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CRIMES AGAINST CHILDREN RESEARCH CENTER

A Content Analysis of Youth Internet Safety Programs: Are Effective Prevention Strategies Being Used?

Lisa M. Jones, Kimberly J. Mitchell, and Wendy A. Walsh

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This Bulletin is one of two published by the Crimes Against Children Research Center (CCRC) based on findings from a 2012 study, "The Evaluation of Internet Child Safety Materials Used by ICAC Task Forces in School and Community Settings" funded by the National Institute of Justice (NIJ). The study involved a process evaluation of the current approach to Internet Safety Education with the aim of providing recommendations for future prevention efforts in this area. Both bulletins can be found on the CCRC website: www.unh.edu/ccrc/internet-crimes/papers.html and the full NIJ final report for the study can be found at: https://www.ncjrs.gov/pdffiles1/nij/grants/242016.pdf.

ABSTRACT: **Almost half of youth in the U.S. report receiving internet safety education (ISE) in their schools. Unfortunately, we know little about what educational messages make a difference in problems such as cyberbullying, sexting, or online predators. To consider directions for improving effectiveness, a content analysis was conducted on materials from four ISE programs. Results indicate that ISE programs are mostly not incorporating proven educational strategies. Common ISE messages have proliferated without a clear rationale for why they would be effective. It is recommended that program developers and other stakeholders reconsider ISE messages, improve educational strategies, and participate in evaluation. The field must also consider whether ISE messages would be better delivered through broader youth safety prevention programs versus stand-alone lessons.**

Publicity about cyberbullying and online predators has raised alarm about the extent that internet is putting children and adolescents at risk. Internet safety education (ISE) websites, presentations and classroom materials have been created to educate youth and the public about online safety issues. Law enforcement has been active in disseminating materials to communities in the U.S. (Mitchell, Jones, Finkelhor, & Wolak, 2012) and schools are increasingly integrating internet safety and prevention messages into education curricula. A U.S. 2010 survey of youth internet users found that 45% of youth reported receiving ISE information at school, up from 30% who reported similar exposure in 2005 (Mitchell et al., 2012).

Early ISE based messaging on content from high-profile media and law enforcement cases, and it is not clear how much program developers have updated materials based on the growing body of research on internet safety. This research has found that many of the online dangers popularized by the media, such as child sexual predators finding and deceiving young children online, are quite rare (Wolak, Finkelhor, Mitchell, & Ybarra, 2008). Most problems youth experience online involve sexual harassment and verbal peer aggression; paralleling problems that they are dealing with offline (Jones, Mitchell, & Finkelhor, 2012; Mitchell, Finkelhor, & Wolak, 2001, 2007; Mitchell, Wolak, & Finkelhor, 2007).

Additionally, evaluation has not been a priority. A few, small evaluations on ISE programs have been conducted (Branch Associates, 2002; Brookshire & Maulhardt, 2005; Chibnall, Wallace, Leicht, & Lunghofer, 2006; Mrazek, Hutton, & Cupit, 2006; Pruitt-Mentle, Pusey, & Grahek, 2009) but mostly with no comparison groups, and inadequate outcome measures. One larger, quasi-experimental evaluation of the i-SAFE curriculum (Chibnall et al., 2006) found that while children successfully retained the knowledge presented to them, there were no significant changes in online behaviors. Outcome evaluations will eventually be needed to determine

whether internet safety education is effective, but they should be conducted on programs with a good chance of success. Prevention research shows that curricula with active, skill-based lessons and adequate time for learning have the best results (Durlak, Weissberg, & Pachan, 2010; Jones, 2010; Jones, Mitchell, & Walsh, 2014). Effective programs also define their goals clearly and focus their educational efforts on factors that are causally linked to the problem of concern. Assembly presentations using fear-based tactics, prevalent in the earliest ISE and still used today, have repeatedly been shown to be ineffective when applied to youth problems (Botvin & Botvin, 1992; De Haes & Schuurman, 1975; Petrosino, Turpin-Petrosino, & Buehler, 2003; Ringold, 2002; Tobler, 1992; Tobler & Stratton, 1997; Werch & Owen, 2002).

To formally assess the current status of internet safety education efforts so that improvements can be made, this study systematically reviews ISE program materials using content analysis asking the following questions: Which ISE topics are being covered using which key educational messages? To what degree do programs incorporate current research knowledge on ISE? And, do they adhere to known effective educational strategies? Materials from four long-standing ISE programs (iKeepSafe, i-SAFE, Netsmartz, and WebWiseKids) were reviewed based on their prominence in the field and use by internet safety educators such as the Internet Crimes Against Children (ICAC) Task Forces.

Methodology

Content analysis procedures were followed as recommended by Neuendorf (2002). ISE materials were reviewed from Netsmartz, iKeepSafe, i-SAFE and Webwisekids and double-coded by four project staff, including three primary investigators.

