct responses (e.g., "you were correct in your thinking! Great job!") or statements that provided feedback in correcting responses that were incorrect (e.g., "You said this message was safe. Let's look at the person's username. Do you know who this person is? Remember, the first thing we do when identifying an electronic message as safe or dangerous is find the sender's username and see if we know them. Since we do not know this person, the message would be dangerous"). This process was continued for each of the four remaining messages used in the simulation. Upon completion of the CF stage, the teacher began the debriefing portion of the training session. The debriefing process is described below.

Debriefing. The last portion of the training phase consisted of debriefing. This process replicated the debriefing procedures utilized during baseline phase.

Intervention. The intervention phase consisted of three components: simulation completion, CF, and debriefing. Each of these components are described in detail with the following paragraphs.

Simulation Completion. To prevent participants from accessing simulations prior to meeting with the teacher, simulations were released to participants at the beginning of each session. When participants sat down at the teacher's computer, they were verbally prompted to

log into their personal Canvas website and navigate to the quizzes portion of the Digital Literacy course site. Participants were then verbally prompted to access the simulation that aligned with the session. Once the participants accessed the simulation, the teacher gave them a printed copy of the VC and verbally cued them to begin the simulation (e.g., "here is a copy of the checklist for you. You may begin the simulation whenever you are ready"). Participants then independently completed the simulation. If participants did not begin using the VC within 15 seconds after reading simulation messages, the teacher used a system of least to most prompts to remind participants to use the VC. Prompts were not given for VC use accuracy, as this feedback was given during the corrective feedback portions of sessions. First, the teacher would point to the VC. If participants continued to need assistance, the teacher gave a verbal prompt (e.g., "remember to use the visual if you need help"). Lastly, a verbal and gestural was used (i.e., "Remember to begin with the first checkbox on the visual," stated as teacher pointed to the first checkbox). The number of prompts given in each session was recorded. Once a participant achieved 100% accuracy for three consecutive simulations, they began the generalization phase of the study.

Corrective Feedback. After the submission of simulations, the teacher engaged in CF conversations with participants. This process replicated the CF stage of the training session.

Debriefing. The last portion of the intervention phase consisted of a debriefing. This process mirrored the debriefing procedures used in baseline and training phases.

Generalization. The generalization phase consisted of the teacher sending the participants messages on SM platforms. Five messages were sent to participants (one message was sent on Gmail, Twitter, Facebook, Instagram, and Snapchat) from accounts associated with an individual the participants knew well, a fictious stranger or a fictious stranger that had a

similar last or first name of someone they knew well. If, and how, participants responded to messages was recorded. If participants replied to a message that was safe, responses were recorded as correct (100% accuracy). If participants did not reply to a message that was safe, or replied to a message that was dangerous, it was recorded as incorrect (0% accuracy). Due to issues with some messages being filtered out of the primary SM direct message inbox of participants, the teacher would ask participants to check their accounts before, or after, their digital literacy class. Once in their accounts, the teacher would navigate them to the correct message within their filtered messages. The teacher would then ask them to think about the message and take the needed steps for the determined safety level. Due to the nature of Snapchat and the loss of messages within a time determined by the sender of messages, the teacher sent the messages to her own account and had participants look at the message before, or after, their Digital Literacy course (e.g., "I got this message. What do you think of it? If you think it would be safe to reply, you can go ahead and type in a response"). After completion of all six generalization messages, participants finished the generalization phase of the study.

Maintenance. Two weeks after participants met acquisition criterion (Al-Salahat, 2016, Richards, 2019) they were administered another simulation on Canvas. This maintenance probe was conducted to determine if skills gained from the intervention were maintained over a period of time. Procedures used in this phase mirrored those used during baseline.

Social Validity

Social validity data pertaining to the use of the VC to determine the safety level of an electronic message were collected at the conclusion of this study. This was completed through the administration of a self-report questionnaire. The questionnaire consisted of a 3-item Likert-type scale that utilized the responses of disagree, neutral, and agree. Six questions used this

scale. Two open-ended questions were also given. The questions asked on the questionnaire measured the degree to which the participants: (a) liked using the VC; (b) thought the VC was helpful; (c) desired to use the VC when using SM platforms; and (d) thought the VC helped them feel safe when talking to others online. Questionnaire responses were analyzed through the counting of frequencies for each response and examination of all comments made on the open-ended questions. The questionnaire that was used can be seen in Appendix S.

Interobserver Agreement

The lead researcher, a doctoral student in special education, trained a research assistant, also a doctoral student, to collect interobserver agreement (IOA) and procedural reliability data. IOA data were collected for a minimum of 30% of baseline and intervention phases for each participant (Barnett, et al., 2014; Jenkins & Reed, 2016). The research assistant was trained by the lead researcher to identify the safety level of messages used in the study, as well as actions to take after identification of the safety level (reply or not reply), using the four conditions given on the VC. During training, the research assistant was given printed copies of practice messages and the VC. The research assistant then used the VC to determine the safety level of messages and if responses should be sent. After the research assistant showed mastery in identifying electronic message safety level and response actions based on the four conditions of the VC, the lead researcher gave printed copies of simulations submitted by participants within the baseline and intervention phases upon completion of the data collection process. Both the lead researcher and the research assistant individually assessed participant response accuracy using event recording. IOA was calculated for each participant by adding the number of agreements and dividing by the total number of agreements and disagreements combined and multiplying by 100%. IOA for each participant was 100%.

Procedural Reliability

Procedural reliability was assessed by observing the teacher's session procedures during a minimum of 30% of baseline and intervention phases for each participant (Barnett, et al., 2013; Jenkins & Reed, 2016). Audio recordings of sessions and a checklist that included a task analysis of teacher procedures (provided in Appendix T) were used for this process. The research assistant was trained in using the checklist by the lead researcher through using two session recordings and the procedural reliability checklist. Once the research assistant showed mastery in using the checklist, the lead researcher and research assistant individually assessed for procedural reliability. If procedural reliability fell below 80% (Horner, et al., 2005; Roberts, Tingstrom, Olmi, & Bellipanni, 2008), the lead researcher and research assistant met to review baseline and intervention procedures. The overall mean for procedural reliability was 99.4% (range = 85.7% to 100%). The procedural reliability for sessions with each participant was as follows: Noel = 100%; Daphne = 97.4% (range = 85.7% to 100%); Effie = 100%; Sylvia = 100%; and Izzie = 100%.

Data Analysis Procedures

Once all participants completed simulations, the results obtained through event recording were graphed. As results were graphed, visual analysis procedures were used to analyze the following within-phase and between-phase data patterns: (a) level, (b) trend, (c) variability, (d) immediacy of the effect, (e) overlap, and (f) consistency of data patterns across similar phases (Kratochwill, et al., 2010). Within-phase comparisons were evaluated to assess predictable patterns of data. Data from adjacent phases were used to assess whether the independent variable was associated with a change in the dependent variable. Data were also examined for a functional relation (Gast, 2010), which according to Horner, et al. (2005), is demonstrated when

at least three occurrences of an effect are observed at a minimum of three different points in time. Lastly, effect size was calculated to demonstrate the magnitude of the intervention's effect (Campbell & Herzinger, 2010). The most common effect size calculation used in single-subject research is that of the percentage of non-overlapping data (PND), which is a calculation of the percentage of data that does not overlap between the baseline and intervention phases (Scruggs, et. al., 1987). However, due to PND being based on one data point within the baseline phase, an outlier may promote type 2 error (Lenz, 2013). For data sets in which a significant outlier is present within the baseline phase, the percentage of data exceeding the median (PEM) is recommended (Ma, 2006). PEM is measured by calculating the median data point within the baseline phase and examining the percentage of data points overlapping this point within the intervention phase. With PEM, an intervention is determined as effective if data is predominately on the therapeutic side of the baseline median. In ineffective interventions, data points will inconsistently fall above and below the median data point of baseline. Due to some participants in this study achieving scores that reached the ceiling of the possible score range, PEM was calculated for each participant. PEM scores range from 0 to 1. Intervention effectiveness was determined for each participant using the following PEM interpretation guidelines: PEM of less than .7 reflected an ineffective intervention, .7 to .9 indicated an intervention with moderate effectiveness, and .9 to 1 signified a highly effective intervention (Ma, 2006; Scruggs, et. al., 1987).

Results

Baseline performance indicated that most participants did not have mastery of identifying the safety level of electronic messages. There was great variability in performance from day to day and participant to participant. The average score between all participants during the baseline

phase was 52.3% (range = 0-100%). Errors made during the baseline phase did have some similarity. The majority of errors occurred on messages in which scams were present. Messages in which predators were present were the second highest category in which errors were made, cyberbullying the third highest, hacking the fourth, and safe messages the fifth. For further information about these errors, and a comparison between errors made during baseline and intervention phases, refer to Figure 17. Upon introduction to the VC and CF, all participants showed immediate improvement. Visual analysis indicated that the VC and CF were effective for teaching electronic message safety level identification. Figure 16 provides a graph of results for all participants. Results for individual participants are discussed in detail within the following paragraphs.

