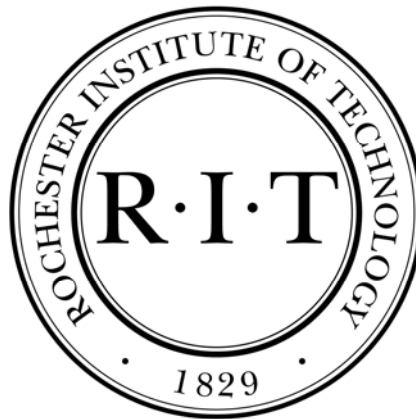


Report of the Rochester Institute of Technology

Survey of Internet and At-risk Behaviors

**Undertaken by School Districts of Monroe County
New York**

**May 2007 to June 2008
October 2007 to January 2008**



**By Samuel C. McQuade III, Ph.D.
Graduate Program Coordinator**

And

Neel Sampat, Graduate Research Assistant

**RIT Center for Multidisciplinary Studies
June 18, 2008**

Acknowledgments

The authors of this report wish to acknowledge and thank several individuals and organizations that made possible the *RIT Survey of Internet and At-Risk Behaviors*. Members of the Rochester Regional Cyber Safety and Ethics Initiative (RRCSEI) Executive Board who donated countless hours to help plan Initiative activities and procedures for surveying thousands of students along with hundreds of parents and teachers throughout Monroe County school districts. They are among a small group of educators, government officials and business people who understand the ways in which youth are now threatened and threatening each other online and the implications of this for social and educational reforms needed in society.

For their key leadership roles on the Executive Board and organizational support for the RRCSEI and RIT survey, the following individuals are recognized and thanked: Dr. Chris Manaseri, Superintendent of the Brighton Central School District; Jo Anne Antonacci, Deputy Superintendent Monroe-Orleans BOCES 2; Ed Suk, Executive Director of the New York Branch of the National Center for Missing and Exploited Children; Michael Miller, President of the Rochester InfraGard Member Alliance; and Allen Scalise, President of the Rochester Chapter of the Information Systems Security Association.

We also acknowledge and thank numerous individuals who represented and facilitated their districts' participation in the survey. These people included dozens of other school district superintendents, assistant and deputy superintendents, building principals and other district management team members, information technology service personnel, media enrichment staff, school counselors and teachers. Their combined efforts, and those of all members of the RRCSEI who participated in making this survey possible, have established a basis for Monroe County school districts to consider what can be done to prevent risky online behaviors by area students, and to do so in thoughtful dialog with parents and other members of the community.

Thanks are also extended to the 40,079 students and hundreds of parents and school district staff members who actually took the survey. They are thanked for taking the time and trouble to answer many questions, and for trusting RIT to respect their privacy and protect confidential responses to questions often of a very sensitive nature.

Organizations represented in the RRCSEI that also helped make this survey possible include the National Center for Missing and Exploited Children, the Information Systems Security Association, and the Rochester InfraGard Member Alliance. Special thanks are extended to Arbor Networks, Global Crossing, Great Lakes Networks, Symantec Corporation and Monroe-Orleans BOCES 2 all of which provided financial and/or in-kind support for the project. Chief among financial donors was Time Warner, Inc., which makes possible ongoing efforts of

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Members of the research team included Dr. Samuel C. McQuade, principle investigator. Graduate Research Assistants were Nathan Fisk and Neel Sampat. Elizabeth Fisk served as an independent consultant, and Dr. Howard Shaffer and Dr. Richard Labrie, both of Cambria Health Alliance Division on Addictions (a Harvard Medical School teaching affiliate), provided technical assistance.

The full list of RRCSEI Advisory Board members include:

- Dr. Chris Manaseri, Superintendent, Brighton Central School District
- Jo Anne Antonacci, Deputy Superintendent, Monroe-Orleans BOCES 2
- Jim Colt, Director of Security, Monroe BOCES 1
- Mary Connery, Director, Fairport Central School District
- Tom Gallagher, Superintendent, Wheatland-Chili Central School District
- Susan Gray, Superintendent, Penfield Central School District
- Mark Laubacher, Director Communications and Technology, BOCES 2
- Dr. Sam McQuade, RIT/CAST/CMS Graduate Program Coordinator
- Michael J. Miller, Vice President, Security, Global Crossing; and President, Rochester [InfraGard](#) Member Alliance
- Amy S. Perry-DelCorvo, Assistant Superintendent for Technology and Information Services, Monroe BOCES 1
- Sister Elaine Poitras, Diocese of Rochester Department of Catholic Schools
- Allen Scalise, President, Great Lakes Networks LLC and President RochesterChapter [Information Systems Security Association](#)
- Dave Pecora, Associate Director RIT, Information Technology Services Division
- Fred Rion, Emergency Management Specialist, Monroe County
- Ed Suk, Executive Director New York Branch, National Center for Missing and Exploited Children

Together we are learning how to make cyberspace safer for children, youth, parents, school staff members and other people throughout our community.