Content Sampling

Coders first reviewed all available electronic and written materials for each of the four ISE programs to gather information on the breadth of their program. We narrowed our review to materials: 1) directed toward youth (versus parents, teachers, and law enforcement); 2) focused on internet safety or behavior; 3) accompanied by curriculum or presentation guidelines such as a presenter's manual, suggested discussion questions or lesson-based curriculum.

A full list of the 33 coded lessons or presentations has been included in Table 1, Appendix A. For Netsmartz, WebWiseKids, and iKeepSafe, all program materials were reviewed meeting the criteria above. For i- SAFE, program developers provided us with materials corresponding to three lessons that they felt were representative of their ISE curriculum approach, as well as curriculum guides, curriculum sequencing recommendations, and other supporting documents.

Coding Procedures

For all selected lessons, coders recorded the recommended age range for the materials (if specified), the number of sessions the topic required, and how long the lessons or presentations ran. After reviewing materials thoroughly, a decision was made to analyze program materials using two strategies.

If a presentation curriculum or lesson was directed at middle or high-school aged youth and dealt with topics of cyber-bullying, internet predators, or sexting, then the materials were reviewed by coders using a full coding process. This involved coding: 1) the extent that program materials incorporated educational strategies known to be most effective; 2) the degree that materials incorporated research-based messages; and 3) key educational messages promoted by the ISE materials (see Measures below). Sixteen of the 33 lessons were reviewed using this full coding process (see Table 1, Appendix A).

However, many program materials we examined were: 1) directed toward elementary-school aged children, or 2) focused on "digital literacy" topics such as privacy settings, online reputations, and avoiding e-scams. For materials directed at younger children, we found it difficult to assess whether educational messages were research-based. Only a minority of elementary school youth uses social networking sites, cell phones, or email and few have problems with victimizations or unwanted experiences if they are less than 12 years of age (Jones, Mitchell, & Finkelhor, 2012). Additionally, researchers have not studied the nature of youth experience with e-fraud or online reputations in much detail (although it is starting to develop, see for example Davis & James, 2012). Therefore, materials falling into the two categories above (16 lessons) were coded for key educational messages only (e.g., "tell an adult if you are bullied online" or "don't share personal information online.") in order to better understand the link between the message and the educational goals.

Measures

All of the content analysis coding measures described below were developed for the current project.

The KEEP Checklist (Known Elements of Effective Prevention). The KEEP Checklist was based on a systematic review of youth prevention education research (Jones, Mitchell, & Walsh, 2014). The checklist identifies five basic prevention education characteristics that have been shown to be critical to effectiveness across many areas of youth prevention (drug abuse, mental

health problems, aggression, delinquency, school drop-out, bullying, sexual abuse, etc.). The five elements are: 1) a structured curriculum or lessons; 2) skill-based learning objectives; 3) active participant involvement and learning; 4) an adequate program dose; and 5) additional learning opportunities (see Table 2, Appendix B). Given that only 16 ISE lessons were reviewed using this checklist, sample size was too small to effectively calculate Cohen's kappa as a check on inter-rater reliability, however, inter-rater coding agreement rates ranged from 88% -100% per coded element. Disagreements were resolved by group discussion.

The Internet Safety Education (ISE) Fact Checking Sheets. To obtain some measure of the degree to which the reviewed ISE materials included research-based messages, we also created three ISE Fact Checking Sheets. These forms evaluated the degree to which ISE materials provided research-based information on the following topics: 1) sexual solicitations/internet predators; 2) sexting; and 3) online harassment or cyberbullying. Each fact-sheet included a list of messages reflecting current research-based knowledge about the topic (e.g., "Materials state that internet predator cases are not common) or providing youth with strategies that research has shown can help them reduce problem size or impact (e.g., "Materials provide potential bullies with ideas and skills to de-escalate when they feel angry or 'disrespected'"). (See Table 3, Appendix C for a list of cited Checklist items.) Scores were calculated based on the numbers of messages that were included in materials ranging from 0-7 for materials discussing sexual solicitations; 0-5 for materials discussing sexting; and 0-8 for materials discussing online harassment. Coder agreement across items was between 75-100% for the 8 lessons that covered sexual solicitations or internet predators; between 66%-100% for the 3 lessons that covered sexting; and between 80-100% for the 10 lessons that covered online harassment.

Key Educational Message Coding Form. Across all 33 ISE presentations or lessons we reviewed, coders reported whether one of eight pre-specified ISE messages were included (e.g., "Think before you post;" "Don't share your password with anyone") and also recorded up to 5 additional educational messages present in the materials they reviewed. In order to be as expansive as possible, if a key message was recorded by either coder, it was included in analyses. The educational messages were grouped into 9 of the most frequent key message categories through an iterative process (see Table 4, Appendix D).

Results

First, overall content analysis results are provided for the KEEP scale and ISE Fact-Checking Sheets for the 16 ISE lessons reviewed using these forms. We then discuss the "key message" analysis conducted with all 33 coded ISE lessons.