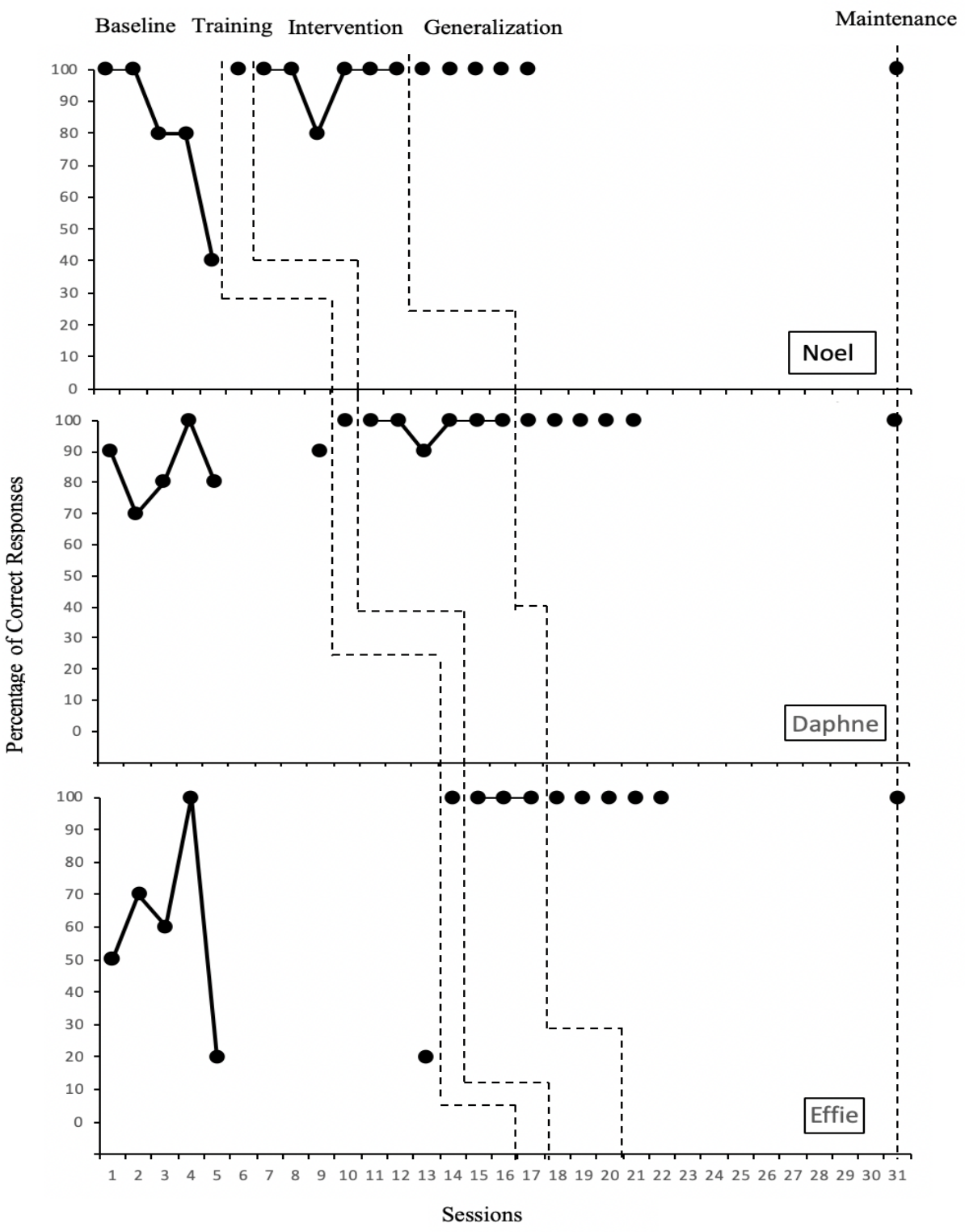


Figure 16: *Graph of Results*

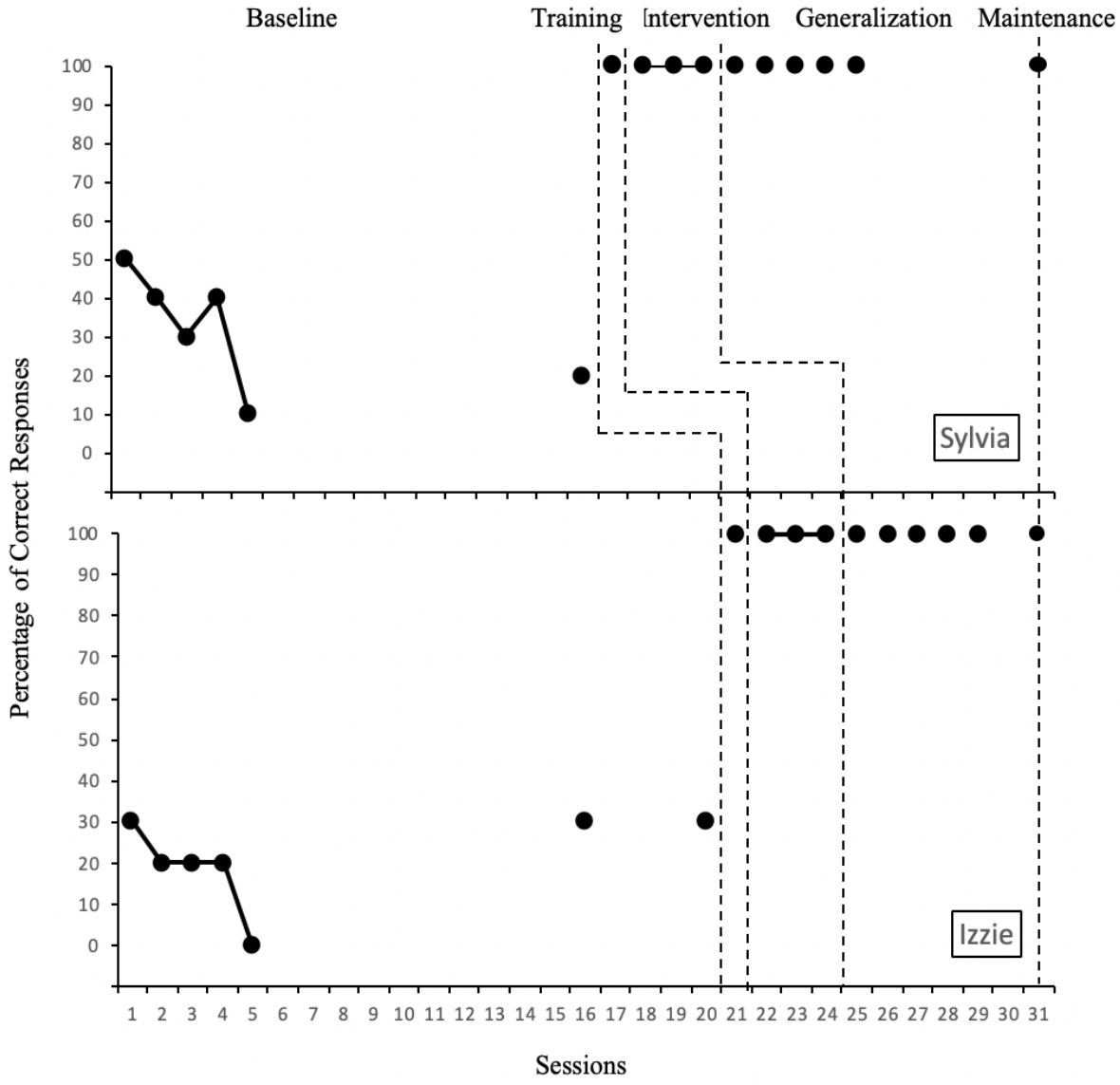


Figure 16 *(continued)*

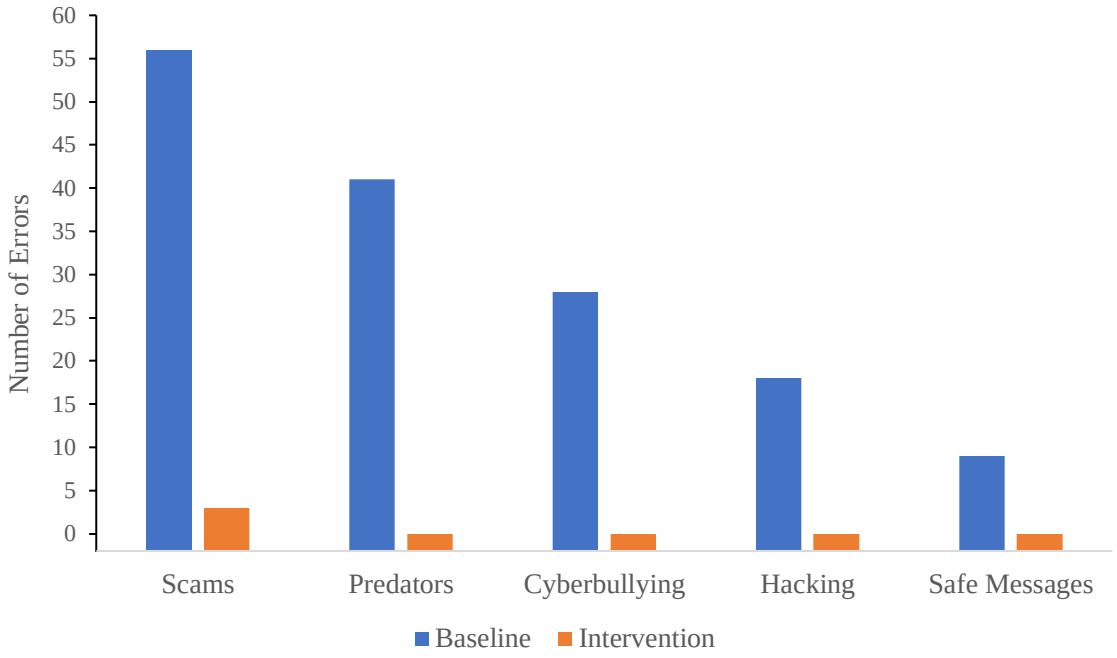


Figure 17: *Combined Simulation Errors for All Participants*

Noel. Due to reading deficits and the inability to use a screen reader during simulations, the teacher read messages to Noel during the baseline, training, intervention, and maintenance phases. Noel was able to use a screen reader on her phone for the generalization phase. During baseline, Noel averaged 80% correct responses (range = 40-100%). Errors made varied between messages that were safe, from predators, or scams. Upon introduction of the VC, Noel had immediate improvement. Noel did make two errors during the intervention phase. These errors pertained to a message offering a free Caribbean cruise if one went to a link, put in their debit card information, and paid $200. During the CF stage, the teacher engaged in a conversation with Noel about this message. After informing Noel that the message was dangerous and should not be replied to, Noel stated, “I know. I just really want that cruise! If it says free cruise, I am going!” It is important to note that this desire did have an effect on Noel’s simulation response.

Noel averaged 96.7% correct responses during the intervention phase (range 80-100%) with .83 PEM, which indicates that the intervention was moderately effective (Wendt, 2007). Noel required no prompting throughout the intervention phase. Lastly, Noel achieved an average of 100% on generalization probes and maintained the skill of identifying the safety level of electronic messages with 100% accuracy two weeks after completion of the intervention phase.

Daphne. During the baseline, training, intervention, and maintenance phases, Daphne chose to read simulation messages out loud. Daphne's average score during the baseline phase was 85% (range = 70-100%) with a total of nine errors, which altered between messages that were safe or scams. Daphne's performance had immediate improvement upon introduction to the intervention. During the intervention phase, Daphne made one error. Similar to Noel, this error was on the safety level identification of the message offering a free Caribbean cruise for $200. However, Daphne did determine that she would not reply to the message. When asked about this during the CF portion of the session, Daphne said, "I thought that, but I wasn't sure." Daphne averaged 98.3% (range = 90-100%) during the intervention phase. Her scores between the baseline and intervention phases had a PEM of 1, which indicates a highly effective intervention (Wendt, 2007). Daphne required three verbal prompts during the intervention phase. These prompts consisted of, "Remember to use the visual if you need help" and "You have the visual to help you." The prompting was needed on the Caribbean cruise message, as well as two messages that were sent from the teacher. On the messages from the teacher, Daphne would respond to the prompting with, "I am not sure if that is the right profile picture." When asked what this meant, Daphne explained that someone could be using the teacher's picture and sending the message as her. The teacher responded to these statements with, "That is great thinking. Just try your hardest!" During the CF session following these conversations, the teacher engaged in further

discussion about the profile picture. In this discussion, Daphne explained that she would look at the teacher's profile to make sure it was actually the teacher sending the message. The teacher gave positive feedback for this thinking. It was noted that Daphne frequently paused on messages from the teacher and made statements like, "Uh, it's the profile picture thing again." Lastly, Daphne scored 100% on all generalization probes and maintained this score during the maintenance probe given two weeks after completion of the intervention phase.

Effie. chose to read baseline, training, intervention, and maintenance simulation messages out loud. Her average score during the baseline phase was 53.3% (range = 20-100%). The majority of errors were made on messages from predators and scams. One error was made on a message that contained cyberbullying. Effie had immediate improvement once introduced to the intervention. Her scores during the intervention phase had an average of 100% with a PEM of 1, which indicates that the intervention was highly effective (Wendt, 2007). She did not require any prompting during the intervention phase. Effie also achieved an average of 100% during the generalization phase and maintained 100% accuracy two weeks after completion of the intervention phase.

Sylvia. Due to reading deficits, the teacher read baseline, training, intervention, and maintenance simulation messages to Sylvia out loud. Sylvia was able to access a screen reader on her phone for generalization probes. During the baseline phase, Sylvia averaged 31.7% (range = 10-50%). The majority of baseline errors were made on messages from predators and scams. Cyberbullying messages were the third highest message category for errors. Upon introduction of the intervention, Sylvia's performance immediately improved. She averaged 100% during the intervention phase with a PEM of 1, which indicates that the intervention was highly effective (Wendt, 2007). She did not require any prompting during the intervention phase. Sylvia also was

able to generalize the skill into SM platforms, as well as maintain the skill two weeks after completion of the intervention, with 100% accuracy.

Izzie. The teacher read Baseline, training, intervention, and maintenance simulation messages out loud to Izzie, due to reading deficits. Izzie was able to access a screen reader on her phone for generalization probes. Her score during the baseline phase was an average of 25% (range = 0-30%). Errors made varied between messages that were scams, from predators, cyberbullying, or safe. The majority of errors were made on scam messages. The next highest message category for errors was that of predators. Izzie's performance made immediate improvements once introduced to the intervention. She averaged 100% during the intervention phase and did not require any prompting. The PEM for her scores was 1, which indicates a highly effective intervention (Wendt, 2007). Lastly, Izzie achieved an average of 100% on generalization probes and maintained 100% accuracy when given a probe two weeks after intervention completion.

Social Validity Results

After completion of the study, participants completed a questionnaire where they were asked their thoughts on using the VC to identify the safety level of electronic messages. This questionnaire consisted of six questions that incorporated a 3-item Likert-type scale and two open-ended questions (See Appendix S). Overall, participants reported positive opinions on the use of the VC. All participants agreed that they (a) liked using the VC checklist and (b) could use the VC to decide if messages sent on SM were safe or dangerous. Four participants agreed that (a) using the VC helped them decide if messages were safe or dangerous (Izzie responded with neutral); (b) the VC would help them decide if messages sent to them on SM were safe or dangerous (Izzie responded with disagree); (c) they want to use the VC to help them decide if

messages sent to them on SM were safe or dangerous (Daphne responded with neutral); and (d) using the VC would help them feel safer when talking to others online (Izzie responded with neutral). When asked an open-ended question about what they liked best about using the VC, three participants gave statements which related to the VC helping them feel safer online. For example, Effie gave the following statement, "I know how to be safe online now." The other participants opted to not provide responses to this question. When asked what they did not like about using the VC, four participants responded with either an "N/A" or "No." One participant stated that they, "did not like the dangerous messages."

Discussion

The purpose of this study was to examine the effectiveness of using a visual checklist and CF to increase the accurate identification of the safety level of electronic messages for young adults with ID. Upon introduction to the VC and CF, all participants immediately improved their safety level identification accuracy. Visual analysis and the calculation of the percentage of data exceeding the median revealed that this intervention was effective. All participants were able to generalize the skill of identifying the safety level of electronic messages into actual SM platforms. Participants also were able to maintain this skill two weeks after completion of the intervention phase.

During completion of the intervention phase, the teacher observed two participants using a thinking aloud process when determining the safety level of messages. These participants went through the checklist in the task analyzed manner used in the training session (e.g., "I know the person that sent the message. It is not inappropriate. It does not bother me. They do not ask for personal information. So, it is safe"). All participants also faded their use of the VC. After session two of the intervention, most participants no longer used the VC. During the CF part of

sessions, the teacher would ask participants to state what they thought of each message. Participants would accurately identify the safety level of the message and use statements from the VC to justify their thoughts (e.g., "I thought it was dangerous because they said mean things and that is inappropriate"). Errors made by participants during the intervention phase were similar. These errors pertained to a scam message that asked participants to put in their debit card information to pay $200 for a free Caribbean cruise. Lastly, only one participant needed prompting during this study. These prompts were needed for the Caribbean cruise message and messages sent from the teacher. The inability to look at the sender's profile when using the simulations resulted in the majority of prompts given. This participant was unsure if the profile picture used was real or if someone was posing as the teacher.

The teacher also noted that participants generally enjoyed completing simulations. Participants would often come early for their session, smile or laugh as they read messages, and enthusiastically make comments such as, "This message is from you!" After completion of the study, two participants asked if they could continue with the message simulations and sessions after returning from winter break.

It is also important to note that prior to the study, participants were students in a Digital Literacy course and had previously used SM platforms. Additionally, three participants had reported experiencing incidents with messages sent on SM that had resulted in their parent(s) no longer allowing them to use specific SM platforms. These participants did have a desire to use these specific platforms again but were unsure of how to be safe on them.

All participants had parents who were eager for their child to take part in this study. One parent reached out to the researcher and stated, "This needs to be taught from someone other than just us parents. Social media safety is a huge concern for me, especially since my child is

more vulnerable to these risks. It is nice to see someone other than us parents taking this on!" Prior to study participation, parents were able to see messages that would be used in this study and choose to opt out of message categories in which they did not want their child exposed. Only one parent opted out of categories. This parent opted out of messages that contained hate comments. The parental consent form that gave parent(s)/guardian(s) options to opt out of message categories can be seen in Appendix N.

Limitations

Several limitations must be considered when interpreting and applying the results of this study. First, a small sample (n = 5) of only females was used. All participants attended a PSE program in which highly motivated young adults with disabilities are granted admission. Each participant also had prior experience with using SM and instruction in digital literacy. Lastly, cultural and socioeconomic backgrounds were similar. As a result of these participant characteristics, results cannot be generalized to all young adults with ID.

Other limitations pertain to the usability of the simulations used during baseline, training, intervention, and maintenance phases. Due to the template used, messages had to be screenshot and uploaded into Canvas. This did not allow for screen readers to be used by participants. Therefore, the teacher was required to read messages to participants who otherwise would use a screen reader for reading deficits. Another issue with simulation usability pertained to the inability to examine a message sender's profile to ensure the sender was not someone posing as another person. This resulted in one participant requiring prompts, when she would otherwise not require prompting.

The usability of SM platforms was another limitation for this study. Facebook, Instagram, and Twitter filtered messages sent from the non-teacher accounts into the filtered message area

of direct messages. This required the teacher to ask participants to check their direct messages and navigate to the filtered message area of their direct messages. Seeing that this could be a possible limitation to the accuracy of a participants' response, the teacher opted to send messages to her own Snapchat accounts and have participants view the messages from her phone.

Lastly, the desires of one participant also had an effect on performance within the intervention phase. On the Caribbean cruise message, this participant indicated that the message was safe and would be replied to. However, during the CF session this participant stated that she knew the message was dangerous but responded with safe because she wanted to go on the cruise. This desire to obtain scam items may need to be taken into consideration when teaching the use of the VC.

Future Research

Results of this study indicate that using a VC and CF is an effective way to increase accurate electronic message safety level identification for young adults with ID. Further research is necessary in order to enhance study generalizability. As new SM platforms arise, it would be beneficial to assess the effectiveness of using this intervention within these new platforms. It is also essential to evaluate the effects of this intervention across a variety of settings (e.g., school, home, residential programs, etc.) with a variety of individuals acting as the teacher (e.g., family member, caretaker, teacher, etc.) and utilizing participants of different ages, cultures, socioeconomic backgrounds, abilities, and geographic locations.

Summary

This study implemented a multiple-probe across participants design to assess the effectiveness of using a VC and CF to increase accuracy of electronic message safety level identification for young adults with ID. Five females, who attended a PSE program, participated

in this study. All participants met the intervention acquisition criterion within three to five sessions, generalized into the platforms of Gmail, Facebook, Instagram, Twitter, and Snapchat, and maintained the skill two weeks after completion of the intervention phase. Effect size calculation indicated intervention effectiveness for all participants. Lastly, social validity data showed that the majority of participants liked using the VC, thought it would help them stay safe when using SM platforms, and desired to use it when using SM platforms.