Samuel C. McQuade III, Ph.D.
Principle Investigator

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EXECUTIVE SUMMARY

In May 2007 through January 2008 fourteen Monroe County school districts in New York State participated in a major research study undertaken by the Rochester Institute of Technology (RIT). A major portion of the study was an online survey. It was designed to:

Measure the nature and extent of online victimization and offending experiences of K-12th grade students;

Determine types and levels of supervision and role modeling employed by parents pertaining to the use of computers and portable electronic devices by their children; and

Obtain information from teachers about their perceptions of school-related cyber abuse and crime, along with the potential need and challenges associated with implementing cyber safety and ethics instruction.

The survey project was the initial basis for establishing a partnership among RIT and approximately thirty school districts from throughout the Greater Rochester New York area, along with three prominent national organizations, including: (1) the National Center for Missing and Exploited Children (NCMEC), (2) the Information Systems Security Association (ISSA), and (3) Rochester InfraGard Member Alliance. InfraGard is an information sharing and analysis effort serving the interests and combining the knowledge base of a wide range of members.

These organizations initially joined forces in August of 2006 and eventually formed the Rochester Regional Cyber Safety and Ethics Initiative (RRCSEI). Monroe County school districts was actively involved in helping to create the RRCSEI, and shaping its mission of “advancing K-12 cyber safety and ethics education along with parent and workforce training in these topics through research, instructional programming, professional development, evaluation and public awareness.” Thereafter, Monroe County districts and numerous other area school districts agreed during the fall months of 2006 to participate in what became the *RIT Survey of Internet and At-risk Behaviors*.

This report explains how the survey project was designed and administered. It summarizes the results of Monroe County districts' student, parent and teacher versions of the survey and makes recommendations for staff development, instructional intervention and outreach to parents. This report is one of three being provided by RIT to Monroe County districts as part the RRCSEI study. Other reports to be provided to districts are (1) a district level analysis of survey findings report and (2) a *Content Analysis Report* of available online instructional resources that school districts may wish to consider using as a basis for providing Internet safety, information security and cyber ethics education.

SUMMARY OF KEY FINDINGS

Most children now begin using the Internet while they are at Kindergarten age or even younger. As they age they use more information technology (IT) devices such as laptop computers and cell phones to go onto the Internet and for more purposes such as electronic gaming, to chat with friends, to complete school work, and conduct research or shop online.

Online activities of students in K-12th grades involve appropriate and inappropriate behaviors and Internet content.

Data reveal that the more time youth spend online the more likely they are to engage in or experience various types of cyber abuse and offending.

Data also reveal that unlike traditional stereotypes, the majority of cyber offenses involving children, adolescents and young adults are perpetrated by peers of approximately the same age or grade level.

Young students remain vulnerable to being abused online by strangers as well as by people they actually know including their own friends. The old paradigm of adults preying on children has been replaced with the new reality that kids now regularly prey on each other online.

Cyber abuse and offending by and among youth includes:

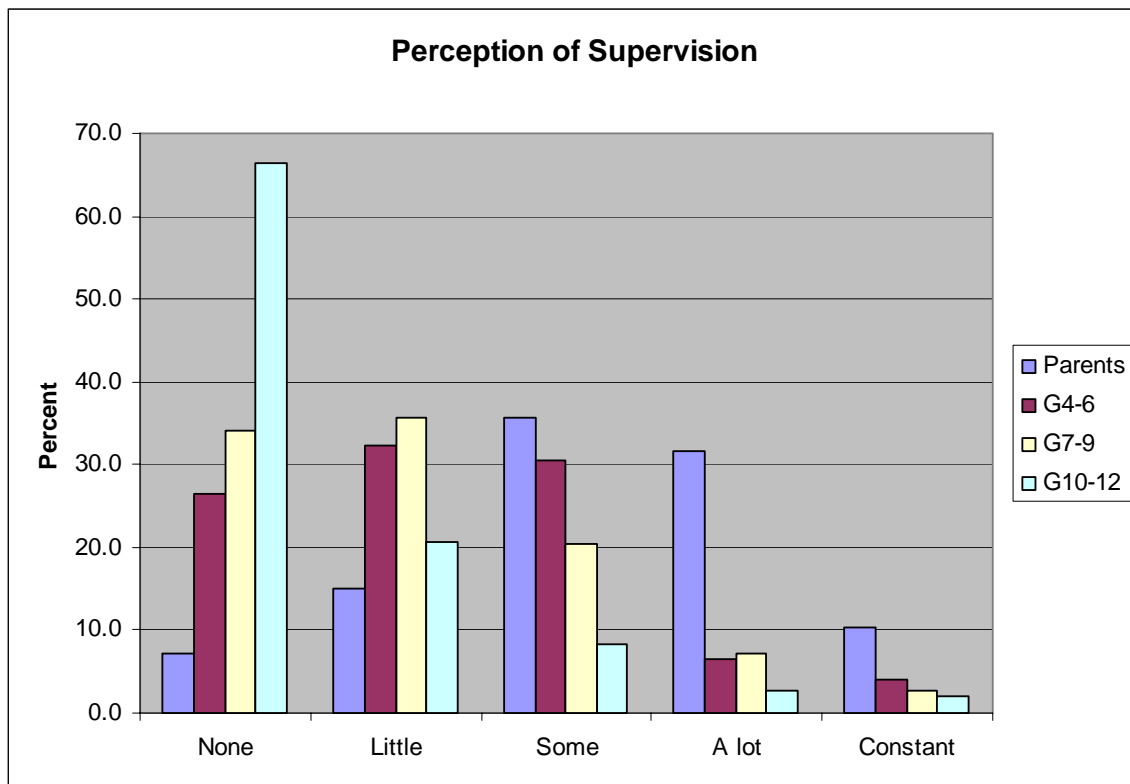
- Academic dishonesty such as cheating on assignments, and tests and plagiarism
- Cyber Bullying consisting of online embarrassment, harassment or threats
- Acquiring passwords and using computer systems without authorization
- Pirating of music, movies or software
- Lying about their age, appearance or identity often for social networking access
- Using credit card account information to commit fraud or access social networks
- Posting or sending indiscrete or nude photos and other personal data about themselves or other people online
- Sending sexual messages or solicitations for sex that are unwanted by recipients

Cyber bullying and victimization begins as early as the 2nd grade for some children. Illegal pirating of music, movie and/or software begins for many students in the 4th grade. By middle school students as a group experience and/or engage in all known forms of cyber abuse and offending.

Cyber bullying is prominent and also peaks in middle school, which is when online exchange of sex-related content begins. Cyber victimization, abuse and

crime generally continues and increases into high school years, which is when young adults begin to specialize in the forms of cyber offending (e.g., piracy, bullying and data snooping that involves activities like accessing computer systems without permission).

Survey findings reveal that students consistently believe they are less supervised than parents think they are. For example, while 66% of high school students reported that parents provide no supervision of their Internet activities, only 7% of parents surveyed reported that they provide no supervision.



Summary of Key Kindergarten-1st Grade Survey Findings:

- K-1st grade students access the Internet using various devices for a variety of purposes, including playing online games and communicating with other people. Online gaming is increasingly popular particularly among younger students.
- 48% of students at this grade level interact with people on Web sites, while only 50% indicate that their parents watch them when they use a computer, leaving the possibility of their being exposed to predation behaviors or other threats posed by online strangers or even persons they know or regard as friends.

- 48% reported viewing online content that made them feel uncomfortable, yet only 72% reported the experience to a grownup, meaning that one in four children did not.