KEEP Checklist

Results for the KEEP Checklist scoring are provided in Table 2, Appendix B and indicate that the reviewed ISE program lessons and curricula used few prevention education strategies that evaluation research has established as effective.

All of the programs provided "structured lessons" with adequate information on how to use their materials in a classroom or small-group setting. Most of the reviewed lessons also included active discussion sessions in which time was set aside for youth to respond to open-ended questions. For example, the Netsmartz activity card for the video "You Can't Take it Back" includes discussion questions asking: "What should the boy have done when his friends asked him to rate the website?" and "Think of legitimate responses he could have made that might have made his friends also reconsider their actions." These kinds of interactive discussions give youth an opportunity to engage critical thinking skills.

However, the reviewed programs generally failed to list skill-based learning objectives. Most objectives, when they were provided, reflected the goal of imparting knowledge to youth. Only two programs provided skill-based learning objectives and none of the reviewed programs provided research evidence linking the skills they taught with the safety goals. Only one of the reviewed programs, "Attitude Overdrive" by Netsmartz, included a role play to help youth practice new skills with peers.

Creative learning exercises had been included as part of the ISE programs: one example was to have youth answer "Dear Abby"-type letters by providing advice and information in response to hypothetical internet problems and victimizations. But these exercises were mostly designed to have youth repeat back learning points versus practice how they would handle problems themselves using new skills. Being able to repeat back lesson messages is an important component of education, but not usually sufficient to promote behavior change according to prevention research.

The reviewed programs also failed to provide an adequate dose for learning. All of the programs had created multiple lessons on a range of different ISE topics, but the lessons were typically offered as stand-alone topics. I-SAFE and iKeepSafe's Google Digital Literacy Tour Workshops came closest to being a multi-lesson curriculum, but each lesson still covered an entirely different ISE topic. No program that we reviewed provided a fully adequate dose of learning on one topic over multiple sessions, each one building upon skills learned in previous sessions. And, while some programs provided optional

take-home practice and informational sheets, no program that we reviewed included homework as an integrated part of the lesson or incorporated planned booster sessions.

ISE Fact Checking

Table 3, Appendix C provides the coding results for the three ISE Fact Checking Sheets. Results indicate that most ISE programs are also not consistently incorporating research-based information into their messages. The materials on sexual solicitations and internet predators included an average of 2 out of 7 possible research-based messages. Positively, none of the materials that we reviewed depicted internet predators as an older man who preyed on young children, a stereotype common in early ISE educational materials. Internet predator scenarios involved solicitors usually known to be an adult by the teenager, and youth who were flattered by the attention and felt close to their online contact: these dynamics are supported by research (Wolak et al., 2008).

Most of the ISE materials also mentioned, at least briefly, why it might feel difficult to tell an adult about such a relationship. However, none of the materials that we reviewed informed youth that internet predators were relatively rare, and talked about the more common experience of receiving unwanted sexual requests online by peers (Mitchell, Wolak, et al., 2007), or acknowledged that sexual assault by a person they know is much more likely than an unknown internet predator (Pereda, Guilera, Forns, & Gómez-Benito, 2009). Nor did materials acknowledge that we are still learning exactly what kinds of online behaviors put youth at risk for upsetting sexual requests online or what kinds of online relationships lead to harmful results.

Sexting behavior was the least common topic for the materials we reviewed. Materials on sexting included an average of 2 out of 5 research-based messages. None of the programs providing lesson materials on this topic reported that most youth do not "sext" (Mitchell, Finkelhor, Jones, & Wolak, 2011). Some, but not all, of the materials on this topic noted that it usually happens in the context of a relationship, acknowledged the different ways that youth might feel about getting a request for a sexual image, or noted that the most egregious behavior was to forward or send a sexual picture without permission. None of the reviewed material on sexting provided youth with detailed information about the elements of sexting behavior that are most likely to provoke the attention of police (Wolak, Finkelhor, & Mitchell, 2012).

Finally, the ten lessons focused on cyberbullying showed some inclusion of research-based messages, although not consistently (3 out of 8 research-based messages on average). Most included information on different options victims can try, and about how cyberbullying feels to victims. Some included information specifically on understanding how teasing and put-downs can be harassment and provided information on ways bystanders can be helpful. And none of the programs that we reviewed made the mistake of emphasizing suicide as a likely outcome of bullying. Popular media has highlighted suicide as a consequence of bullying, but its use in prevention is a scare-tactic that is strongly discouraged by suicide prevention experts (Suicide Prevention Resource Center, n.d.).

Unfortunately, other research-based messages were missing in the cyberbullying materials that we reviewed. None of the programs informed youth that most do not "cyber-bully" (Jones, Mitchell, & Finkelhor, 2013). None included information that peer harassment happens both on and off-line, or that off-line harassment is consistently found to be a problem for more youth (Beran & Li, 2007; Raskauskas & Stoltz, 2007). Few programs helped potential aggressors learn different strategies for handling anger, jealousy or feelings of being "insulted." And only one program showed adults providing positive help.