Chapter 4

Discussion

This dissertation identified the need for SM safety instruction formed specifically for young adults with ID, proposed a possible SM safety instructional strategy, and assessed the effectiveness of the proposed strategy. In Chapter 1, the need for SM safety instruction for young adults with ID was examined through a literature review. Results of the literature review revealed three major findings: (a) SM use can be beneficial to young adults with ID, however vulnerability to being either a victim or perpetrator to online dangers heavily weighs decisions to prohibit, or limit, SM use and education for these young adults; (b) research focused on forming instructional strategies to support/teach safe SM use to these young adults is nonexistent; and (c) the SM use and safety knowledge of young adults with ID who live in the United States has not been explored. The two studies of this dissertation focused on examining the two latter findings.

Study 1. Results of study 1 demonstrated a need for the formation of SM safety instruction for young adults with ID. Results of an accessible web-based survey, implemented with young adults with ID, who were between the ages of 13 and 24 and lived in the United States, indicated that these young adults not only used the SM platforms of Facebook, Instagram, Snapchat, and Twitter, but desired to increase their use of the platforms. Those who were non-users of specific platforms did not desire to use the platform in which they did not use. However, the majority of respondents reported perceiving (a) SM to be beneficial for all 12 benefits of SM use and (b) the platforms of Facebook, Instagram, and Snapchat as easy to use. According to TAM (Davis, 1989), this could indicate that non-users of these three platforms may choose to use the platforms in the future. Twitter was the least used platform and reported as hard to use. Therefore, using TAM, it could be predicted that Twitter non-users may not use Twitter in the

future. Facebook was the most used platform among respondents, Instagram the second, and Snapchat the third. While frequency of SM platform use within the past two days ranged from more than once to not at all, the majority of users for all four platforms reported using the platform more than once. Of the 13 SM safety risks, those related to hacked accounts (stolen password, hacked accounts, and hacked message inbox) were reported as risks in which combating strategies were unknown. Males and respondents of the high school age (13-18) reported not knowing combating strategies more frequently than females and those of PSE age (19-24). SM was perceived to be most beneficial for talking to friends and family, having fun, and learning new things and least beneficial for talking to others more and telling feelings to others. While some respondents learned about using SM from others, the majority did not. Those who did learn about SM use reported learning this from family members. Friends also played a major role in teaching SM use to these young adults. School did not have a major role in teaching SM use to these young adults. Relationships between several SM risk combating knowledge areas and learning SM use from family and school did exist. However, there were no significant relationships between total SM risk combating knowledge and learning SM use from school, friends, or family. Lastly, young adults with ID reported desiring to learn more about using SM. All of the above findings indicated that SM safety instruction would be beneficial for all young adults with ID, especially those who are male and of the high school age. Additionally, instruction should pertain to the SM platforms of Facebook, Instagram, and Snapchat.

Social Media Use of Young Adults with ID

Results of this study support and extend previous research that examined the social media use of young adults with ID (e.g., Ågren, Kjellberg, & Hemmingsson, 2018; Merells, Buchanan, & Waters, 2017; Caton & Chapman, 2016; Ramsten, et al., 2018; Sallafranque-St-Louis &

Normand, 2017; Schaafsma, et al., 2017; Shpigelman & Gill, 2014; Sorbring, et al., 2017). These studies also found that young adults with ID preferred to use the SM platform of Facebook, least preferred to use Twitter, and accessed SM platforms more than once a week. However, none of these studies examined the SM use of young adults with ID who live in the United States, Snapchat use, the frequency of SM platform use in time durations shorter than a week, and the desire young adults with ID have to use these platforms. This study extends this literature through examination of each of these variables.

Social Media Use Benefits

Study results also support a line of research that examined perceived benefits of young adults with ID using SM (e.g., Chadwick, Quinn, & Fullwood, 2016; Chadwick, Wesson, & Fullwood, 2013; Löfgren-Mårtenson, Molin, & Sorbring, 2018; Raghavendra, Hutchinson, Grace, Wood, & Newman, 2018; Sallafranque-St-Louis & Normand, 2017; Shpigelman, 2017; Sorbring, Molin, & Löfgren-Mårtenson, 2017). Similarly, this research has found social and learning opportunities to be the main benefits of these young adults using SM. However, all of the benefits to SM use provided in this research are not from the perceptions of young adults with ID. While few given benefits are from these young adults, the majority is given from parents, caretakers, teachers, and support staff. This study extends this literature by focusing solely on what young adults with ID perceive as benefits of SM use.

Perception of SM Use

Previous literature has identified that individuals have mixed feelings pertaining to young adults with ID using SM. The majority of these perceptions come from parents (Löfgren-Mårtenson, et al., 2015; Shpigelman, 2017), support staff (Löfgren-Mårtenson, et al., 2015; Löfgren-Mårtenson, et al., 2018; Shigelman, 2017), teachers (Molin, et al., 2015), and caregivers

(Chadwick, et al., 2016). The only perception given by young adults with ID was that using Facebook was positive and enjoyable (Shpigelman & Gill, 2014). This study extends this literature by solely investigating the perceptions of young adults with ID, examining perceived usefulness and ease of use across a variety of SM platforms, and using a large sample size. While aforementioned literature has identified perceptions of usefulness for these young adults, none were survey studies that gained the perspective of a large sample of young adults with ID and/or examined perceptions across a variety of SM platforms. In fact, the largest sample used in previous literature consisted of 58 adults with ID (Shpigelman & Gill, 2014). Additionally, Facebook was the focus of surveyed perceptions (Sallafranque-St-Louis & Normand, 2017; Shpigelman & Gill, 2014; Shpigelman,2017). Lastly, no literature has examined perceived ease of use for young adults with ID.

Knowledge Combating of SM Risks

Previous research has found that young adults with ID are aware of risks that can occur while using SM and already use strategies to combat these risks. Specific risks in which combating strategies were known included receiving unwanted or bothersome messages (Löfgren-Mårtenson, et al., 2015; Löfgren-Mårtenson, et al., 2018; Raghavendra, et al., 2018; Schaafsma, et al., 2017), requests to meet an online stranger in person (Löfgren-Mårtenson et al., 2015), and unwanted requests (Sallafranque-St-Louis & Normand, 2017). None of these studies were conducted with large samples, done in the United States, or used a self-report survey. Also, these studies did not examine knowledge of combating a variety of SM risks. Instead, the focus was only on a few risks. This study extends previous research by examining the combating knowledge of a variety of SM risks, as determined by Global Kids Online (2016), for a large sample of young adults with ID who live in the United States.

Support Needed

Previous research has indicated that SM use support and education is needed for young adults with ID (Lofgren-Martenson, et al, 2018; Molin, et al., 2017; Ramsten, et al., 2018; Shpigelman, 2017; Sorbring et al., 2017). Each of these studies were qualitative in nature, used small sample sizes, and resulted in findings that had limited generalizability across ages and genders. Similar to the findings of these studies, this study identified a need for SM safety instruction to be formed for young adults with ID. This study extends this previous literature by utilizing a survey with a large sample of various ages and gender, identifying specific groups of young adults with ID who may require more SM safety instruction, examining specific SM risks in which instruction is needed, and investigating of SM support needed for young adults with ID who live in the US.

Study 2. Results of study 2 indicated that a visual checklist paired with corrective feedback is an effective instructional strategy for teaching young adults with ID the SM safety skill of electronic message safety level identification. All participants had immediate improvements in their safety level identification accuracy, were able to generalize this skill into the platforms of Gmail, Facebook, Instagram, Twitter, and Snapchat, and maintained this skill two weeks later.

SM Instructional Interventions

Few research studies have investigated the effectiveness of interventions that support the SM use of young adults with ID. None of these studies have focused on developing instructional strategies that instruct SM safety skills to these young adults. In fact, previous research in this area has only focused on improving/increasing communication through SM use (Raghavendra, et al., 2015; Raghavendra, et al., 2018) and designing accessible interfaces that enable young adults

with ID to independently use SM (Davies, et al., 2015; Keskinen et al., 2012). These studies did implement instructional strategies to provide instruction or guidance to study participants. Of these strategies were that of prompting, task analysis, visual aids, scaffolding, and opportunities for practice. Each of these instructional strategies were used throughout this study, especially during the training session. This study supports this research by providing evidence that each of these instructional strategies are effective for teaching an SM instructional intervention to young adults with ID. The study extends this research by implementing these instructional strategies to instruct SM safety skills to young adults with ID.

Limitations

There are several limitations to this research that require readers to use caution when interpreting and generalizing results. In study 1, results were based on self-reporting. Therefore, results can contain bias, especially social desirability basis, and/or not be a true indication of the actual nature of a respondent's response. As the survey used in this study was purely online, there also are chances that individuals who did not meet specific inclusion criteria accessed the survey. Steps were taken to prevent this. However, individuals could still access the survey through inputting false responses. Caution also must be used when interpreting/generalizing the combating SM risks knowledge. While a young adult with ID may have knowledge of strategies to use when addressing specific SM safety risks, this may not reflect actions taken when risks occur. Practice scenarios of actions that would be taken when an SM risk arises, such as those used in study 2, would be beneficial for this. As this survey was done at one point in time with one sample, survey reliability is also a limitation. Lastly, results of this survey cannot be generalized into demographics other than gender and age.

Study 2 also had limitations that must be considered with interpreting results. First, a small sample size was used (n = 5). This sample consisted of only females who all had similar demographics, as well as previous experience with using SM and instruction in digital literacy. These characteristics result in low generalizability of results. Other limitations pertained to the usability of online simulations and SM platforms. The screen shot nature of messages with the online simulations did not allow for screen readers to be used. This resulted in the teacher having to read the messages to participants with reading deficits. The simulations also did not allow participants to access the profile of the sender of the message. One participant reported using the strategy of looking at a sender's profile to determine if a message sender was known. The inability to do this on simulations did result in frustrations for this participant, as well as prompting when prompting would have otherwise not been needed. During the generalization phase of the study, the platforms of Facebook, Instagram, and Twitter filtered out messages sent from accounts created solely for this study. This resulted in the teacher having to prompt participants to navigate to the filtered message portion of their direct messages. These prompts could be a possible limitation to the accuracy of participant responses. The last limitation of this study pertained to a participant's extreme desire for scam items. One participant stated knowing that a scam message was dangerous but responded to the scam message on the simulation incorrectly, due to desiring the scam item. This desire for scam items must be considered when interpreting results and using this intervention with other young adults with ID.

Future Research

Several areas in which future research is needed emerged from this research. First, replication of both studies in this dissertation is needed in order to enhance the generalizability of study findings. Participants of different demographics should be used. Results should also be

compared to the findings of these studies. The generalization of combating SM safety risk knowledge into actions taken when risks occur is another area where future research is needed. Surveys or simulations in which young adults with ID respond to risks should be formed to assess this. Caution must be used when pursuing this research. As many risks contain sensitive topics that could cause emotional or psychological harm, it is important to form this research in an ethical manner. Frequent contact and communication with an IRB is recommended. There is also room for research in the area of examining the SM safety content taught by teachers and family members. Surveys which assess this can be implemented with teachers and family members.

Currently, there is a lack of instructional strategies and resources that can be used when instructing SM safety to young adults with ID. Future research in this area is essential. Instructional strategies, in addition to the one formed in study 2 of this dissertation, must be formed and assessed for effectiveness. Generalization of skills learned through these strategies must also be analyzed with new SM platforms as they arise. Research that uses the VC and CF intervention across a variety of setting (e.g., school, home, residential programs, etc.) and with a variety of individuals acting as the teacher (e.g., family members, friends, caretakers, mentors, support staff, etc.) is also needed.

Summary and Conclusions

Study 1 of this dissertation found that young adults with ID are already using SM, perceive SM to be useful, desire to increase their use of SM, and desire to learn more about using SM. Additionally, there are SM safety risk areas in which these young adults do not know combating strategies. The majority of young adults with ID are not receiving instruction pertaining to SM use and school is not a major provider of the given SM instruction. These

findings indicate a critical need for the development and implementation of SM safety instruction for young adults with ID within educational settings. By not providing SM safety instruction to these young adults, we are placing them at higher risk of being a victim or perpetrator to online dangers. One incorrect response to an SM risk can result in detrimental harm to a young adult with ID. Through the creation and implementation of SM safety education and resources specifically formed for these young adults, we can prevent this harm from occurring.

This dissertation is not only the beginning of the formation of SM safety instructional strategies for young adults with ID, but also a call to action for educators and researchers. Results from study 2 of this dissertation provide evidence that young adults with ID can learn SM safety skills, as well as apply these skills to make appropriate decisions when addressing risks on SM platforms. As educators and researchers, we need to begin providing effective SM safety instruction to these young adults. We need to equip these young adults with the knowledge and skills needed to make informed and appropriate decisions when addressing SM risks that arise. It is time to empower these young adults with safe SM use by giving them the knowledge needed to address SM risks.

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Appendices

Appendix A

Literature Review Included Studies and Themes

Authors (Year)	Country of Origin	Design Used	Participants	Findings
Schaafsma, Kok, Stoffelen, & Curfs (2017)	Netherlands	Qualitative: Semi-structured interviews	20 Participants with ID aged 15-52. 10 participants were young adults.	Majority had Facebook accounts. None used Twitter. All participants disposed of unwanted sexual messages by blocking and deleting sender.
Merells, Buchanan, & Waters (2017)	Australia	Qualitative: Semi-structured interviews with phenomenological approach	10 young adults with ID aged 18-24	3 participants used SM or Facebook to communicate with others. One was not allowed to have SM by family.
Ågren, Kjellberg, & Hemmingsson (2018)	Sweden	Qualitative: Observations and follow up interviews	15 young adults with mild to moderate ID aged 13-25	Participants had difficulty with reading, writing, spelling, passwords/usernames, and using updated versions of applications. Participants utilized strategies to overcome these barriers.
Molin, Sorbring, & Löfgren-Mårtenson, (2015)	Sweden	Qualitative: Semi-structured focus groups	13 parents and teachers of young adults with ID	Participants felt SM allowed greater access to society and chances to create non-stigmatized self-presentations. Noted that young adults never mentioned their disability on SM. Teachers expressed more anxiety of SM risk than parents.

Molin, Sorbring, & Löfgren-Mårtenson, (2017)	Sweden	Qualitative: Semi-structured interviews	27 high school students with ID aged 16 to 20	Participants were aware of risks that could occur with SM use and stated ways to combat risks that arise. Desire to form authentic relationships on SM, use SM like everyone else, and have more support for the emotions that come with SM use from adults. Felt one missed out on vital life experiences if they did not use SM.
Löfgren-Mårtenson, Sorbring, & Molin (2015)	Sweden	Qualitative: Semi-structured focus group interviews	8 professionals and 5 parents of young adults with ID who were aged 18-20	Participants felt that SM was a good place to go when young adults with ID felt lonely. Also allowed these young adults to show they are "normal." Parents felt that the SM benefits outweighed the SM risks. Professionals had more anxiety about SM risks. Stated that young adults handled unwanted sexual messages by immediately blocking the sender.
Sorbring, Molin, & Löfgren-Mårtenson, (2017)	Sweden	Qualitative: Semi-structured interviews	22 guardians of young adults with ID who were aged 16-22	Participants stated that young adults with ID needed help with new and updated applications. Parents had anxiety about their young adult being more excluded from society by not using SM. Young adults used SM to contact family and friends. Parents support the SM use through guidance, discussions, and being present on SM. Parents have a desire for educators to using teaching methods to spark curiosity and interest in SM use in their young adult.