Summary of Key 2nd – 3rd Grade Survey Findings:

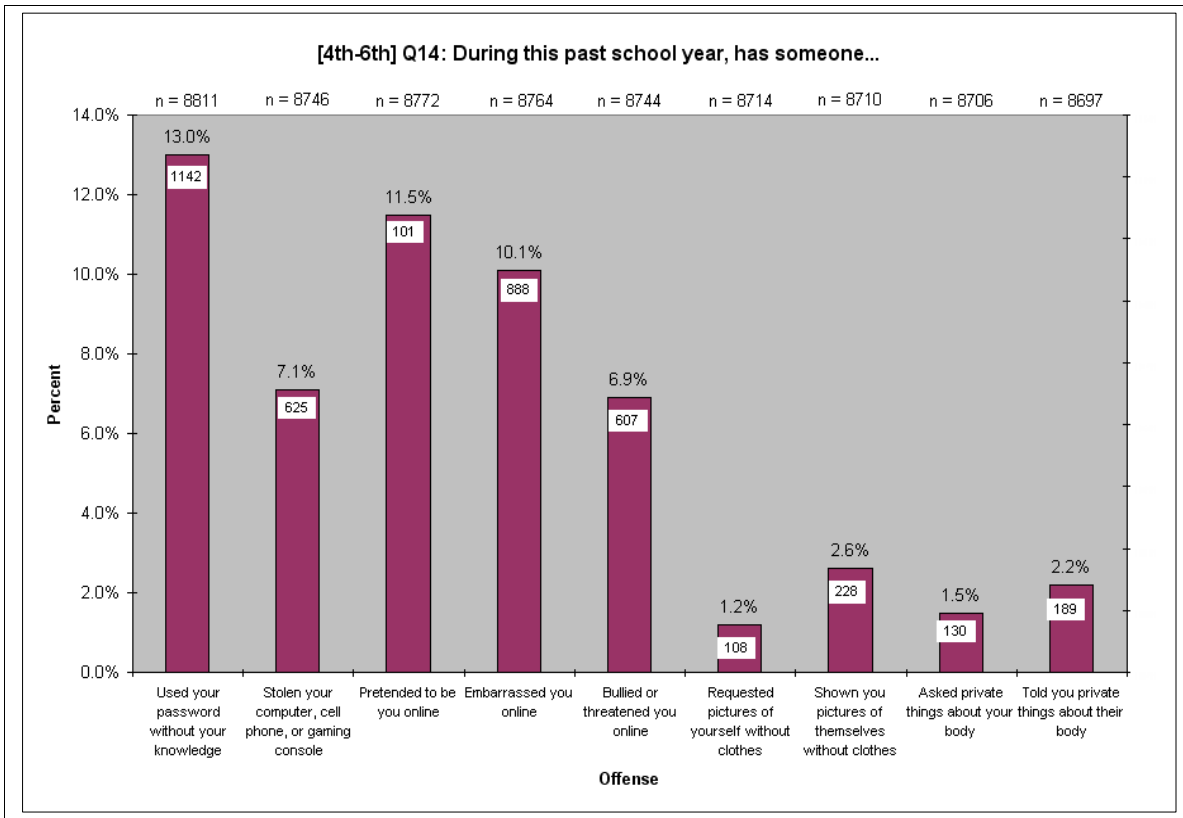
- 2nd – 3rd grade students also access the Internet using various devices for a variety of purposes, including playing online games and communicating with other people. Online gaming is increasingly popular particularly among younger students.
- Only 32% of students surveyed report being watched by their parents when they go online.
- 9% report having been “mean to someone online” (cyber bullying) and 18% report that someone online has been mean to them, within the last school year.
- 38% report having been exposed online to something that made them feel uncomfortable, and only 70% indicated that they reported that incident to a grown up, meaning about three in 10 children did not.
- 13% of students report that they used the Internet to talk to people they do not know, 11% report having been asked to describe private things about their body and 10% have been exposed to private things about someone else’s body.

Summary of Key 4th-6th Grade Survey Findings:

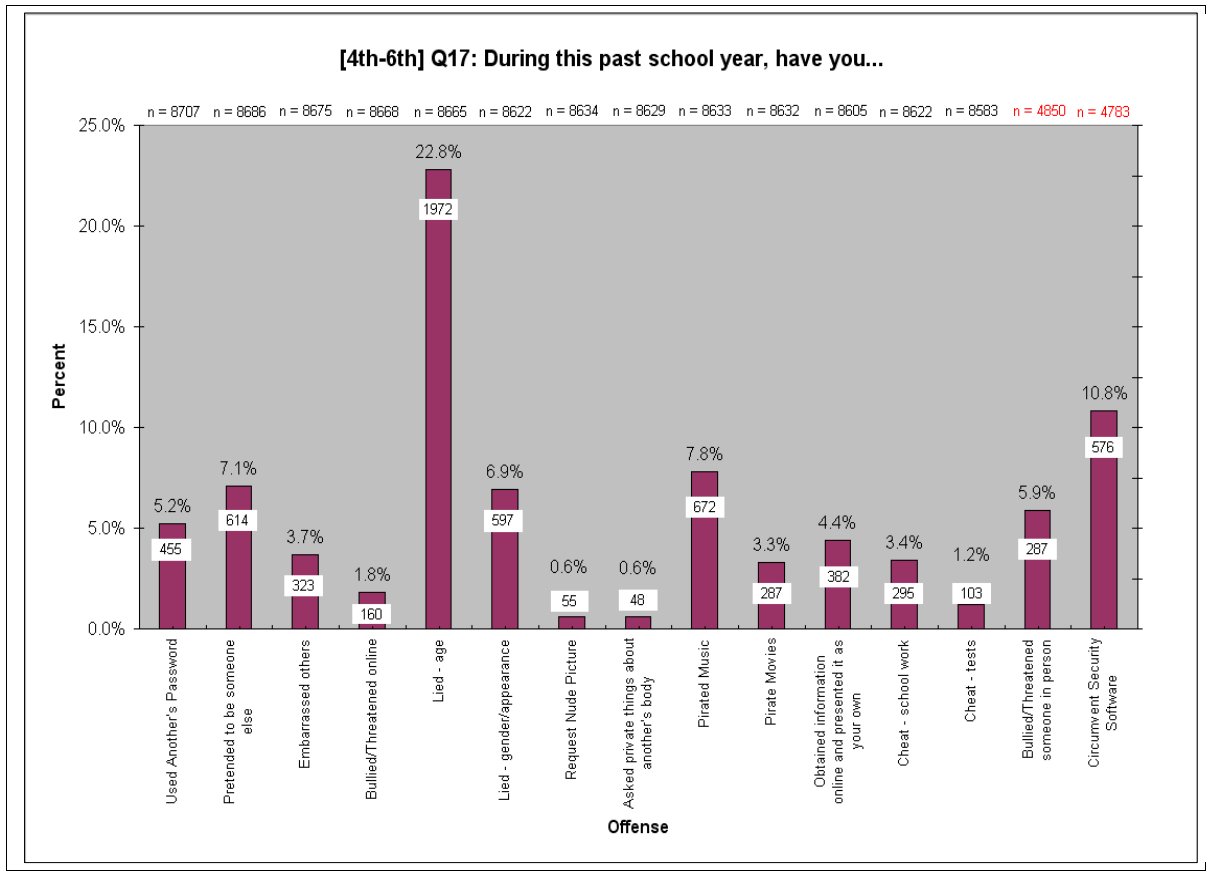
- 27% report that they are completely unsupervised when they go online, while 31% report they are watched by their parents “a little” or “sometimes.”
- Frequently children in these grade levels engage in social networking activities. In the process, they post personal, potentially exploitable, information about themselves online. Specifically, and within the last school year: 16% posted personal interests online, 15% posted information about their physical activities and 20% gave out their real name. In addition, 5% posted information about their school, 6% posted their home address, 6% posted their phone number and 9% posted pictures of themselves.

- 5% of students reported they have been asked online to meet in-person, and 4% of students have asked to meet someone in-person on the basis of their online interactions.
- 12% reported someone pretended to be them online and 13% report someone having used their password or online account without their permission.
- 7% of students reported being the victim of cyber bullying/threats. However, 10% of students have been embarrassed online, which along with harassment is often an aspect of being bullied online.
- 2% report being exposed to nude photos of other people, 2% report being asked private things about their bodies and 1% were asked for nude pictures of themselves.
- Music, movie and software piracy often begins at this age. Within the last school year 8% of students reported they have downloaded music and 3% admitted to downloading movies without paying for these.
- Most victims report the perpetrator of their cyber abuse to be one of their peers, either a girl (in 27% of cases), a boy (in 25% of cases) or a friend they know in-person (36%). Only 16% did not know the person responsible for the cyber offense.