Key ISE Messages

Finally, in order to systematically review the most common ISE messaging approaches, all 33 of the reviewed program lessons were coded for key messages. Table 4, Appendix D provides the results of these analyses, listing the 9 most common categories of ISE messages. For ISE programs targeting both older and younger children, the most common educational message was: "Tell an adult if something happens online that makes you uncomfortable." Children were often given specific information about what to report (e.g. "Report online predators or cyber-bullies.") and when to report ("Tell an adult if the harassment doesn't stop.") and some programs encouraged youth to save evidence of the harassment or concerning text or pictures. Another key educational message provided by almost all ISE programs was the instruction: "Don't share or post personal information online." Sometimes programs specified the kind of personal information that should not be shared, and some exercises were created to help children spot identifiable information in hypothetical screen-names or social network sites.

For elementary-aged youth, a common ISE message was to "Be wary of people you meet online;" and youth were told "Never meet in person with someone you meet online." Five out of the 8 ISE programs directed to younger children included these warnings, but 8 out of 16 programs targeted to older youth also contained this message—including all of the materials for older youth focused on internet predators. For older youth, another common message category were cautions to "Not bully" or "Be respectful." This was a broad category and most materials suggested something more specific such as "Don't be rude while gaming," "Don't spread rumors

online," or "Online jokes can go wrong." Another example of a message in this category was "Don't say it online if you wouldn't say it to someone's face."

The digital literacy materials had slightly different emphases in their messaging. Instructions to tell an adult about problems, not share personal information, and be respectful online were rarer although still present. More typical were the messages: "Think before you click or post" (66% of digital literacy materials); "Check your social network privacy settings and be careful who you friend" (55% of materials); and "Consider what the information you put online says about you" (55% of materials). These messages were also common in the ISE materials targeted at middle and high school-aged youth focusing on victimization issues like internet predators and online harassment.

Discussion

The findings of our content analysis suggest that most ISE curricula are not sufficiently incorporating educational strategies fundamental to effective youth prevention education: skill-based objectives, adequate dosage, and practice opportunities. The field has also been slow to include a growing research-base on internet safety problems like sexual solicitation and online harassment; although there is evidence that program developers have revised materials directed at older youth to better reflect some of that research. In other digital literacy topics, such as privacy and digital reputation, stock prevention messages have proliferated before research on these issues has been conduct. Finally, ISE materials directed at young children in particular provide vague messages based on stereotypical and hypothetical scenarios.

Recommendations for Future Internet Safety Education Efforts

1. Improve educational strategies. Based on our findings, ISE programs need to place a greater emphasis on skill-building. Messages that tell youth to not cyber-bully or share sexual pictures with a boyfriend are unlikely to make a difference a(Hahn et al., 2007; Rispens, Aleman, & Goudena, 1997; Tobler & Stratton, 1997). These are complex social and emotional behaviors for adolescents, and youth need a chance to discuss and practice new behaviors (Durlak, 1995; Durlak et al., 2010).

It is also not sufficient to teach skills that sound appealing: there must be an established connection between the skill and problem. If the skill (e.g. protecting private information) is unrelated to the actual problem--it is unlikely that a reduction in the problem will occur as a result. ISE program developers must do a better job identifying how the skills taught through their program will improve internet safety, based on research.

Finally, program developers also must build in adequate time for youth to learn and practice the skills (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Durlak et al., 2010). Complex problems like peer harassment, risky sexual decisions, and unhealthy romantic relationships require more than one 45-minute lesson to impart new ways of thinking and skills that can improve healthy decision- making. Research has shown that new skills can be taught to youth in a relatively short amount of time (Durlak et al., 2011; Rooney & Murray, 1996; Stice, Shaw, Bohon, Marti, & Rohde, 2009; Stice, Shaw, & Marti, 2006), but more than one or two lessons are needed.

2. Use research-based content. It was clear from our review that ISE programs need to draw more from research in developing content. For example, prevention programs need to provide youth with accurate rates of these problems. Most youth do not engage in harassing behaviors online, do not send sexual pictures, and internet predator abductions are very rare (Jones et al., 2013; Mitchell et al., 2011; Wolak et al., 2008). Implying problems are more prevalent than they are may lead youth to discount the messages, or possibly even back-fire by giving youth the idea that concerning behavior is not so bad because most kids are doing it (Perkins, 2002; Perkins, Craig, & Perkins, 2011).