Löfgren-Mårtenson, Molin, & Sorbring (2018)	Sweden	Qualitative: Semi-structured interviews	17 professionals who work with youth adults with ID and were aged 16-21	Participants either felt that SM use was important for the relationships of young adults with ID or a negative place with many risks. Some control the young adult's SM use, while others give them more freedom with SM use. Stated that the young adult deals with unknown friend requests by blocking the sender. Desire further education, strategies, and policies in helping these young adults with the risks that occur on SM.
Ramsten, Martin, Dag, & Hammar (2018)	Sweden	Qualitative: Semi-structured interviews	11 participants with ID aged 22 to 31	Participants used SM for maintaining friendships and developing new ones and checked SM accounts throughout the day. Strategies were used to overcome barriers to SM use. Indicated there was a lack of support for SM use.
Darragh, Reynolds, Ellison, & Bellon (2017)	Australia	Qualitative: Semi-structured interviews	30 adults with ID aged 20-66. The majority of participants were 20-30	SM was used by participants to create new friends and maintain existing friendships. Felt that SM could be used to alleviate loneliness. Some participants were prevented/prohibited to use SM by a family member due to safety concerns.
Shpigelman (2017)	Israel	Qualitative: Semi-structured interviews	16 family members and direct support staff of people with ID who used Facebook at least once a week.	Majority supported the use of Facebook and believe it has many benefits for individuals with ID. Benefits include society inclusion, keeping in touch with others, allowing for them to feel "normal," and share interests. There were concerns of privacy, security, and addiction. Lack of support for SM use was noted. Support staff felt the need for there to be more training and support

				so they could help their clients who have an ID use SM.
Jenaro, Flores, Cruz, Perez, Vega, & Torres (2018)	Spain	Survey	216 young adults with ID attending 3 vocational training centers. 410 university students without ID	56% of participants without ID used Facebook, 19.4% Twitter, 25% Instagram, 8.3% other, 4.6% Flickr, and 81% YouTube. This use was comparable to the SM use of participants without ID.
Chadwick, Quinn, & Fullwood (2016)	United Kingdom	Survey	166 of general population without ID	Greatest risks to SM use for individuals with ID were that of bullying, being victims of threats or harassment, providing too much information to others, and being susceptible to scams. The highest rated benefits included keeping in contact with others, providing opportunities to learn about further educational and work opportunities, allowing for participation in support groups, and enabling these individuals to access and use advice from others.
Chiner, Gómez-Puerta, & Cardona-Moltó (2017)	Spain	Survey	77 adults with ID aged 18-51. 68 caregivers	Reported that individuals with ID have been blocked, told unpleasant things, insulted, flirted with against their will, had someone use their password without their consent, and received pictures or videos that were sexual in nature. Have been informed of these individuals insulting others online, telling others unpleasant things, and being blocked. The individuals with ID stated that they have blocked someone, said unpleasant things to

				others, insulted others, threatened someone, used someone else's personal information, and sent sexual pictures or videos without consent.
Chiner, Gómez-Puerta, & Cardona-Moltó (2017)	Spain	Survey	44 caregivers	Majority identified the internet as unsafe for adults with ID. 100% felt it was unsafe for minors with and without an ID. 48% felt unprepared to deal with risks that occurred with SM use. Worried that these individuals who be asked for pictures or information, told unpleasant things, and sent pictures or videos that were sexual in nature.
Shpigelman & Gill (2014)	Israel	Survey	58 American adults with ID and were over 18	Majority of participants used Facebook at least once a day from their own devices and without the assistance of a caregiver. 68% felt more comfortable talking with people on Facebook rather than face-to-face. Facebook made them feel like everyone else. Used Facebook to play games, show identity, chat with friends when feeling lonely, get emotions out, and improve reading skills.
Shpigelman & Gill (2014)	Israel	Survey	172 American adults with a disability and were over 18. Of these participants, 34 identified as having ID.	Majority of participants used Facebook at least once.

Davies, Stock, King, Brown, Wehmeyer, & Shrogen (2015)	United States	Mixed Methods: Interviews and calculation of task performance	12 adults with ID aged 20-45	Majority completed five Facebook tasks with three or fewer prompts/errors per task. Mainstream Facebook was complex and had too much screen clutter. Step by step prompts to use mainstream Facebook.
Sallafranque-St-Louis & Normand (2017)	Canada	Mixed Methods: Interviews and survey	8 participants aged 19-40. 5 participants had a mild ID.	Facebook was the preferred platform for participants. Friends of Facebook ranged from 20-400. Used SM to stay in touch with others, be entertained, and receiving emotional support. 6 had been insulted, mocked, threatened, or had unwanted sexual solicitation.
Keskinen, Heimonen, Turunen, Rajaniemi, & Kauppinen (2012)	Finland	Mixed Methods: Interviews, observations, and survey	9 participants with an ID aged 14-37	The speed of participant communication was increased. While participants indicated that it was fun to use, come thought it was hard because symbols were unknown or could not be located. Participants said no and refused to these requests.
Kydland, Molka-Danielsen, & Balandin (2012)	Norway	Mixed Methods: Interviews and loneliness scale ratings	12 adults with ID aged 20-56	Majority had positive experience. Facebook was preferred over Flickr. 5 participants had reduced loneliness and lower social dissatisfaction.
Raghavendra, Hutchinson, Grace, Wood, & Newman (2018)	Australia	Sequential mixed-methods: Single group pre/post design with interview after	9 participants aged 10-21 who had disability. 4 participants with ID	Majority of participants achieved above set communication goals and increased in number of online communication partners. Increase in word recognition, social connectedness, and independent SM use. Parents expressed desire for cyber safety information coming from third party.

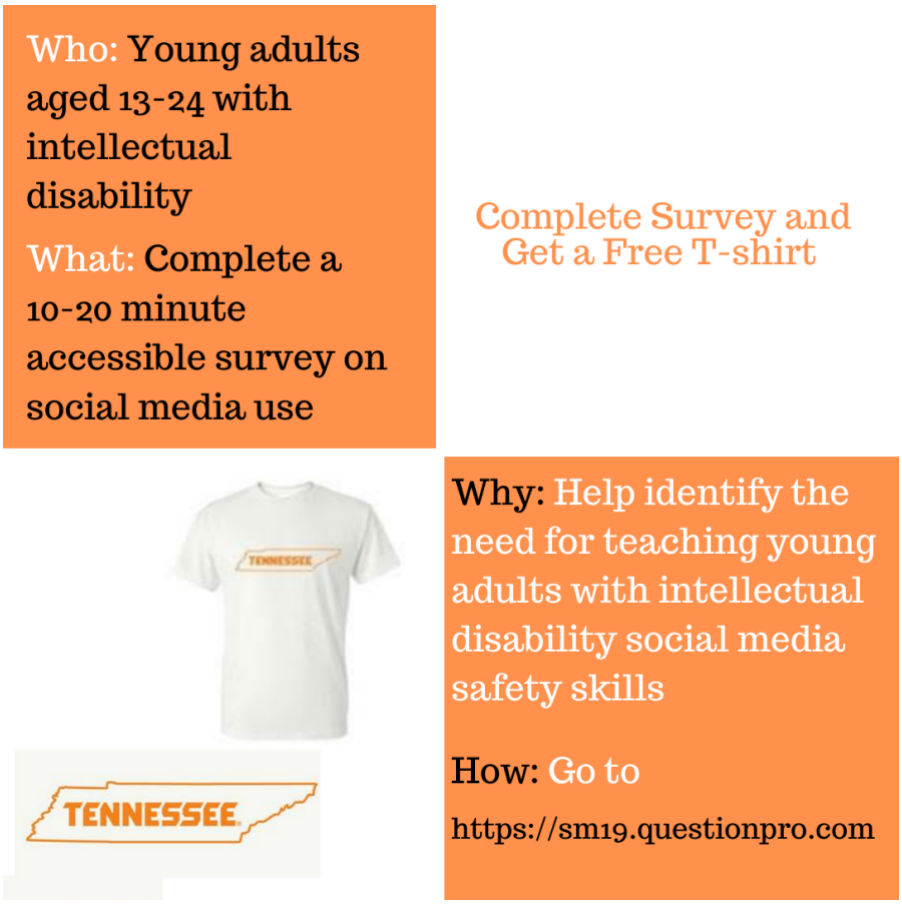
		administration of intervention		
Raghavendra, Newman, Grace, & Wood (2015)	Australia	Sequential mixed-methods: Single group pre/post design with interview after administration of intervention	8 participants aged 11-17. 5 participants with ID.	Majority of participants achieved above set communication goals and increased in independent SM use. Benefits to SM use included allowing for communication in an age appropriate manner that could be done through visual means, more frequent communication, increased confidence in communication skills.
Caton & Chapman (2016)	United Kingdom	Literature Review		Barriers to SM use included safety, communication and literacy skills, cyber language/etiquette, and accessibility. Access by individuals with ID varies and support is needed. Allowed for increased ability to making and maintaining friendships.
Chadwick, Wesson, & Fullwood, (2013)	United Kingdom	Literature Review		Barriers to access included societal attitudes/exclusion, policy and governmental support, and lack of support education & training. Potential benefits included enabling social relationships, expressed identity, reducing stigma, self-determination, and advocacy.

Authors/Year	Benefits	Risks	Perception of Use	Actual Use	Barriers	Support Needed	Interventions
Schaafsma et al. (2017)		X		X			
Merells et al. (2017)				X	X		
Ågren et al. (2018)				X	X		
Molin et al. (2015)	X		X		X		
Molin et al. (2017)		X		X		X	
Löfgren-Mårtenson et al. (2015)	X	X	X	X	X		
Sorbring et al. (2017)	X	X		X	X	X	
Löfgren-Mårtenson et al. (2018)	X	X	X	X	X	X	
Ramsten et al. (2018)				X	X	X	
Darragh et al. (2017)	X			X	X		
Shpigelman (2017)	X	X	X		X	X	
Jenaro et al. (2018)				X			
Chadwick et al. (2016)	X	X	X				

Chiner et al. (2017)		X		X			
Chiner et al. (2017)		X			X	X	
Shpigelman & Gill (2014)	X		X	X		X	
Shpigelman & Gill (2014)				X			
Davies et al. (2015)					X		X
Sallafranque-St-Louis & Normand (2017)	X	X		X			
Keskinen et al. (2012)	X						X
Kydland, Molka-Danielsen et al. (2012)					X		
Raghavendra et al. (2018)	X	X				X	X
Raghavendra et al. (2015)	X						X
Caton & Chapman (2016)	X			X	X		
Chadwick et al. (2013)	X				X		
Totals	14	11	6	15	14	8	4

Appendix B

Survey Recruitment Information Graphic



Appendix C

Gatekeeper Recruitment Email

My name is Mary Jo Krile and I am a doctoral candidate at the University of Tennessee, Knoxville. For my dissertation, I am seeking to gain information that will help me identify the need for social media/cyber safety instruction to be given to young adults with intellectual disability. As you work with young adults with intellectual disability, I am seeking your help in identifying potential respondents for the survey I have created. Should you agree to help me with this endeavor, you will receive a free t-shirt.

Your assistance will consist of identifying individuals who are (a) between the ages of 13 and 24 and (b) receive agency and/or special education services under the category of intellectual disability. Once individuals have been identified, you will email their parent/guardian the attached recruitment email that contains information about this study, as well as the link to the anonymous survey. For young adults who are between the ages of 18-24 and their own legal guardian, please forward, or give them, a copy of the recruitment graphic that is attached to this email. For participation, respondents will also receive a free t-shirt.

If you have any questions about assisting with this project, please feel free to email me at: mkrile1@vols.utk.edu. I am more than happy to answer any questions you may have!

If you would like to assist in this project, please complete the contact information at the following link to receive your free t-shirt: https://freetshirtinfo.questionpro.com

Thank you in advance for your assistance and time!

Appendix D

Guardian Recruitment Email

My name is Mary Jo Krile and I am a doctoral candidate at the University of Tennessee, Knoxville. For my dissertation, I am seeking to gain information that will help me identify the need for social media/cyber safety instruction to be given to young adults with intellectual disability. If your child receives agency and/or special education services under the category of intellectual disability and is between the age of 13 and 24, they are eligible to complete the survey. For their participation they will receive a free t-shirt. The survey is located at the following link: https://sm19.questionpro.com

If you decide to let your child participate in this study, they will be asked to complete an online survey that should take 10-30 minutes to complete. This survey has been created to allow your child independent completion. Response options are limited to no more than 3 options, all responses contain pictorial images, enlarged text is used, the amount on one page is limited, all questions and responses have audio that your child can play to have the items read aloud, and video modeling directions are embedded on the presentation of questions that use new formatting. All responses to this survey are anonymous. Information for the free t-shirt are given in a separate link that is in no way connected to the responses given in the survey.

Your child's participation in this evaluation is voluntary. The following link contains an informed consent for you to view. After you have viewed the consent form and agreed for your child to participate, you will be asked to confirm if your child meets the criteria for this study. Once these questions are answered, your child will be presented with a consent form that contains a video which explains the consent form to them.

If you have any questions about participating in this survey, please feel free to email me at: mkrile1@vols.utk.edu. I am more than happy to answer any questions you may have!

Thank you in advance for your assistance and time!
Survey Link: https://sm19.questionpro.com

Appendix E

Social Media Recruitment Post

If you know any parents/guardians of young adults (aged 13-24) with intellectual disability, or have any contacts who do, please share this post!
Seeking young adults (aged 13-24) with intellectual disability for survey completion!

My name is Mary Jo Krile and I am a doctoral candidate at the University of Tennessee, Knoxville. I am seeking to gain information that will help me identify the need for social media/cyber safety instruction to be given to young adults with intellectual disability. If your child receives agency and/or special education services under the category of intellectual disability and is between the age of 13 and 24, they are eligible to complete the survey. For their participation they will receive a free t-shirt!

The survey was created to be accessible to your child. Picture responses, audio read aloud options, and video directions are used to allow your child independent completion. The following link contains an informed consent for you to view. After you have viewed the consent form and agreed for your child to participate, you will be asked to confirm if your child meets the criteria for this study. Once these questions are answered, your child will be presented with a consent form that contains a video which explains the consent form to them. After they have agreed to participate in the survey, the survey will begin.

The survey is located at the following link: https://sm19.questionpro.com

Appendix F

Survey Protocol

Social Media Survey for Young Adults with Intellectual Disability

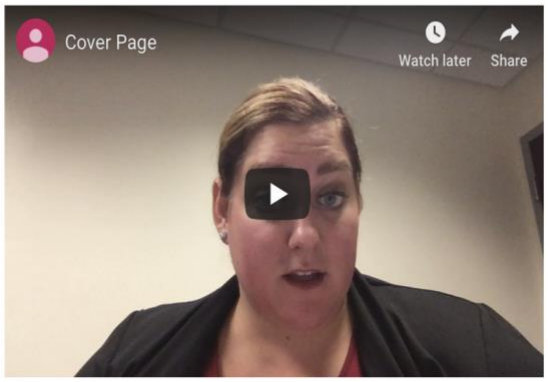
32 Questions (51 Prompts)

Mary Jo Krile

Appendix G

Survey Introduction Cover Page

WELCOME TO THE SOCIAL MEDIA SURVEY FOR YOUNG ADULTS WITH INTELLECTUAL DISABILITY!