4th-6th Grade Victimization Chart



4th-6th Grade Offending Chart

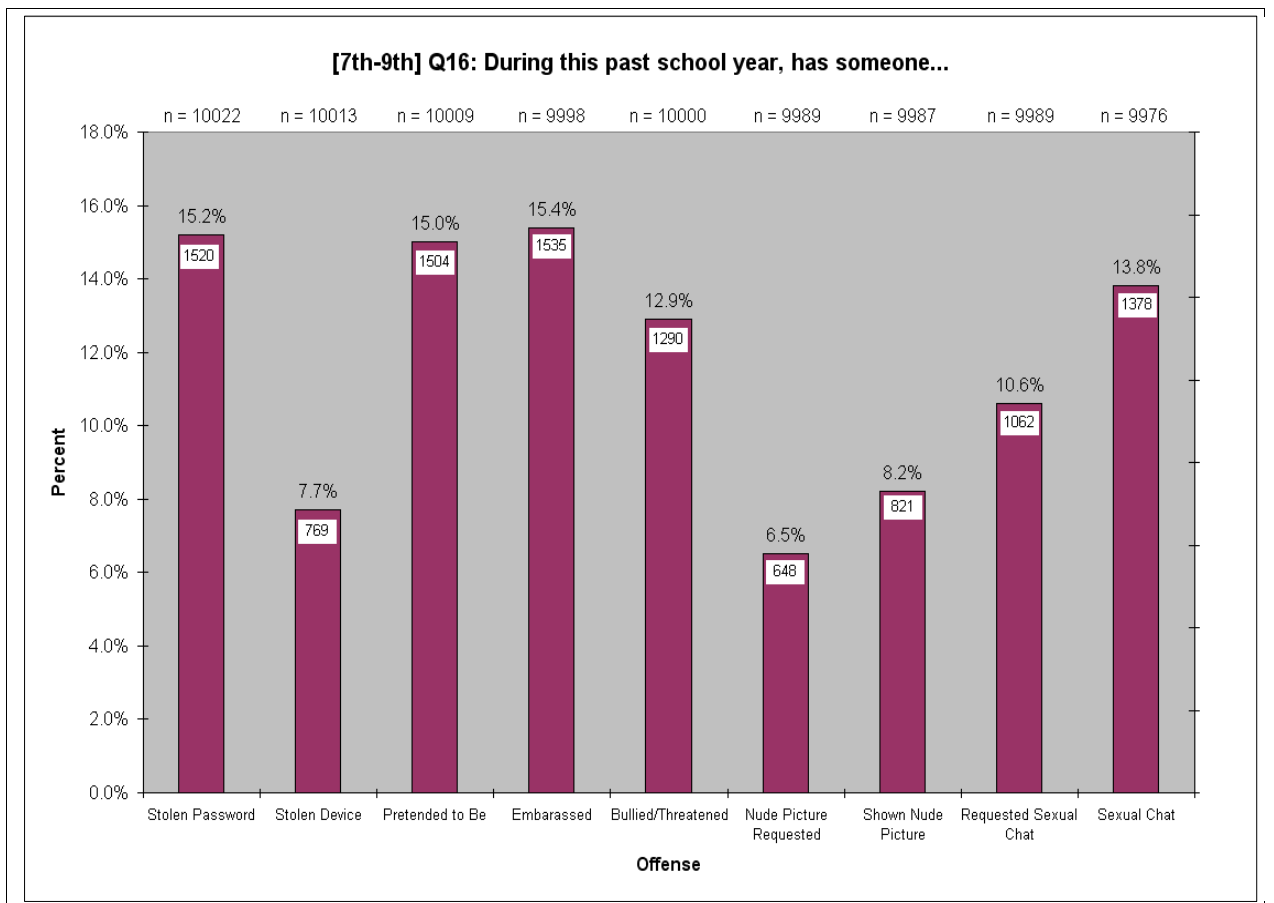


Summary of Key 7th-9th Grade Survey Findings:

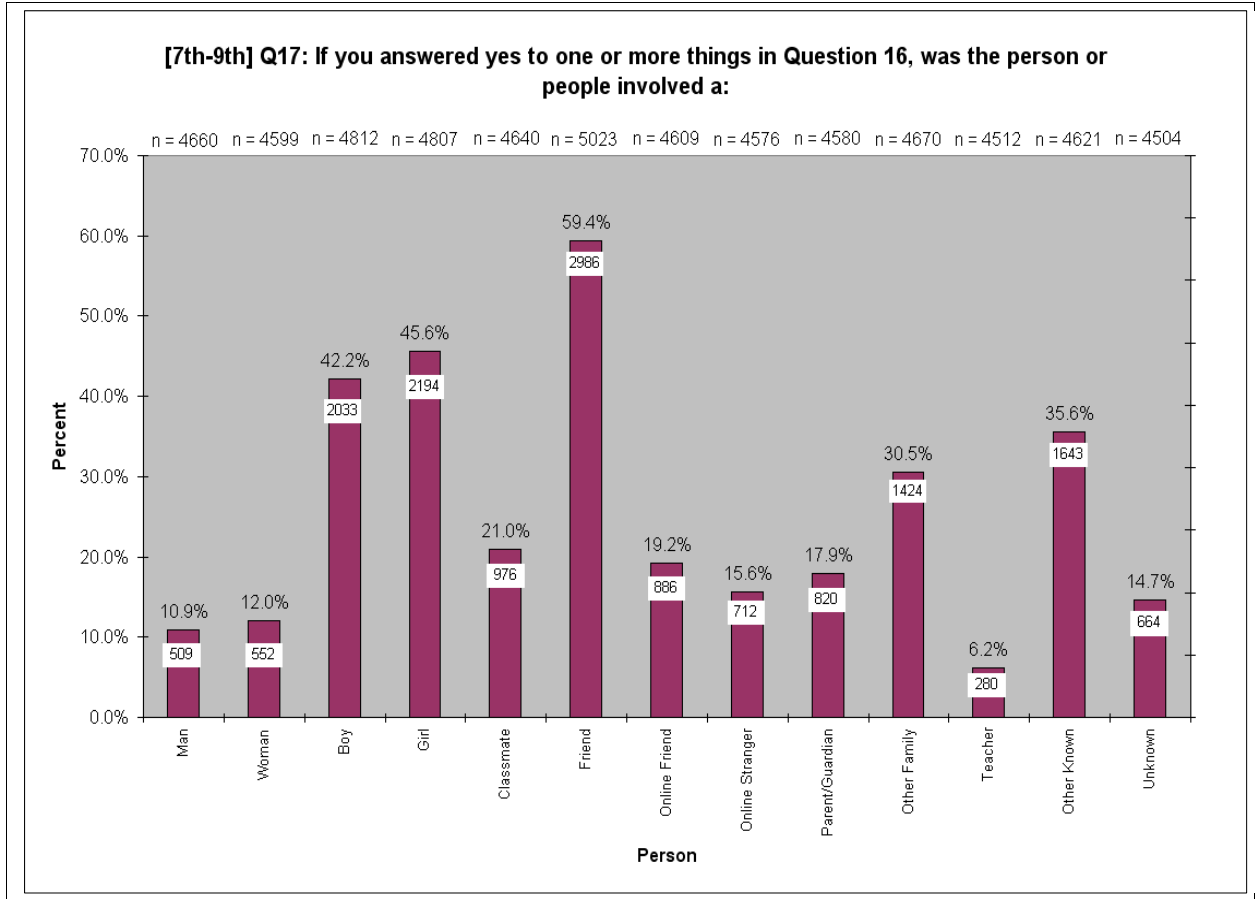
- As a group, 7th-12th grade students experience all known forms of cyber victimization and offending. Many individuals are victimized and/or commit various forms of online deceit, abuse or crime each year.
- 34% of middle school students report using the Internet with no supervision, another 36% report receiving only a little supervision.
- 42% report having spoken with at least one online stranger within the past year.
- 39% have posted photos of themselves, 36% have posted their real names, and 14% have posted their schedules and personal contact information.
- 9% have accepted an online invitation to meet someone in-person and 10% have asked someone online to meet them in-person.

- 15% have reported being embarrassed online and 13% indicate that they had been bullied or threatened online.
- 14% reported that they had communicated with someone online about sexual things; 11% of students reported that they had been asked to talk about sexual things online; 8% have been exposed to nude pictures; and 7% were also asked for nude pictures of themselves online.
- 59% of victims said their perpetrators were a friend they know in-person; 36% said it was someone else they know; 21% said the cyber offender was a classmate; 19% indicated the abuser was an online friend; and 16% said it was an online stranger.