Additionally, knowledge about child development needs to be better incorporated into ISE. Internet use and challenges vary quite dramatically by age (Jones, Mitchell, & Finkelhor, 2012; Livingstone, 2009). The ISE materials for younger children relied on stereotypes and vague messages, and few children under ten years of age are exposed to the problems and scenarios that they targeted. The information directed at middle-school and high-school youth was better matched to development across the programs that we reviewed, but little of the material on internet predators, even those directed at high school youth, discussed frankly why attention from adults might be flattering, why young people might be inclined to respond and engage in sexual talk and activities, and what the actual risks might be: not primarily abduction, forcible rape and murder.

3. Explicit and sound program logic. Most of the popular educational messages found in our analyses had faulty or unclear logic models. For example, advice to youth to "Think before you click" appears to be based on the idea that impulsivity is causing online problems, and that if youth would pause and reflect before posting or sending, they might soften an aggressive text or withhold an inappropriate photo. But there is no evidence confirming that impulsivity is a key to internet safety problems. Problematic youth decision-making in these contexts may have more to do with anger, attention seeking, or exploring sexual identity rather than impulsivity.

Another example is "Don't share personal information." The logic model behind this advice appears to be that

youth can avoid becoming the victims of sex crime, identity theft or commercial exploitation if they never provide their names, addresses, emails, or schools. But giving out personal information like one's email or address and posting pictures is a widespread part of online activity and is required for many activities. And research actually suggests that sharing information is not a risk factor for online problems (Ybarra, Mitchell, Finkelhor, & Wolak, 2007). It might be helpful if youth could discriminate safe versus unsafe and risky contexts when considering whether to give out or post personal information, but we have no research or knowledge base yet to help with such decisions. Generic, broad, or overly conservative messages are likely going to be dismissed by youth as unrealistic or infantilizing.

Even the common ISE recommendation, "Tell an adult," is problematic. This message implies that many youth confronted by problematic online situations have not thought about telling an adult and need to be reminded of this option. But most youth who fail to disclose are probably aware that they can tell an adult and are choosing not to. Research suggests that most youth are skeptical that telling actually helps (Davis & Nixon, 2010) and report that such disclosures often result in no change or can even make things worse (Bradshaw, Sawyer, & O'Brennan, 2007). Youth may also be ashamed or embarrassed to reveal what they have been doing or to broach the topic of sex with an adult. They may worry about getting in trouble, or that some of their own problematic online behavior will come to light. Making the issue of "telling" even more complex, the youth running into trouble online are often the very youth who have communication problems with parents and other adults to begin with (Ybarra, Mitchell, et al., 2007). So the real objective for ISE programs should be to overcome inhibitions about disclosure with role plays or other strategies that might make the obstacles seem less intimidating, or by helping adults communicate that they will handle such disclosures sensitively and skillfully.

Does ISE Make Sense as a Stand-Alone Prevention Issue?

A question that requires more consideration is whether stand-alone internet safety education is an efficient and desirable prevention strategy. Most of the online problems being targeted by these programs have closely related offline counterparts that are virtually never discussed. Sexual assault by someone known offline is much more common than sexual assault by someone met online (Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009), and the dynamics are similar in many ways. Additionally, research consistently tells us that in-person peer harassment is more frequent than online harassment (Finkelhor, Turner, Shattuck, & Hamby, in press), and tends to be closely connected (Ybarra, Boyd, Korchmaros, & Oppenheim, 2012; Ybarra, Diener-West, & Leaf, 2007; Ybarra, Espelage, & Mitchell, 2007). Prevention education time in school environments is a scarce resource and having stand-alone programs for internet safety may put them in competition with other prevention needs involving problems that are even more frequent or serious.

Additionally, research and analysis of school-based prevention programs in a variety of domains shows that many of them share common goals. They generally try to impart refusal skills (e. g., refusing drugs, unwanted sex, or participation in bullying), increase empathy with others, get youth to consider longer term consequences, and help youth master strong emotions and overcome inhibitions about seeking help. This integrative approach is increasingly informing the development of widely used and tested social and emotional prevention programs (Durlak, 1995; The Collaborative for Academic Social and Emotional Learning, 2003). The preferred trajectory for ISE experts may be to integrate the specific electronic environment skills they teach into broader educational and prevention programs, rather than to compete as unconnected efforts.

Study Limitations

Coding and categorizing content requires a degree of subjectivity. While we followed standard content analysis procedures and used a double-coding process as a check on reliability, the process yields an exploratory versus conclusive summary of the status of current ISE education efforts. Moreover, the programs that have been reviewed here are under continual development, and there may have been updates that occurred after our review was completed. There may also have been new ISE programs developed since this review that incorporate a greater number of research-supported elements. Nonetheless, we believe the KEEP and Fact-Checking forms offer a useful framework for appraising ongoing ISE efforts in a way that can guide consumers and policy-makers to consider the elements that define more promising programs.