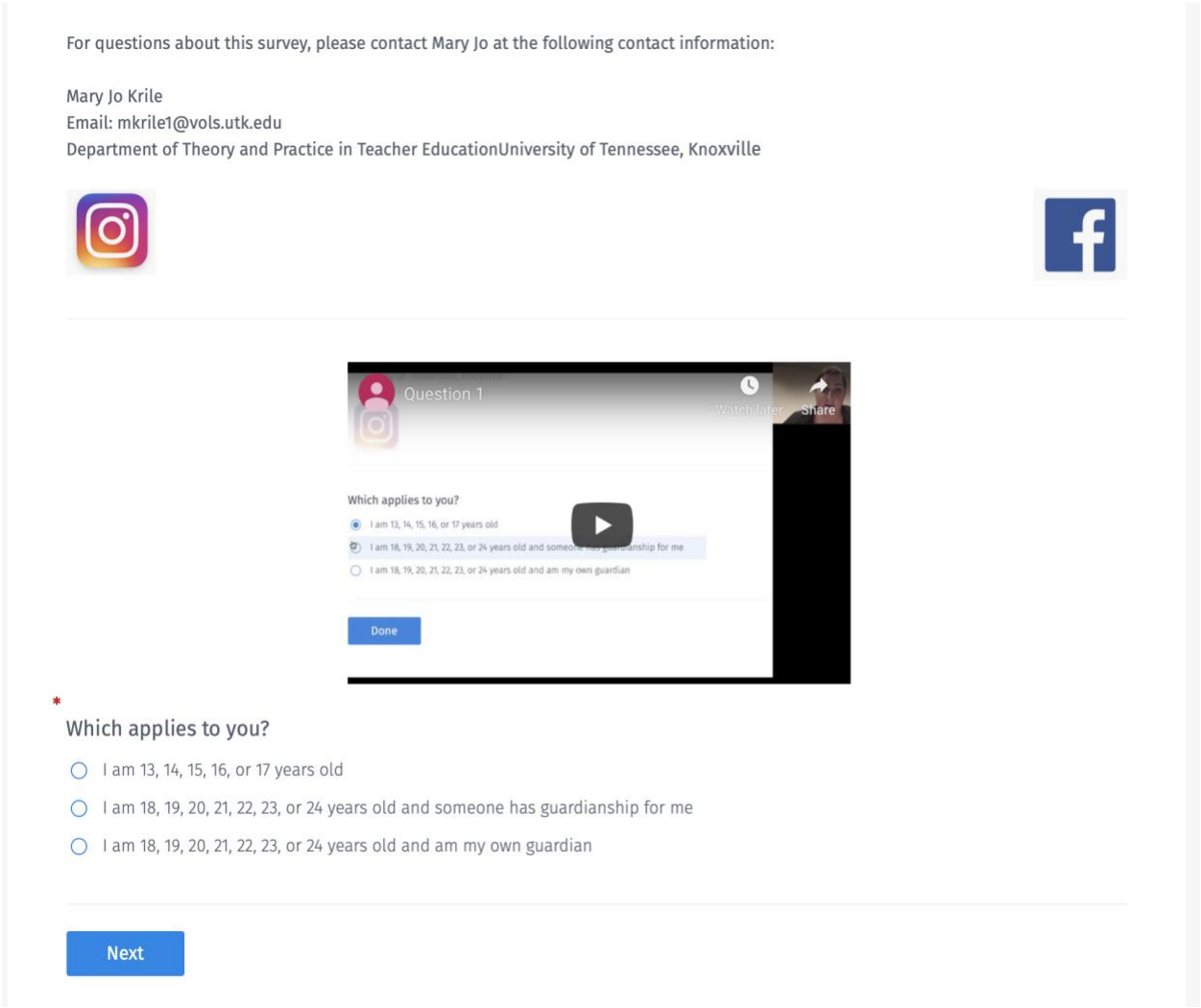


Thank you for your interest in taking the social media survey! Your help is needed to help identify the need for social media safety instruction to be given to young adults with intellectual disability. Your responses are greatly appreciated! For your responses, you will earn the following T-shirt. A link to the form for your mailing address and T-shirt size will be given on the last page of this survey. The second shipment of T-shirts will be mailed out in late February! Thank you again for your help! It is appreciated!

UPDATE: SURVEY WILL CLOSE ON FEBRUARY 14th AND REOPEN ON MARCH 12th!



Video Transcript: “Welcome to the social media survey for young adults with intellectual disability. I want to thank you for your time and interest in taking this survey. Your responses will help me identify the need for social media safety to be given to young adults with intellectual disability. This survey will ask you questions about your knowledge of handling social media risks, your thoughts about social media, and your general use of social media. Your responses are greatly appreciated and for your time you will be given a free t-shirt. On the last page of the survey, you will be giving a short link that you will click and in that link you will enter your t-shirt size and your mailing address. Your t-shirt will be sent to you in January. I will also be collecting responses on the survey until January. Thank you again for your time. It is greatly appreciated. If you have any questions at all, you can reach me at the email below this text. To begin the survey, you will start with the first question at the bottom of this page. Thank you again for your time.”



Video Transcript:

“For this first question, you will select the option that best applies to you. In this video, I will read each opt option and describe what will happen when you select each option. The first option you must select if you are 13, 14, 15, 16, or 17 years old. To select that you'll put your cursor over the button next to that option, click on it so it highlights blue, and click done. That will take you to a parent consent form, where your parent will give you consent to access the survey. Then, you will have access to the survey. If you are not between 13 and 17 years old, you will look at the next two options. If you are 18, 19, 20, 21, 22, 23, or 24 years old and someone has guardianship over you, you will select this option. Guardianship means that you have a parent who signs your legal paperwork for you and gives consent for you to participate in research. When you select this option, you place your cursor on the button next to this option, click on it so it highlights blue, and click done. That will take you to a parent consent form, where your parents will give you consent to access the survey. Then you can access the survey. If that does not apply to you, you will look at that last option. This is if you are 18, 19, 20, 21, 22, 23, or 24 years old and you are your own guardian. If you are your own guardian, you can sign your own legal paperwork and you can give your own consent for participating in research. If this applies to you, you will select that option and click done. That will take you to your own consent form, where you will give consent to take this survey. Then you will begin the survey. Each question section of this survey will have video directions just like the one you see here. There will also be picture responses for you to use and read upload options. Again,
thank you for taking your time for doing this survey. I appreciate it.”

Appendix H

Guardian Consent

Research Study Title: Social Media Use of Young Adults with Intellectual Disability

Researcher(s): Mary Jo Krile, University of Tennessee, Knoxville Dr. David Cihak, University of Tennessee, Knoxville

We are asking your child to be in this research study because they are between the ages of 13 and 24 and have an intellectual disability. The information in this consent form is to help you decide if you want your child to be in this research study. Please take your time reading this form and contact the researcher(s) to ask questions if there is anything you do not understand.

Why is the research being done?

The purpose of the research study is to gain the following information about young adults with intellectual disability: (a) current knowledge of combating social media risks; (b) perceptions of social media; (c) desire to use social media; and (d) amount of social media use.

What will I do in this study?

If you agree for your child to be in this study, they will complete an online survey. The survey includes questions about their knowledge of social media risks, perceptions of social media, desire to use social media, and current use of social media. The survey should take them about 10 to 30 minutes to complete. They can skip questions that they do not want to answer. The survey is also formed to be accessible so that your child can complete it as independently as possible. Choice options are limited to no more than three options, responses use pictorial images, all response options and questions include audio recordings where your child can have it read aloud to them, and video modeling directions are given for each new question format.

Can I say "No"?

Your child being in this study is up to you. They can stop up until they submit the survey. After they submit the survey, we cannot remove their responses because we will not know which responses came from them.

Are there any risks to me?

We don't know of any risks your child would experience from being in this study.

Are there any benefits to me?

We do not expect your child to benefit from being in this study. Their participation may help us learn more about how young adults with intellectual disabilities use social media and identify if

there is a need for social media instruction to be implemented with young adults with intellectual disability. We hope the knowledge gained from this study will benefit others in the future.

What will happen with the information collected for this study?

The survey is anonymous, and no one will be able to link your child's responses back to them. Their responses to the survey will not be linked to your/their computer, email address or other electronic identifiers. Information provided in this survey can only be kept as secure as any other online communication.

Information collected for this study will be published and possibly presented at scientific meetings.

Will I be paid for being in this research study?

For your child's participation in this survey, they will receive a free t-shirt. To receive this t-shirt, they must insert their name, mailing address, and t-shirt size in the link provided on the Thank You page of the survey. This link is in no way connected to their survey responses. This will ensure that their responses are entirely anonymous. T-shirts will be mailed out in January.

Who can answer my questions about this research study?

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, Mary Jo Krile. Her email is mkrile1@vols.utk.edu. You may also contact her faculty advisor, Dr. David Cihak. His email is dcihak@utk.edu.

For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board
The University of Tennessee, Knoxville 1534 White Avenue
Blount Hall, Room 408
Knoxville, TN 37996-1529
Phone: 865-974-7697
Email: utkirb@utk.edu

Statement of Consent

I have read this form, been given the chance to ask questions and have my questions answered. If I have more questions, I have been told who to contact. By clicking the "I Agree" button below, I am agreeing for my child to be in this study. I can print or save a copy of this consent information for future reference. If I do not want my child to be in this study, I can close my internet browser.

Inclusion Criteria Confirmation Questions: A response of "no" on one of these questions resulted in termination of the survey.

* Does your child receive agency and/or special education services under the category of an intellectual disability?

- ◯ Yes
- ◯ No

* Is your child between the ages of 13 and 24?

- ◯ Yes
- ◯ No

Appendix I

Participant Consent

Research Study Title: Social Media Use of Young Adults with Intellectual Disability

Researcher(s): Mary Jo Krile, University of Tennessee, Knoxville Dr. David Cihak, University of Tennessee, Knoxville

We are asking you to be in this research study because you are between the ages of 13 and 24 and have an intellectual disability. The information in this consent form is to help you decide if you want to be in this research study. Please take your time reading this form and contact the researcher(s) to ask questions if there is anything you do not understand.

Why is the research being done?

The purpose of the research study is to gain information about how young adults use social media, their perspectives of using social media, and knowledge of combating risks that occur with social media use.

What will I do in this study?

If you agree to be in this study, you will complete an online survey. The survey includes questions about your knowledge of social media risks, perceptions of social media, desire to use social media, and current use of social media. The survey should take you about 10 to 30 minutes to complete. You can skip questions that you do not want to answer.

Can I say "No"?

Being in this study is up to you. You can stop up until you submit the survey. After you submit the survey, we cannot remove your responses because we will not know which responses came from you.

Are there any risks to me?

We don't know of any risks to you from being in the study.

Are there any benefits to me?

We do not expect you to benefit from being in this study. Your participation may help us learn more about how young adults with intellectual disabilities use social media and identify if there is a need for social media instruction to be implemented with young adults with intellectual disabilities. We hope the knowledge gained from this study will benefit others in the future.

What will happen with the information collected for this study?

The survey is anonymous, and no one will be able to link your responses back to you. Your responses to the survey will not be linked to your computer, email address or other electronic identifiers. Information provided in this survey can only be kept as secure as any other online communication.

Information collected for this study will be published and possibly presented at scientific meetings.

Will I be paid for being in this research study?

For your participation in this survey, you will receive a free t-shirt. To receive this t-shirt, you must insert your name, mailing address, and t-shirt size in the link provided on the Thank You page of the survey. This link is in no way connected to your survey responses. This will ensure that your responses ar entirely anonymous. T-shirts will be mailed out in January.

Who can answer my questions about this research study?

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, Mary Jo Krile. Her email is mkrile1@vols.utk.edu. You may also contact her faculty advisor, Dr. David Cihak. His email is dcihak@utk.edu.

For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board
The University of Tennessee, Knoxville 1534 White Avenue
Blount Hall, Room 408
Knoxville, TN 37996-1529
Phone: 865-974-7697
Email: utkirb@utk.edu

Statement of Consent

I have read this form, been given the chance to ask questions and have my questions answered. If I have more questions, I have been told who to contact. By clicking the "I Agree" button below, I am agreeing to be in this study. I can print or save a copy of this consent information for future reference. If I do not want to be in this study, I can close my internet browser.

Consent Video Transcript: “Hi, my name is Mary Jo. I appreciate you taking the time to complete this short survey about how you use social media, how you want to use social media, and your perceptions and feelings about using social media. Your responses are important to me because they will help me determine if social media should be taught to young adults with intellectual disabilities. In this video, I'm going to be discussing the information you see written below this video. This information provides other information about the survey you are about to complete and what will happen to responses you give in this survey. I will explain this information to you, or you can go below and read it on your own. The survey you are about to complete has 32 questions. They are all multiple choice and the survey should take you no longer than 10 to 30 minutes to complete. I have included videos picture responses and audio to help you complete the survey on your own. If at any point, you would like to take a break, you can leave your survey open and return to it when you return. You can skip any questions you do not want to answer. You can also stop taking the survey at any time. There are no known risks that you would experience from taking this survey. You may also not benefit from completing the survey. However, I do hope that information you provide me will benefit young adults with intellectual disability who would like to use social media want to learn more about using it. The survey is completely anonymous. I will not be collecting your name, email address, phone number, or any other personal information in this survey. Therefore. I will not know what responses you have entered once you have submitted your survey. I will not be able to remove your responses because I do not know which responses you have entered. Being in this survey is completely up to you. It's voluntary, so you can decide to not complete the survey, or you could decide to complete it. For completing the survey, you do get a free t-shirt. To get your free t-shirt, you will be provided with a short link at the last page of the survey. This link, you will click to open the form and you will provide your contact information. You'll provide your name, your mailing address, and your t-shirt size. The contact information you provide on that link is in no way connected to this survey. So, I will not be able to see what responses you have entered. Your t-shirt will be mailed out to you in January. Again, I want to thank you for your time and responses. It means a lot to me that you are taking this time to help me with this important matter. If you have any questions or concerns, about this survey my contact information is at the bottom of this screen. There is also the contact information of other people you can contact. To find this information, you can scroll to the bottom of the screen and you will see two email addresses, as well as another address with phone number and email address. You can contact any of those people if you have any concerns or questions about this survey. If you understand the information you are given in this video and you agree to complete this survey, you can scroll all the way down to the bottom of this page. There is a question that says, do you agree to participate in this survey? If you agree you will click Yes and then you will click the next button. That will take you to the first question of the survey. If you do not want to agree to complete this survey, you will click No and then you will click Next. Here, you will be provided with the link that you can go to to fill out a form for your free t-shirt. Again, I want to thank you for taking the time to complete this survey. It means a lot to me. I hope you have fun completing the survey and I look forward to sending you your free t-shirt. Thank you.”

Appendix J

Survey Directions

Directions for Questions 1-4:

(*IN VIDEO MODELING CLIP WITH CAPTIONS)*

"The first few questions will look like the question you see here. All questions on the survey will have a play button next to it that you can press that play to have the question read out loud to you. Or, you can read the question to yourself. Once you have read the question, you will go find your response, click it, and then click the Next button to get to the next question. If I were to answer this question, it would look something like this. I would read the question, I know what to do if someone said something mean to me on social media. First, I will think about if I knew what to do if something mean is said to me on social media. If I don't know what to do, I will find the No response with the red X and click it. If I do know what to do, I will find the Yes response with the green checkmark and click it. Let's say that I don't know what to do if somebody says something mean to me on social media. So, I'm going to find the No response. Once I have found my response and clicked it, the circle will fill in blue. Once that is blue, I will go down to the blue Next button and click it to get to the next question. You will follow this process for the next 12 questions."

Directions for Questions 5-18:

(*IN VIDEO MODELING CLIP WITH CAPTIONS)*

"The next three questions are similar to the questions you just finished, except there is a new question. This question is that of I think social media is good for telling others how I feel. Again, there is a play button here that will read you the question for you. When you answer this question, you will think about if social media is good for telling others how you feel. Let's say I do think social media is good for telling others how I feel. If I feel this way, I will find the Yes response with the green checkmark and fill in the click the circle below it. After I'm done with that, I will click the blue Next button to get to the next question. If I don't think social media is good for telling others how I feel, I will find the No response with the red X, click it, and then click on the blue Next button to get the next question. The next 11 questions will use these same directions."

Directions for Rest of Survey Questions:

(*IN VIDEO MODELING CLIP WITH CAPTIONS)*

"The rest of the questions on the survey are going to be multiple-choice. To answer them, you will read the question and then select the answer you think best applies to you. For example, this question says do you use Facebook? To answer that question, you'll click No if you do not use Facebook and Yes if you do use Facebook. Let's say I do have a Facebook. If I do, I will click Yes and then I'll put my mouse on the blue Next button and go to the next question of the survey.

If I do not have a Facebook, I will click No, the blue Next button, and go to the next question of the survey. Again, if you want to hear the question read to you, you can click the play button next to the question. Some of the multiple-choice questions do have play buttons next to the responses. You can click those play buttons to hear what that response is. You will follow these directions for the next the rest of the survey."

Appendix K

Survey Items



URL : https://youtu.be/d6YYysBPNSM

I would know what to do if someone said something mean to me on social media.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone on social media told me to do something I didn't want to do.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone tried to sell me something on social media.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone on social media got my password.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone I don't know asked for pictures of me on social media.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone on social media sent messages as me.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone I don't know sent me a message on social media and asked me to meet them in person.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone I don't know tried to talk to me on social media.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone I don't know added me as a friend on social media.

- ○ ✗ No
- ○ ✓ Yes

I would know what to do if someone got into my social media account without my permission.

- ○ ✗ No

○ ✓ Yes

I would know what to do if someone on social media kept bothering me.

○ ✗ No

○ ✓ Yes

I would know what to do if someone on social media sent me something that made me uncomfortable.

○ ✗ No

○ ✓ Yes

I would know what to do if someone on social media asked me for personal information (phone number, email, address, social security number, credit card number, debit card number).

○ ✗ No

○ ✓ Yes

I think social media is good for telling others how I feel.

- ○ ✗ No
- ○ ✓ Yes

I think social media is good for showing others who I am.

- ○ ✗ No
- ○ ✓ Yes

I think social media is good for finding information.

- ○ ✗ No
- ○ ✓ Yes

I think social media is good for talking to friends and family.

- ○ ✗ No
- ○ ✓ Yes

I think social media is good for finding new friends.

○ ✗ No

○ ✓ Yes

I think social media is good for finding people who are like me.

○ ✗ No

○ ✓ Yes

I think social media is good for talking to others when I feel lonely.

○ ✗ No

○ ✓ Yes

I think social media is good for helping me talk to others more.

○ ✗ No

○ ✓ Yes

I think social media is good for seeing what others are doing.

- ○ ✗ No
- ○ ✓ Yes

I think social media is good for getting support from others.

- ○ ✗ No
- ○ ✓ Yes

I think social media is good for learning new things.

- ○ ✗ No
- ○ ✓ Yes

I think social media is good for having fun.

- ○ ✗ No
- ○ ✓ Yes

***All Social Media Platform Use questions follow the branching logic provided in the next two comments. If “no” branched to “would you like to use Facebook” and ease of use question.

If “yes, “go to amount of use question and desire to use Facebook more question. Then, branched to ease of use question. ***



URL : https://www.youtube.com/watch?v=XT2iz63RkCU&feature=youtu.be

Do you use Facebook?

- ○ ✗ No
- ○ ✓ Yes

In the past two days, how many times have you been on Facebook?

- ○ ✗ Not at all
- ○ 2+ More than once
- ○ 1 Once

Would you like to use Facebook more?

- ○  No
- ○  Yes

Would you like to use Facebook?

- ○  No
- ○  Yes

I think Facebook is

- ○  Hard to use
- ○  Easy to use



Do you use Instagram?

- ○ ✗ No
- ○ ✓ Yes

In the past two days, how many times have you been on Instagram?

- ○ ✗ Not at all
- ○ 1 Once
- ○ 2+ More than once

Would you like to use Instagram more?

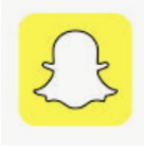
- ○ ✗ No
- ○ ✓ Yes

Would you like to use Instagram?

- ○ ✗ No
- ○ ✓ Yes

I think Instagram is

- ○ ✗ Hard to use
- ○ ✓ Easy to use



Do you use Snapchat?

- ○ ✗ No
- ○ ✓ Yes

In the past two days, how many times have you been on Snapchat?

- ○ ✗ Not at all
- ○ 1 Once
- ○ 2+ More than once

Would you like to use Snapchat more?

- ○ ✗ No
- ○ ✓ Yes

Would you like to use Snapchat?

- ○ ✗ No
- ○ ✓ Yes

I think Snapchat is

○ ✗ Hard to use

○ ✓ Easy to use



Do you use Twitter?

○ ✗ No

○ ✓ Yes

In the past two days, how many times have you been on Twitter?

○ ✗ Not at all

○ 1 Once

○ 2+ More than once

Would you like to use Twitter more?

- ○  No
- ○  Yes

Would you like to use Twitter?

- ○  No
- ○  Yes

I think Twitter is

- ○ Hard to use 
- ○ Easy to use 

How old are you?

- ○ 13
- ○ 14
- ○ 15

- ○ 16
- ○ 17
- ○ 18
- ○ 19
- ○ 20
- ○ 21
- ○ 22
- ○ 23
- ○ 24

What is your gender?

- ○  Male
- ○  Female
- ○  Prefer not to answer

Did you learn how to use social media in school?

- ○  No

○ ✓ Yes

Has a family member or guardian helped you learn to use social media?

○ ✗ No

○ ✓ Yes

Has a friend helped you learn to use social media?

○ ✗ No

○ ✓ Yes

Would you like to learn more about using social media?

○ ✗ No

○ ✓ Yes

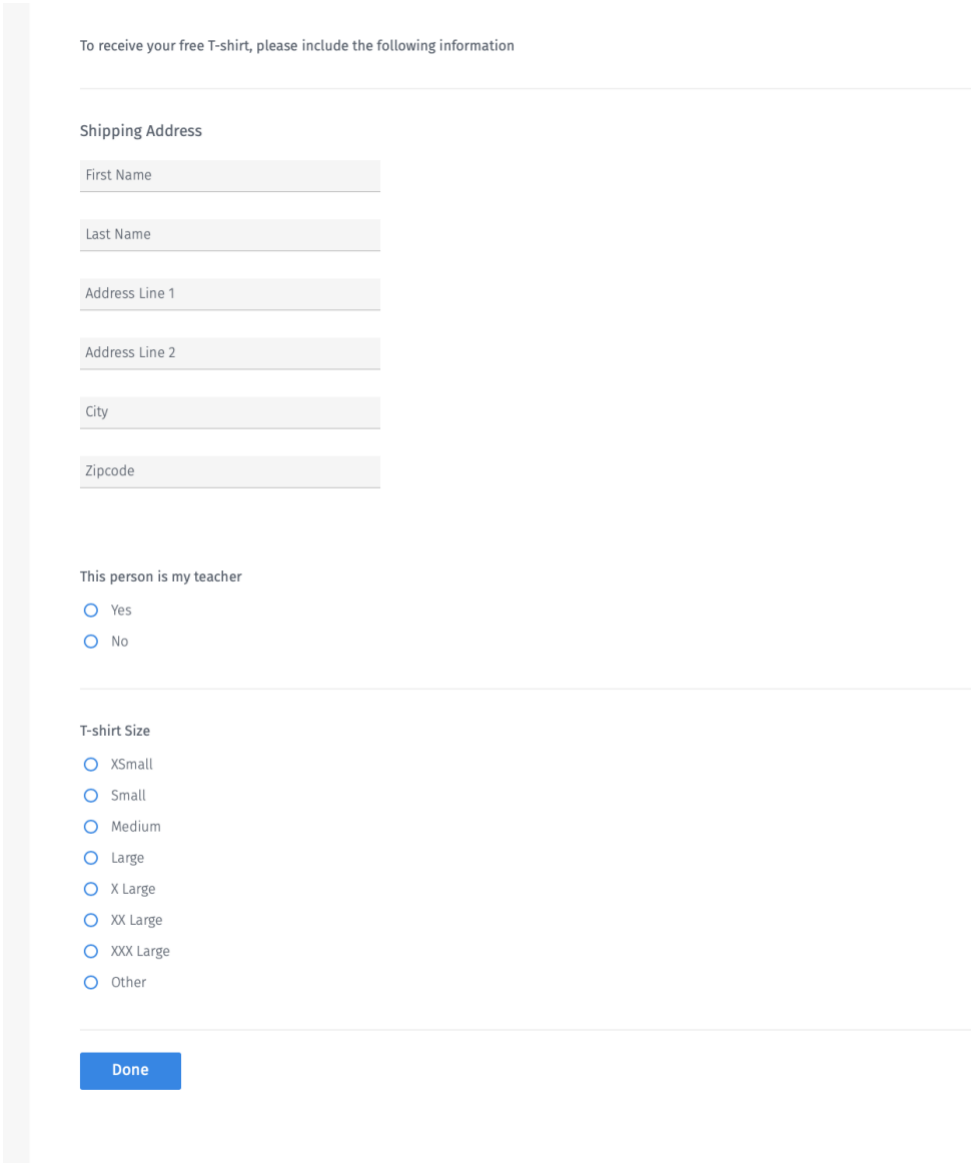
Appendix L

Survey Conclusion

Thank you for taking your time to complete this survey! Please go to the following link and insert your name, mailing address, and t-shirt size to receive your free t-shirt. T-shirts will be mailed out in January. **CLICK THIS LINK AND COMPLETE THE INFORMATION TO RECEIVE YOUR FREE T-SHIRT!**
https://freetshirtinfo.questionpro.com
Thank you for completing this survey.

Appendix M

Form for Receiving Incentive T-Shirt



To receive your free T-shirt, please include the following information

Shipping Address

First Name

Last Name

Address Line 1

Address Line 2

City

Zipcode

This person is my teacher

- Yes
- No

T-shirt Size

- XSmall
- Small
- Medium
- Large
- X Large
- XX Large
- XXX Large
- Other

Done

Appendix N

Parent/Guardian Consent Form

Permission for Research Participation

Research Study Title: Evaluating the Effectiveness of Using Visual Prompts and Corrective Feedback to Instruct Electronic Message Safety to Young Adults with Intellectual Disability

Researcher(s): Mary Jo Krile, University of Tennessee, Knoxville
Dr. David Cihak, University of Tennessee, Knoxville

Why is my child being asked to be in this research study?

We are asking your child to be in this research study because they are a young adult who has an intellectual disability.

What is this research study about?

The purpose of the research study is to determine if visual prompts and corrective feedback would be effective for helping young adults with intellectual disability identify the safety level of an electronic message

How long will my child be in the research study?

If you give permission for your child to be in the study, and your child agrees, the length of their participation will depend on progress being made. Your child will participate in several one-on-one sessions with Mary Jo. Each session will take no longer than 15 minutes and will be scheduled during a time that your child has free. The number of sessions that will be completed depends upon progress made. Study duration should be somewhere between 1 to 3 months.

What will happen if I say "Yes, I want my child to be in this research study"?

- Prior to beginning this study, Mary Jo will need to access your child's records to view their assessment scores that pertain to intelligence quotient (i.e., Weschler or Woodcock Johnson) and adaptive behavior (i.e., Vineland or Adaptive Behavior Rating Scales. Should your child meet specific criteria set for this study, Mary Jo will record their scores with the use of a code name. These scores will be stored in encrypted files on a password protected computer.

If you give permission for your child to be in this study, we will ask your child to complete the following:

- Meet with Mary Jo for one-on-one sessions that will take no longer than 15 minutes. All sessions will be video recorded for research purposes.

- Complete ungraded surveys on Canvas. These surveys contain 5 electronic messages for your child to read and identify as safe or dangerous.
- After study requirements are met, your child will be sent one message on Gmail, Facebook, Twitter, Instagram, and Snapchat from accounts created by Mary Jo. The accounts being used to send the messages include: Mary Jo's personal accounts, an account that uses a username of a fictitious stranger, and an account with a username that uses a first or last name familiar to your child. Your child will read the messages sent to them and identify them as safe or dangerous. They will need to have accounts to these social media platforms for this portion of the study. If they do not have one, Mary Jo will help them create one. Should you/they like to delete any of these accounts after this study is completed, Mary Jo will help them delete the account(s).
- Complete an 8-question survey pertaining to their thoughts about using a visual to learn to identify the safety level of an electronic message.

What happens if I say "No, I do not want my child to be in this research study"?

Your child's being in this study is up to you. You can say no now or leave the study later. Either way, your decision won't affect your child's grades, their relationship with their instructors, or standing with the FUTURE program at the University of Tennessee, Knoxville.

What happens if I say "Yes" but change my mind later?

Even if you decide to allow your child to be in the study now, you can change your mind and stop at any time. If you decide to stop before the study is completed, you can contact Mary Jo at the contact information provided in the contact section of this form. All of your student's collected data will be destroyed immediately and not used in the final written report.

Are there any possible risks to my child?

It is possible that someone could find out your child was in this study or see their study information, but we believe this risk is small because of the procedures we use to protect their information. These procedures are described later in this form. As the number of FUTURE students is small, it is also possible for those who read final written reports to make assumptions on who provided the reported information. Again, procedures will be used to prevent this risk. These procedures are also discussed later in this form.