Conclusions

It is time to move ISE to a next level of maturity. There needs to be more definition of outcomes in providing "digital literacy" and "digital citizenship" education and a need to rethink, in particular, what kinds of information very young children need to know about using the internet. We need to consider whether and for what topics stand-alone education efforts make sense and when integration with existing prevention would be more efficient. Finally, the entire field needs to adopt an evaluation orientation when considering the future direction of ISE. Not only is evaluation necessary for ensuring that time and money are spent on effective education and prevention, but if evaluation was anticipated by all stakeholders from the start, it is likely that program developers would define outcomes more clear and tie educational strategies directly to outcomes.

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FOR FURTHER INFORMATION

The Crimes Against Children Research Center (CCRC) conducts a wide range of research on youth Internet safety. Descriptions of this research and links to our papers can be found on the CCRC website: http://www.unh.edu/ccrc/internet-crimes/

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APPENDIX A
Table 1. ISE Materials Reviewed by Content Evaluation

Program	Presentations/Lessons	Target Age[1]	Topic: Internet Predators	Topic: Online Harass.	Topic: Sexting	Topic: Other[2]	Coding Form[3]
Netsmartz	**Presentations**						
	Tweens PowerPoint Presentation	MS	■	■	■	■	L
	Teens PowerPoint Presentation	HS	■	■	■	■	L
	Assemblies Grade 3-6	E				■	S
	Router's Birthday Surprise	E				■	S
	Videos w/ Activity Cards						
	Terrible Text	MS, HS		■		■	L
	Survivor Diaries	MS, HS	■				L
	Amy's Choice	MS, HS	■				L
	Attitude Overdrive	Older E, MS		■		■	L
	Cyberbullying Broken friendship	MS, HS		■		■	L
	Cyberbullying You can't take it back	MS, HS		■			L
	Julie's Journey	MS, HS	■				L
	Tracking Teresa	MS, HS				■	S
	Miketosis	Older E, MS				■	S
	Posts 2 Be Private	Older E, MS				■	S
	Profile Penalty	Older E, MS				■	S
	Don't Open that File	E				■	S
	Boy who loved IM	E				■	S
	Password Rap	E				■	S
i-SAFE	Cyberbullying	MS		■			L
	Examining the Risks: Willing Participation	MS	■				L
	Thinking Things Through--Online Friending	MS, HS				■	S
iKeepSafe	Google Digital Literacy Tour Workshops: Playing and Staying Safe Online	Not specified		■		■	L
	Google Digital Literacy Tour Workshops:Detecting Lies and Staying True	Not specified				■	S
	Google Digital Literacy Tour Workshops: Steering Clear of Cyber Tricks	Not specified				■	S

Program	Presentations/Lessons	Target Age[1]	Topic: Internet Predators	Topic: Online Harass.	Topic: Sexting	Topic: Other[2]	Coding Form[3]
	Project PRO (Privacy and Reputation Online)	Older E, MS, HS					S
	DARE/iKeepSafe Cyberbullying Curriculum	E					S
	Faux Paw Meets the First Lady: How to Handle Cyberbullying	E					S
	Faux Paw Adventures on the Internet	E					S
Web Wise Kids	It's Your Call	MS					L
	Missing	MS					L
	Mirror Image	HS					L
	Be Seen	MS, HS					L
	Air Dogs	HS					S

Note: Shaded areas represent topics covered by each reviewed program.

[1]E=Elementary, Grades K-6; Older E=Older Elementary, Grades 5-6; MS=Middle School, Grades 7-8; HS=High School, Grades 9-12

[2]Other digital literacy and citizenship topics: privacy, online reputation, avoiding cyber-scams, illegal downloads etc.

[3]L=Long Form; S=Short Form

APPENDIX B

Table 2. Checklist for Effective Prevention Education Elements for Internet Safety Materials directed at Middle and High School Youth

			Skill-Based Objectives		**Active Learning**			
Program	Curriculum	**Structured Lessons**	A) Skill-based lessons	B) Research links skills and problem reduction	A) Role-playing activities	B) Discussion periods	**Adequate Dose**	**Added Learning Oppor-tunities**
Netsmartz	Tweens Presentation	✓	--	--	--	--	--	--
	Teens Presentation	✓	--	--	--	--	--	--
	Terrible Text	✓	--	--	--	✓	--	--
	Survivor Diaries	✓	--	--	--	✓	--	--
	Amy's Choice	✓	--	--	--	✓	--	--
	Attitude Overdrive	✓	--	--	✓	✓	--	--
	Cyberbullying Broken friendship	✓	--	--	--	✓	--	--
	Cyberbullying You can't take it back	✓	--	--	--	✓	--	--
	Julie's Journey	✓	--	--	--	✓	--	--
iKeepSafe	Google Digital Literacy Tour: Playing and Staying Safe Online	✓	✓	--	--	✓	--	--
Web Wise Kids	It’s Your Call	✓	--	--	--	✓	--	--
	Missing	✓	--	--	--	✓	--	--
	Mirror Image	✓	--	--	--	✓	--	--
	Be Seen	✓	--	--	--	✓	--	--
i-SAFE	Cyberbullying	✓	✓	--	--	✓	--	--
	Examining the Risks: Willing Participation	✓	--	--	--	✓	--	--

APPENDIX C

Table 3. Inclusion of Research-Based Messages for Internet Safety Materials directed at Middle and High School Youth

Research-Based ISE Messages	NS: Tweens Pres.	NS: Teens Pres.	NS: Terrible Text	NS: Survivor Diaries	NS: Amy's Choice	NS: Attitude Overdrive	NS: Broken friendship	NS: You can't take it back	NS: Julie's Journey	IKS: Google Playing and Staying Safe Online	WWK: It's Your Call	WWK: Missing	WWK: Mirror Image	WWK: Be Seen	I-SAFE: Cyber-bullying	ISAFE: Examining the Risks
Sexual Solicitations/Internet Predators[1]																
1. Internet predator cases are rare.	n	n	-	n	n	-	-	-	n	-	-	n	n	-	-	n
2. There is a difference between unwanted sexual requests and internet predators.	n	n	-	n	n	-	-	-	n	-	-	n	n	-	-	n
3. There are a number of different options for responding to a sexual solicitation.	y	y	-	n	n	-	-	-	n	-	-	n	n	-	-	n
4. There are a number of reasons why it may be hard to tell an adult.	n	y	-	y	y	-	-	-	n	-	-	y	y	-	-	y
5. Internet predator cases typically involve flattery and feelings of being close to the adult.	y	y	-	y	y	-	-	-	y	-	-	y	y	-	-	y
6. We are still learning about what online behaviors are risky.	n	n	-	n	n	-	-	-	n	-	-	n	n	-	-	n
7. Sexual assault by someone you know in person is a greater risk.	n	n	-	n	n	-	-	-	n	-	-	n	n	-	-	n
TOTAL (# out of 7)	**2**	**3**	**-**	**2**	**2**	**-**	**-**	**-**	**1**	**-**	**-**	**2**	**2**	**-**	**-**	**2**

Note: NS=Netsmartz; IKS=IKeepSafe; WWK=WebWiseKids

[1] 1. Finkelhor, Wolak, and Mitchell (n.d.); Wolak et al. (2008); 2. Wolak et al. (2008); 3. Mitchell, Wolak, et al. (2007); Wolak, Mitchell, and Finkelhor (2006); 4. Guilamo-Ramos, Jaccard, Dittus, and Collins (2008); Holtzman and Rubinson (1995); Mitchell et al. (2001); Wolak et al. (2008); 5. Finkelhor et al. (n.d.); Wolak et al. (2008); 6. Finkelhor et al. (n.d.); Wolak et al. (2008); Ybarra, Mitchell, et al. (2007); 7. Mitchell et al. (2011); Pereda et al. (2009)

Research-Based ISE Messages	NS: Tweens Pres.	NS: Teens Pres.	NS: Terrible Text	NS: Survivor Diaries	NS: Amy's Choice	NS: Attitude Overdrive	NS: Broken friendship	NS: You can't take it back	NS: Julie's Journey	IKS: Google Playing and Staying Safe Online	WWK: It's Your Call	WWK: Missing	WWK: Mirror Image	WWK: Be Seen	I-SAFE: Cyber-bullying	ISAFE: Examining the Risks
Sexting[2]																
1. Most youth do not "sext."	n	n	-	-	-	-	-	-	-	-	n	-	-	-	-	-
2. Sexting usually happens in the context of a relationship or goofing off.	n	y	-	-	-	-	-	-	-	-	y	-	-	-	-	-
3. Youth are likely to feel many different ways when they get a request to "sext."	n	y	-	-	-	-	-	-	-	-	y	-	-	-	-	-
4. The most important thing is to not forward sexual pictures if you receive them[3].	n	n	-	-	-	-	-	-	-	-	y	-	-	-	-	-
5. Most police intervention happens in cases of blackmail, bullying, or forwarding without permission.	n	n	-	-	-	-	-	-	-	-	n	-	-	-	-	-
TOTAL (# out of 5)	**0**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**	**-**	**-**	**-**	**-**
Online harassment/Cyberbullying[4] *Materials provide information that…*																
1. Most youth do not engage in cyberbullying.	n	n	n	-	-	n	n	n	-	n	n	-	-	n	n	-

[2] 1. Englander (2012); Lenhart (2009); Lounsbury, Mitchell, and Finkelhor (2011); Mitchell et al. (2011); 2. Lenhart (2009); Lounsbury et al. (2011); Mitchell et al. (2011); 3. Englander (2012); Lenhart (2009); Lounsbury et al. (2011); Mitchell et al. (2011); 4. Hinduja and Patchin (2010); Wolak and Finkelhor (2011); 5. Wolak and Finkelhor (2011); Wolak et al. (2012).

[3] Based on research indicating that explicit pictures forwarded without permission result in the most distress for youth and a greater chance of law enforcement involvement.