There is also the chance that sensitive topics may be discussed (i.e., cyberbullying, online predators, etc.). After each session, Mary Jo will spend time talking with your child about their feelings and help them with anything that bothers them. Should they need any other help, Mary Jo will have the FUTURE counselor meet with them. **If any cybercrime is reported by your student at any time during this study, Mary Jo will notify you and follow all necessary reporting requirements. You will also have a choice on what topics your student is exposed to. These choices can be seen on the last page of this consent form. Only the choices you circle will be covered with your student.** Should you like to see the messages being used, discuss this with Mary Jo and she will show you the created messages. All messages being used have been taken and adapted from cyber safety websites created by organizations and government.

Are there any benefits to being in this research study?

There is a possibility that your child may benefit from being in the study, but there is no guarantee that will happen. Possible benefits include electronic message safety knowledge and improved confidence in their ability to identify electronic messages as safe or dangerous. They will also be taught what to do if they receive a dangerous message (they will be taught to not reply to the message and to tell a trusted adult- parent, guardian, relative, teacher- immediately). We hope that the findings gained from this study will benefit other young adults with intellectual disability and aid in the creation of strategies to use when teaching young adults with intellectual disability cyber safety skills.

Who can see or use the information collected for this research study?

We will protect the confidentiality of your child's information by giving your student a code name. This code name will be used in place of their real name so that any information read in a final report will not be traced to them. Only Mary Jo will know your student's code name. Additionally, all collected data will be kept in an encrypted file on a computer, which allows the file to only be accessed by those who have the password. This password will only be known by Mary Jo. All collected data will also be firewall protected.

If information from this study is published or presented at scientific meetings, your child's name and other personal information will not be used.

We will make every effort to prevent anyone who is not on the research team from knowing that your child gave us information or what information came from your child. Although it is unlikely, there are times when others may need to see the information we collect about your child. These include:

- People at the University of Tennessee, Knoxville who oversee research to make sure it is conducted properly.
- Government agencies (such as the Office for Human Research Protections in the U.S. Department of Health and Human Services), and others responsible for watching over the safety, effectiveness, and conduct of the research.
- If a law or court requires us to share the information, we would have to follow that law or final court ruling.

What will happen to my child's information after this study is over?

We will keep your child's information to use for future research. Their name and other information that can directly identify them will be deleted from the research data collected as part of the study.

Will my child be paid for being in this research study?

Your child will not be paid for being in this study.

What else do I need to know?

Because of the small number of participants in this study, it is possible that someone could identify your child based on the information we collected from them. The procedures discussed in the confidentiality section will be used to prevent this.

To determine eligibility for this study, Mary Jo will need to access your child's records to view assessment scores that pertain to intelligence quotient (i.e., Weschler or Woodcock Johnson) and adaptive behavior (i.e., Vineland Rating Scales or Adaptive Behavior Rating Scales). Should your child meet the specific criteria set for this study, Mary Jo will record their scores with the use of a code name. These scores will be stored in the encrypted files on a password protected computer.

Who can answer my questions about this research study?

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, Mary Jo Krile. Her email is mkrile1@vols.utk.edu. You may also contact her faculty advisor, Dr. David Cihak. His email is dcihak@utk.edu

For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board
The University of Tennessee, Knoxville
1534 White Avenue
Blount Hall, Room 408
Knoxville, TN 37996-1529
Phone: 865-974-7697
Email: utkirb@utk.edu

STATEMENT OF PERMISSION

I have read this form and the research study has been explained to me. I have been given the chance to ask questions and my questions have been answered. If I have more questions, I have been told who to contact. By signing this document, I am giving permission for my child to be in this study. I will receive a copy of this document after I sign it.

Child's Name (printed) _____

Parent's Name (printed) _____

Parent's Signature _____ Date _____

Dangerous Message Topic Areas

The following list includes the sensitive topics that will be used for the dangerous messages in this study. **Circle the topics you want to be used with your student.**

***Should you like to see any of the messages, contact Mary Jo and she will show you the messages being used.

Cyberbullying

- Mean comments
- Blackmailing
- Hate comments

***Messages adapted from www.cyberbully.org – Cyberbullying research center

Harassment

- Threats of getting hurt
- Threats of hurting someone else
- Intimidation

***Messages adapted from www.cyberbully.org – Cyberbullying research center

Scams

- Selling items
- Links to fake items
- Hacking
- Pyramid schemes

***Messages adapted from https://www.usa.gov/common-scams-frauds

Fraud/Identify Theft/Asking for Personal Information

- Phone number
- Social security number
- Address
- Where go to school/work
- Birthday
- Credit/debit card information
- Student ID number
- Passwords

***Messages adapted from https://www.usa.gov/common-scams-frauds-

Online Predators

- Invites to meet without telling anyone
- Flirting with against will
- Give free money/items if meet
- Asking for pictures
- Keeping communication secret

*** Messages adapted from: “Chatting Safely Online” Lesson plan/materials for 6th grade at https://www.commonsense.org/education/digital-citizenship/lesson/chatting-safely-online “Private and Personal Information” Lesson plan /materials for 4th grade at https://www.commonsense.org/education/digital-citizenship/lesson/private-and-personal-information.

Appendix O

Student Consent Form

Consent for Research Participation

Research Study Title: Evaluating the Effectiveness of Using Visual Prompts and Corrective Feedback to Instruct Electronic Message Safety to Young Adults with Intellectual Disability

Researcher(s): Mary Jo Krile, University of Tennessee, Knoxville
Dr. David Cihak, University of Tennessee, Knoxville

Why am I being asked to be in this research study?

We are asking you to be in this research study because you are a young adult who has an intellectual disability.

What is this research study about?

The purpose of the research study is to determine if visual prompts and corrective feedback would be effective for helping young adults with intellectual disability identify the safety level of an electronic message.

How long will I be in the research study?

If you agree to be in the study, your participation will include several one-on-one sessions with Mary Jo. Each session will take no longer than 15 minutes and will be scheduled during a time that you have free. The number of sessions that will be completed depends upon progress made. Study duration should be somewhere between 1 to 3 months.

What will happen if I say "Yes, I want to be in this research study"?

- Prior to beginning this study, Mary Jo will need to access your records to view your assessment scores that pertain to intelligence quotient (i.e., Weschler or Woodcock Johnson) and adaptive behavior (i.e., Vineland or Adaptive Behavior Rating Scales. Should you meet specific criteria set for this study, Mary Jo will record your scores with the use of a code name. These scores will be stored in encrypted files on a password protected computer.

If you agree to be in this study, we will ask you to complete the following:

- Meet with Mary Jo for one-on-one sessions that will take no longer than 15 minutes. All sessions will be video recorded for research purposes.

- Complete ungraded surveys on Canvas. These surveys contain 5 electronic messages for you to read and identify as safe or dangerous.
- After study requirements are met, you will be sent one message on Gmail, Facebook, Twitter, Instagram, and Snapchat that is sent from an account created by Mary Jo. You will read these messages and identify them as safe or dangerous. You will need to have accounts to these social media platforms for this portion of the study. If you do not have one, Mary Jo will help you create one. Should you like to delete any of your accounts after this study is completed, Mary Jo will help you delete them.
- Complete an 8-question survey pertaining to your thoughts about using a visual to learn to identify the safety level of an electronic message.

What happens if I say "No, I do not want to be in this research study"?

Being in this study is up to you. You can say no now or leave the study later. Either way, your decision won't affect your grades, relationship with your instructors, or standing with the FUTURE program at the University of Tennessee, Knoxville.

What happens if I say "Yes" but change my mind later?

Even if you decide to be in the study now, you can change your mind and stop at any time. If you decide to stop before the study is completed, you can contact Mary Jo at the contact information provided in the contact section of this form. All of your collected data will be destroyed immediately and not used in research findings.

Are there any possible risks to me?

It is possible that someone could find out that you were in this study or see your study information, but we believe this risk is small because of the procedures we use to protect your information. These procedures are described later in this form. As the number of FUTURE students with intellectual disability is small, it is also possible for those who read any written reports of research findings to make assumptions on who provided the reported information. Again, procedures will be used to prevent this risk. These procedures are discussed later in this form.

During your participation, you may read messages that bother you. After each session, Mary Jo will spend time talking with you about your feelings and helping you with anything that bothers you. Should you need any other help, Mary Jo will have the FUTURE counselor meet with you. If any cybercrime is reported by you at any time during this study, Mary Jo will notify your parent(s) or guardian(s) and follow all necessary reporting requirements.

Are there any benefits to being in this research study?

There is a possibility that you may benefit from being in the study, but there is no guarantee that will happen. Possible benefits include electronic message safety knowledge and improved confidence in your ability to identify electronic messages as safe or dangerous. We hope that the findings gained from this study will benefit other young adults with intellectual disability.

Who can see or use the information collected for this research study?

We will protect your confidentiality of your information by giving you a code name. This code name will be used in place of your real name so that any information read in a final report will not be traced to you. Only Mary Jo will know your code name. Additionally, all collected data will be kept in an encrypted file on a computer, which allows the file to only be accessed by those who have the password. This password will only be known by Mary Jo. All collected data will also be firewall protected.

If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information or what information came from you. Although it is unlikely, there are times when others may need to see the information we collect about you. These include:

- People at the University of Tennessee, Knoxville who oversee research to make sure it is conducted properly.
- Government agencies (such as the Office for Human Research Protections in the U.S. Department of Health and Human Services), and others responsible for watching over the safety, effectiveness, and conduct of the research.
- If a law or court requires us to share the information, we would have to follow that law or final court ruling.

What will happen to my information after this study is over?

We will keep your information to use for future research. Your name and other information that can directly identify you will be deleted from your research data collected as part of the study.

Will I be paid for being in this research study?

You will not be paid for being in this study.

What else do I need to know?

Because of the small number of participants in this study, it is possible that someone could identify you based on the information we collected from you. The procedures discussed in the confidentiality section will be used to prevent this.

To determine eligibility for this study, Mary Jo will need to access your records to view assessment scores that pertain to intelligence quotient (i.e., Weschler or Woodcock Johnson) and adaptive behavior (i.e., Vineland Rating Scales or Adaptive Behavior Rating Scales). Should your meet the specific criteria set for this study, Mary Jo will record your scores with the use of a code name. These scores will be stored in the encrypted files on a password protected computer.

Who can answer my questions about this research study?

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, Mary Jo Krile. Her email is mkrile1@vols.utk.edu. You may also contact her faculty advisor, Dr. David Cihak. His email is dcihak@utk.edu

For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board
The University of Tennessee, Knoxville
1534 White Avenue
Blount Hall, Room 408
Knoxville, TN 37996-1529
Phone: 865-974-7697
Email: utkirb@utk.edu

STATEMENT OF CONSENT

I have read this form and the research study has been explained to me. I have been given the chance to ask questions and my questions have been answered. If I have more questions, I have been told who to contact. By signing this document, I am agreeing to be in this study. I will receive a copy of this document after I sign it

Name of Participant	Signature of Participant	Date

Appendix P

Student Copy of Visual Checklist



Too Dangerous!
Do Not Reply!
Talk to a Trusted Adult!

If one or more are checked

- ☐ I do not know the person who sent the message
- ☐ The message is inappropriate
- ☐ The message bothers me
- ☐ The person asked for personal information (birthday, phone number, address, social security number, debit/credit card number, banking information, etc.)



Safe to Reply!

If none are checked

- ☐ I do not know the person who sent the message
- ☐ The message is inappropriate
- ☐ The message bothers me
- ☐ The person asked for personal information (birthday, phone number, address, social security number, debit/credit card number, banking information, etc.)

Appendix Q

Electronic Messages for Study 2

Cyberbullying

- Mean comments
- Blackmailing
- Hate comments

****Taken and adapted from www.cyberbully.org – Cyberbullying research center

1. Kelly is so useless. She needs to go hide under a rock a stay there.
2. Joe is so ugly. He looks like a hairy troll.
3. Sally has been babied all your life. Can she even do anything on your own?
4. You don't belong here. I can't believe you even got into college.
5. Kelly looks like an alien when she wears those glasses.
6. I hate you! Please, just don't come to school anymore! You would be doing everyone a favor.
7. Did you see what Sally did? She is so stupid!
8. I just don't understand you! You drive me crazy. I don't want to talk to you ever again.
9. You are so boring. Don't talk to me unless you do something that is actually fun.
10. Please run away and never come back!
11. That picture on your profile is so stupid. Take it down now.
12. You are worthless. Why are you even here?
13. Everyone hates Joe. He is so stupid.
14. You are not cool. Why do you think you are so popular? No one wants to be your friend.
15. No one cares about what you have to say. You think you know everything, but you don't. Don't talk in class anymore!
16. Why did you cry in class today? You are such a baby! Grow up!

17. Sam is that frizzy haired freak. He is fat and ugly.

18. If you had more friends, I wouldn't have to talk to you so much. Go out and get yourself some real friends.

19. Freak!

20. Loser!

Harassment

- Threats of getting hurt
- Threats of hurting someone else
- Intimidation

****Taken and adapted from www.cyberbully.org – Cyberbullying research center

1. Sammy is such a loser! Why do you even like her? You would be cooler if you stopped talking to her.

2. I am going to make all your friends come to my party. You won't have any friends at your party. Nobody wants to come to your party anyways.

3. If you tell my mom, I am going to tell everyone who your crush is and embarrass you.

4. You made me so angry today! I am going to hurt you!

5. If you tell anyone that I told you this, you are going to be in major trouble!

6. You should unfriend Tony. Everyone else has. Don't you want to be cool like us?

7. You need to grow up. I can't believe you told my mom our secret. Now I am going to tell everyone about your embarrassing story.

8. I am going to make the university's president kick you out of school.

9. If Sammy comes to school tomorrow, I am going to hurt her.

10. If you don't come to my party, I am going to go to your house and take your dog.

Scam

- Selling items
- Links to fake items
- Hacking
- Pyramid schemes

***Adapted from https://www.usa.gov/common-scams-frauds-

1. Save the dolphins! Every year dolphins die from plastic bottles in the ocean. Go to www.savethedolphinsfromplastic.com and give money to save the dolphins. Anything helps! Your help is needed now!

2. Want a front row ticket to see Maroon 5? Click http://www.maroon5frontrowticket.com/ and pay $600. Ticket will be emailed to you.

3. If you click on this link, you will get free Vol basketball tickets! Let me know if it works! www.freetixsvols.com

4. Want to earn $500 a week? Go to www.earn500aweek.com to learn more!

5. I need 5 new people who are interested in the Vols to join my organization! If you join, you could earn $300 a week. Want to join me? Are you in?

6. Want to go to Paris? Pay $300 now and win a free trip!!!!! Just go to www.freeparistrip.com

7. Want to spend a week in New York City? Go to www.freenewyorkweek.com to enter for a chance to win a free vacation to the Big Apple!

8. Do you enjoy meeting new people? If you want to make new friends, join my organization! For $30 a month, you could meet people just like you!!!!

9. Want to meet other Vol fans? Pay $20 a month and you can come to private Vol fan events. Just go to www.supervolfans.com to join!

10. Enter to win a free trip to the Caribbean! Go to www.freecaribbeantrip.com to enter! Only $100 to enter!

11. Click here to enter to win $5000! www.free5000dollars.com

12. Save the dogs! Every day, 1,000 dogs are left outside in the heat. Money is needed now to save the dogs. Go to www.savethedogs@gofundme.com to save the dogs!