[4] 1. (Jones et al., 2013; Kowalski & Limber, 2007; Lenhart, 2007; Ybarra et al., 2012; Ybarra & Mitchell, 2007); 2. Agatston, Kowalski, and Limber (2007); 3. Suicide Prevention Resource Center (n.d.); 4. Patchin and Hinduja (2010); 5. Agatston et al. (2007); 6. Agatston et al. (2007); 7. Cassidy, Jackson, and Brown (2009); Lenhart et al. (2011); 8. Beran and Li (2007); Lenhart (2007); Raskauskas and Stoltz (2007).

Research-Based ISE Messages	NS: Tweens Pres.	NS: Teens Pres.	NS: Terrible Text	NS: Survivor Diaries	NS: Amy's Choice	NS: Attitude Overdrive	NS: Broken friendship	NS: You can't take it back	NS: Julie's Journey	IKS: Google Playing and Staying Safe Online	WWK: It's Your Call	WWK: Missing	WWK: Mirror Image	WWK: Be Seen	I-SAFE: Cyber-bullying	ISAFE: Examining the Risks
2. There are a lot of different options for handling online harassment.	y	y	y	-	-	y	n	n	-	y	n	-	-	y	y	-
3. Online harassment can feel bad in a number of ways, but does not usually end in suicide.[5]	n	y	y	-	-	y	n	y	-	n	y	-	-	y	n	-
4. There are strategies you can use to de-escalate when you feel angry or disrespected.	y	n	n	-	-	n	n	n	-	n	n	-	-	y	n	-
5. Teasing and put-downs online or offline may be harassment even if they seem harmless.	n	y	n	-	-	y	n	y	-	n	y	-	-	n	n	-
6. Bystanders can help in a number of different ways (examples shown/given).[6]	n	n	y	-	-	y	n	n	-	n	y	-	-	y	y	-
7. Adults may be helpful in a number of different ways (examples shown/given).[7]	n	n	n	-	-	n	n	n	-	n	y	-	-	n	n	-
8. A lot of bullying happens offline too and kind behavior should be practiced everywhere.	n	n	n	-	-	n	n	n	-	n	n	-	-	n	n	-
TOTAL (# out of 8)	**2**	**3**	**3**	**-**	**-**	**4**	**0**	**2**	**-**	**1**	**4**	**-**	**-**	**4**	**2**	**-**

[5] Based on research showing experiences of online harassment victimization range from not upsetting to very distressing. Although bullying and online harassment are risk factors for suicidal ideation and attempts, suicide as an outcome is rare, and has complex and multiple causes. Experts caution against portraying suicide as caused by bullying or cyberbullying (see for example: http://www.stopbullying.gov/at-risk/effects/index.html).

[6] Based on research indicating that youth have questions about how to help as a bystander.

[7] Based on research showing that many youth do not report because they do not know if adults can help. Materials showing helpful adults can both encouraging reporting, as well as help educate adults on ways that are helpful to respond.

APPENDIX D
Table 4. Key Educational Messages of Reviewed ISE Materials

Key ISE Messages	Examples	ISE Lessons Aimed at MS/HS Youth (n=16) #(%)	ISE Lessons Aimed at Elementary School Youth (n=8) #(%)	ISE Lessons Focused on Digital Literacy (n=9) #(%)	Total (n=33) #(%)
Tell a trusted adult or report if anything makes you uncomfortable online or you get into trouble	"Tell someone if you are cyberbullied." "Tell a trusted adult as soon as you become uncomfortable with an online discussion."	14 (88%)	5 (63%)	3 (33%)	22 (67%)
Don't share or post personal information online	"Don't share private information." "Never give out personal information." "Don't share your name and address."	12 (75%)	6 (75%)	3 (33%)	21 (64%)
Be respectful online/Don't bully	"Don't be mean." "Don't say anything online you wouldn't say to someone's face."	11 (69%)	2 (25%)	2 (22%)	15 (45%)
Think before you post or click	"Think before you click."	8 (50%)	1 (13%)	6 (66%)	15 (45%)
Check privacy settings and watch who you "friend" on social network sites	"Understand and personalize your SNS privacy settings." "You may not know friends of friends."	7 (44%)	3 (38%)	5 (55%)	15 (45%)
Be wary of people you meet online	"Never meet in person with anyone you meet online."	8 (50%)	5 (63%)	0 (0%)	13 (39%)
Consider what the information you put online says about you	"Negative information on SNS profiles will affect athletic and job opportunities."	6 (38%)	1 (13%)	5 (55%)	12 (36%)
What you put online can spread quickly and in ways you cannot control	"Once you post or text something, it is out of your hands."	4 (25%)	2 (25%)	0 (0%)	6 (18%)
Watch out for e-scams	"Scan attachments before opening them."	0 (0%)	1 (13%)	3 (33%)	4 (12%)