13. Need a job? Want to work from home and earn $2000 a month? All you need to do is go to www.earn2000amonth.com to join my organization and work from home!

14. Free weekend in Hollywood! Go to www.freehollywoodweekend.com to enter.

15. FREE STARBUCKS FOR LIFE!!!!! Click www.freestarbucksforlife.com to download free gift cards to Starbucks. It is that easy!

16. Cute puppy videos! Go to www.cutepuppyvideos.com to see them!

17. Cute baby pandas and giraffes! Go to www.cutebabyanimals.com to see them!

18. Free Vol Football tickets!!!!! Email freeticx@hotmail.com to get your tickets!

19. Facebook is deleting accounts! Send this attachment to 25 people if you don't want Facebook to delete your account!

20. Instagram only lets 10 people see your posts. Send this to 15 people to make sure more than 10 people see your posts!

21. Want to see what you would look like when you are old? Click here to see! www.whatwouldIlooklikeold.com to see!

Fraud/Asking for personal information

- Phone numbe
- Sociral security number
- Address
- Where go to school/work
- Birthday
- Credit/debit card information
- Student ID number
- Passwords

***Adapted from https://www.usa.gov/common-scams-frauds-

1. Hi! Is (insert student's name here) your real name? What is your last name?

2. In your profile pic you are wearing a Vols shirt. Do you go to the University of Tennessee?

3. I want to get to know you better. What is your phone number?

4. Want to buy some Vol basketball tickets? I just need your credit card number.

5. How old are you? When is your birthday?

6. Do you live in Knoxville?

7. You can win $500! All I need is your social security number!

8. Would you like to meet a Vol basketball player? Send me your phone number and address and I'll arrange it.

9. Where do you work?

10. Where do you live?

11. Send me your debit card number and free concert tickets will be emailed to you!

12. Enter your credit card number at this website and win free season tickets for Vols basketball! www.freeseasonticxets.com

13. Go to www.workonlinefor2000amonth.com and enter your social security number to work from home and earn $2000 a month. It is that easy!

14. Snapchat is deleting accounts! Enter your address in this message to let Snapchat know they can't delete your account!

15. Want more people to see what you are posting on Facebook? Enter your social security number in this message to let Facebook know you want your entire friends list to see your posts!

16. Want more friends? Enter your phone number into this message to be entered into a virtual group where you can meet others!

17. Free homework help! Go to www.domyhomework.com and enter your phone number, address, and social security number to get free homework help.

18. Free car! Want a free car? Go to www.freecarismine.com and enter your debit card number to win!

19. Want the latest iPhone? Enter your student ID number and birthday to get one for free!

20. Enter your Instagram password to win a new laptop!

Online predators

- Invites to meet without telling anyone
- Flirting with against will
- Give free money/items if meet
- Asking for pictures
- Keeping communication secret

*** Taken and adapted from: "Chatting Safely Online" Lesson plan/materials for 6th grade at https://www.commonsense.org/education/digital-citizenship/lesson/chatting-safely-online "Private and Personal Information" Lesson plan /materials for 4th grade at https://www.commonsense.org/education/digital-citizenship/lesson/private-and-personal-information

1. I am going to send you a picture. But your parents can't see it, okay?
2. You are so talented! Do you want to be a professional singer?
3. I think you are so beautiful.
4. Here is my cell phone number. 555-555-5555. Now you can send me pics of you. Don't tell anyone about this.
5. Hi beautiful! How are you today?
6. I want to see more pictures of you! Send me more?
7. I like your profile name! Is that your real name?
8. Will you promise to keep our friendship a secret?
9. What is your cell phone number? I want to text you.
10. I want to get to know you better. Let's video chat.
11. What school do you go to?
12. Where do you work?
13. I have free Starbucks gift cards. If you meet me, I will give you some. Sound like a plan?
14. Want to meet in person? If you do, you can't tell anyone.
15. I see that you like the Vols. Me too. Want a free ticket to the next game? If you do, we can meet up and I will give it to you,

16. Can you send me a pic of you in your swimsuit?
17. What street do you live on?
18. Your name is cool. Do you have a middle name? What is it?
19. I know your mom and I want to send her a birthday card. What is your address?
20. I will come and pick you up. I just need your address. You can't tell anyone that we are meeting though.
21. Can you send me a picture of your bedroom?
22. You should send me a picture of your house. I want to see what it looks like.

Safe messages

***Self-created

1. Hey! Want to get Starbucks after class tomorrow?
2. Want to go see a movie with me tomorrow?
3. Let's hang out! When do you have free time?
4. Sorry! I have been super busy lately! Want to have lunch tomorrow?
5. Love your new profile picture! That is such a good picture of you!
6. Want to watch the basketball game at my house tomorrow?
7. How was your day?
8. I hope you feel better soon!
9. Do you have a lot of homework to do?
10. Are you free Friday night? Let's do something!
11. Did you see the game last night? I can't believe we won! Go Vols! VFL!
12. I am running late! See you soon!

13. I am going to go get lunch. Want to come with me?

14. Let's chat after class. Heading to work right now.

15. Want to hang out tomorrow?

16. Hey! I heard you got the job!!!! Congrats!!!!!!

17. Want to go to the basketball game this weekend? I can get us tickets.

18. Don't accept any new friend requests from me. I got hacked. ☹

19. Want to go to Main Event tonight?

20. Can you make it to my party this weekend? Hope to see you there!

21. I miss you! Hope you are doing well! Let's chat soon!

22. See you in 10 mins!

23. Did you see the latest episode! It was so good!

24. I'll pick up a coffee for you. What do you want?

25. Want to meet in Table Town?

26. I'll pick you up at 11.

27. Thanks for the card! That was so nice of you!!!!

28. Thanks for getting lunch with me today! I had so much fun!

29. See you Friday!

30. What time are you done with class today?

31. What time are you done with work today?

32. What is your favorite color? I want to get you something for your birthday.

33. Sorry that I missed your phone call. I am on the phone with my sister.

34. I will call you back in a few!

35. Where are we going for lunch today?

36. I’ll meet you there!

37. Let’s go to the gym today!

38. Did you see who won The Voice yesterday? I missed it!

39. I think it is supposed to rain. Did you bring your umbrella to school today?

40. I loved your outfit today!!!!!

Appendix R

Lesson Plan with Script for Training Stage of Study 2

Materials:

- 3-6 copies of visual checklist (VC)
- Copies of training messages
- Online training message simulation

Introduction:

Teacher: *"Today, we are going to learn how to figure out if an electronic message is safe or dangerous. Can you give me any examples of what an electronic message is? Have you ever received any electronic messages?"*

Allow for student replies and provide feedback

Teacher: *"Electronic messages are messages sent to you on your phone, computer, tablet, or any other technology device. It can be a text message, email, or messages in social media. When we get messages sent to us, what do we do with them?"*

Allow for student replies and provide feedback

Teacher: "*We want to read the message and reply by sending something back. Electronic messages can be safe to reply to. They don't put us in any danger if we reply to them. Can you think of any messages that might be safe to reply to?"*

Allow for student replies and provide feedback

Teacher: "*Some examples of safe electronic messages include a friend asking if you want to meet them somewhere, a family member asking what time you are done with school, or a classmate*

asking when an assignment is due. Can you think of any other messages that would be safe to reply to?"

Allow for student replies and provide feedback

Teacher: *"There are also electronic messages that are dangerous. These messages could put us at harm if we reply to them and/or hurt our feelings. Can you think of any messages that might be dangerous?"*

Allow for student replies and provide feedback

Teacher: *"Some examples of dangerous messages include that of someone you don't know asking for your personal information- such as phone number or address, someone you don't know asking for pictures of you, or someone saying mean things to you. When we receive messages that are dangerous it is important to not reply to them and to show a trusted adult right away. The trusted adult can help us report the message, block the sender, and help us feel better if our feelings were hurt by the message. Sometimes, it can be hard to figure out if a message is safe or dangerous. To help us do this, we are going to use this visual checklist* Present chart to student.

Introduction of Visual Prompt:

Teacher: "*Let's take a look at this chart. What do you see when you look at it?"*

Allow for student replies and provide feedback

Teacher: *"There is a stop and go sign that tells us what we should do with the message. Next to the stop sign, there are sentences with checkboxes. The go sign has the same sentences and checkboxes. Let's look at the checkboxes next to the stop sign. Above the checkboxes, it says 'If one of more is checked. What do you think that means?"*

Allow for student replies and provide feedback

Teacher: *"This means that if one of these four boxes are checked, the message is dangerous, so we should not reply and should tell a trusted adult as soon as we can. Let's read the four sentences that have checkboxes. Can you read the first one for me?"*

Student reads sentence

Teacher: *"What do you think that means? Who would be someone you don't know? Do you think people you don't know could send you electronic messages?"*

Allow for student replies and provide feedback

Teacher: *"When someone we don't know sends us an electronic message, it can be dangerous to reply. We don't know them, so we don't know what they may want. Let's look at the second sentence. This sentence says, 'The message is inappropriate.' Let's talk about what inappropriate means. When something is inappropriate it is something that might be against the rules or something you think is wrong to do. When someone does something in an electronic message that is inappropriate, it will be something you may think is mean or wrong to do. Can you think of something that someone might send you that would be inappropriate?"*

Allow for student replies and provide feedback

Teacher: *"Examples of inappropriate messages include that of someone using curse words, bullying you, telling you bad things, or saying/doing things that are sexual in nature. Any of these messages would be dangerous and need to be reported to a trusted adult. They can help us take care of the message. Let's look at the third sentence. This sentence says, 'The message bothers me.' We know when something bothers us because it makes us feel irritated, angry, or maybe even sad. What would someone say in a message that might bother you? What feelings do you think you would experience if a message bothered you?"*

Allow for student replies and provide feedback

Teacher: *"When a message bothers us, it is important to not reply because it could make us feel worse than we already do. Let's look at the last sentence next to the stop sign. This sentence says, "The person asked for personal information." Then, there are examples of what personal information would be. Can you think of why giving someone our personal information in messages would be dangerous?"*

Allow for student replies and provide feedback

Teacher: *"Giving someone our personal information can lead to our accounts getting hacked, someone stealing our identity, or someone we don't know finding where we live. It is important to keep our personal information to ourselves so that this does not happen. Now, let's look at section next to the go sign. Above the same sentences and checkboxes, it says 'If none are checked.' What do you think that means?"*

Allow for student replies and provide feedback

Teacher: *"It means that if none of the boxes are checked, the message is safe and we can reply. It is easy to use this visual to figure out if an electronic message is safe or dangerous and what we should do with it. Are you ready to learn how to use it?"*

Modeling Use of Prompt:

Get first training message (Safe message) copies and give one to student.

Teacher: *"Let's pretend I got this message sent to me on Facebook. I am not sure if this message is safe or dangerous, so I am going to use this visual to help me. First, I am going to read the message*. Read message. *Then, I am going to start with the checkboxes next to the stop sign. I start with the first sentence, 'I do not know the person that sent the message.' To find out who*

sent the message, I am going to look for the person's username. Where do you think their username is?

Allow for student replies and provide feedback

Teacher: *"Right! Their username is…(*insert name here*)*. *This is someone I do know, so I am going to leave that first box empty. Since there is no box checked, I am going to go to the second checkbox and see if the message is inappropriate. I am going to reread the message.* Reread message. *It seems to me that this is okay. Nothing is inappropriate with it. So, I am going to leave this box empty and go to the next sentence.* Continue process for rest of sentences….*None of my boxes are checked, so is this message safe or dangerous to reply to?*

Allow for student replies and provide feedback

Teacher: *"Correct! It is safe. I can reply to the message. Let's look at another one."*

Get first training message (Dangerous message) copies and give one to student.

Teacher: repeat modeling process used for safe message. When box is checked, *"I now have one box checked. What does it say the message is when I have one box checked?"*

Allow for student replies and provide feedback

Teacher: *"Right! It is a dangerous message. I should not reply and should talk to a trust adult as soon as possible. Now, I want you to try! I am going to give you a message and I want you to see if you can figure out if it is safe or dangerous by using the checklist like I did. Are you ready?"*

Guided Practice:

Give student a copy of a training message and provide feedback as student uses the visual to determine if the message is safe or dangerous. Continue with the training messages and feedback until student demonstrates accuracy in using the visual to correctly identify if a message is safe or dangerous. Once a student demonstrates accuracy, move to independent practice.

Independent Practice:

Have student log on to Canvas and access the Online Simulation Training Message. Once accessed, student will independently use the visual to answer the two questions that follow each message. Provide any feedback if needed. Once the simulation is completed, the student has completed the training and will begin the intervention phase during their next session.

Appendix S

Social Validity Survey: Study 2

	Questions	Responses		
1.	I liked using the stop and go checklist to decide if an online message was safe or dangerous.	Disagree	Neutral	Agree
2.	Using the stop and go checklist helped me decide if an online message was safe or dangerous.	Disagree	Neutral	Agree
3.	I could use the stop and go checklist to decide if messages sent to me on social media are safe or dangerous.	Disagree	Neutral	Agree
4.	I think using the stop and go checklist would help me decide if messages sent to me on social media are safe or dangerous.	Disagree	Neutral	Agree
5.	I want to use the stop and go checklist to help me decide if messages sent to me on social media are safe or dangerous.	Disagree	Neutral	Agree
6.	Using the stop and go checklist will help me feel safer when talking to others online.	Disagree	Neutral	Agree
7.	What did you like best about using the stop and go checklist to decide if messages were safe or dangerous?			
8.	What did you not like about using the stop and go checklist to decide if messages were safe or dangerous?			

Appendix T

Procedural Integrity Checklist: Study 2

Criteria Met	Criteria
Yes No	Simulation was released to participant at beginning of session.
Yes No	Participant was prompted to find correct simulation.
Yes No	Participant was given a copy of visual checklist prior to beginning simulation.
Yes No	Participant was prompted to begin the simulation.
Yes No N/A	Instructor gave prompts if participant did not begin a portion of the simulation within 15 seconds.
Yes No	After submission of simulation, instructor provided corrective feedback in verbal conversation with participant.
Yes No	Instructor engaged in a debriefing conversation with participant at end of session.

Vita

Mary Jo Krile was born and raised in Forest River, North Dakota. She earned her Bachelor of Science in Education, with a concentration in K-12 special education, from Northern State University in 2012. Upon graduation, Mary Jo worked as a high school (grades 9-12) special education resource room teacher in Webster, South Dakota for one year. She then moved to Cando, North Dakota, where she taught elementary (grades K-6) special education for three years. During her tenure in Cando, Mary Jo earned her Master of Science in Education, with a concentration in special education strategist, from the University of North Dakota. In 2016, she moved to Knoxville, Tennessee to purse her Ph.D. in Special Education from the University of Tennessee. Throughout this degree, Mary Jo taught Digital Literacy courses within the FUTURE program (a postsecondary program for young adults with intellectual and/or developmental disabilities). She also taught a special education course to undergraduate and graduate teacher candidates for three summer sessions, one of which she piloted as asynchronous online. Mary Jo will receive her Ph.D. in Special Education and a graduate certificate in Evaluation, Statistics, and Measurement in May of 2020.