7th – 9th Grade Victimization Chart



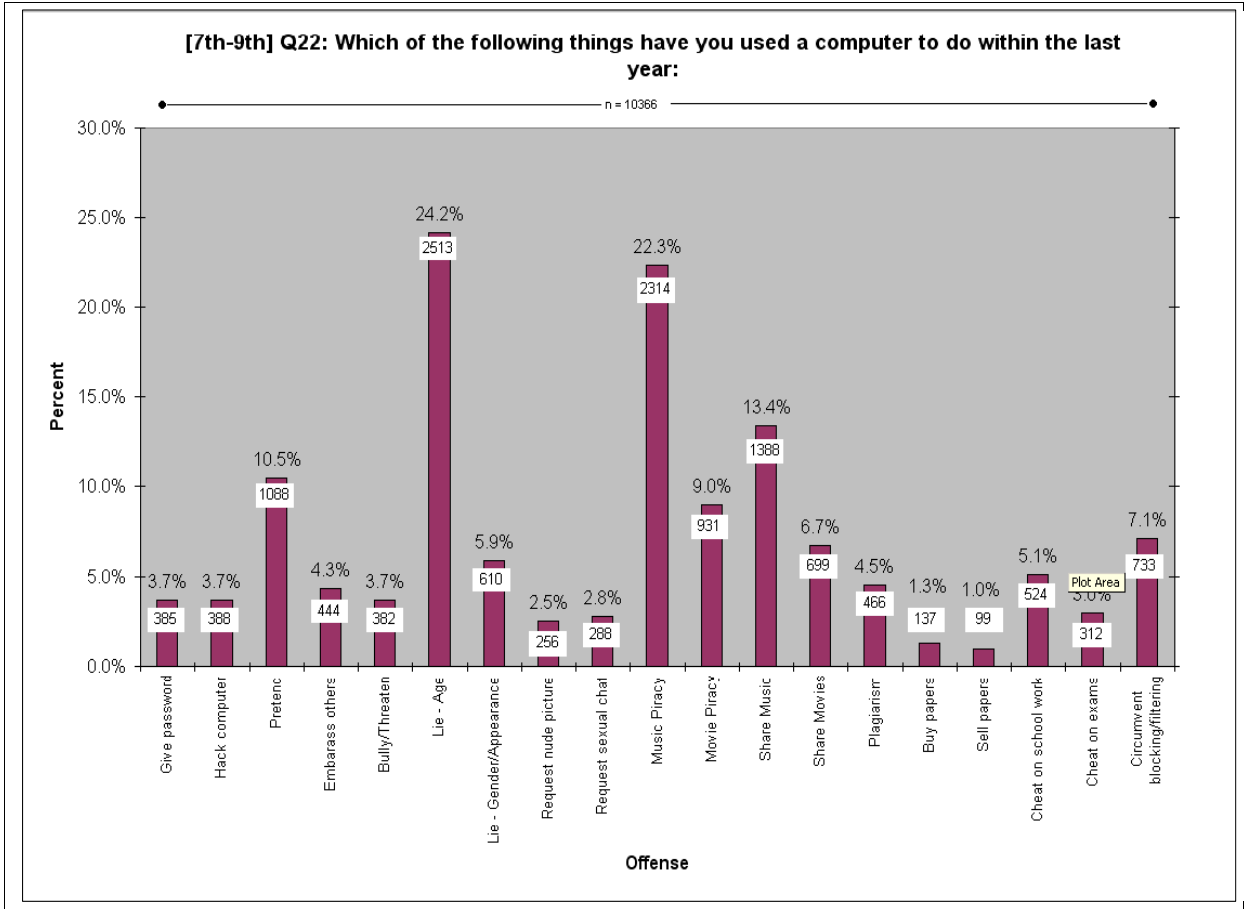
7TH – 9TH Grade Known Perpetrator Chart



- Students are more likely to be victimized by other students rather than by adults. Further, when peers are identified as perpetrators of cyber offending, 46% of the time they are girls and 42% of the time they are boys. However, only about 12% of known cyber offenders were identified by students as being a man or a woman.
- 22% of middle school students downloaded music within the last school year that they did not pay for;
- 11% pretended to be someone else online, 4% admitted to intentionally embarrassing another person online and 4% admitted to harassing or threatening another person online.
- 3% admitted to asking for naked pictures from another Internet user and 3% also admitted to soliciting sexual chat online.
- 7% reported circumventing security measures designed to block or filter access to Internet web sites.

- Data also reveal various type of academic dishonesty. 5% admitted to online plagiarism; 5% admitted to cheating on school work; and 3% admitted to cheating on tests.

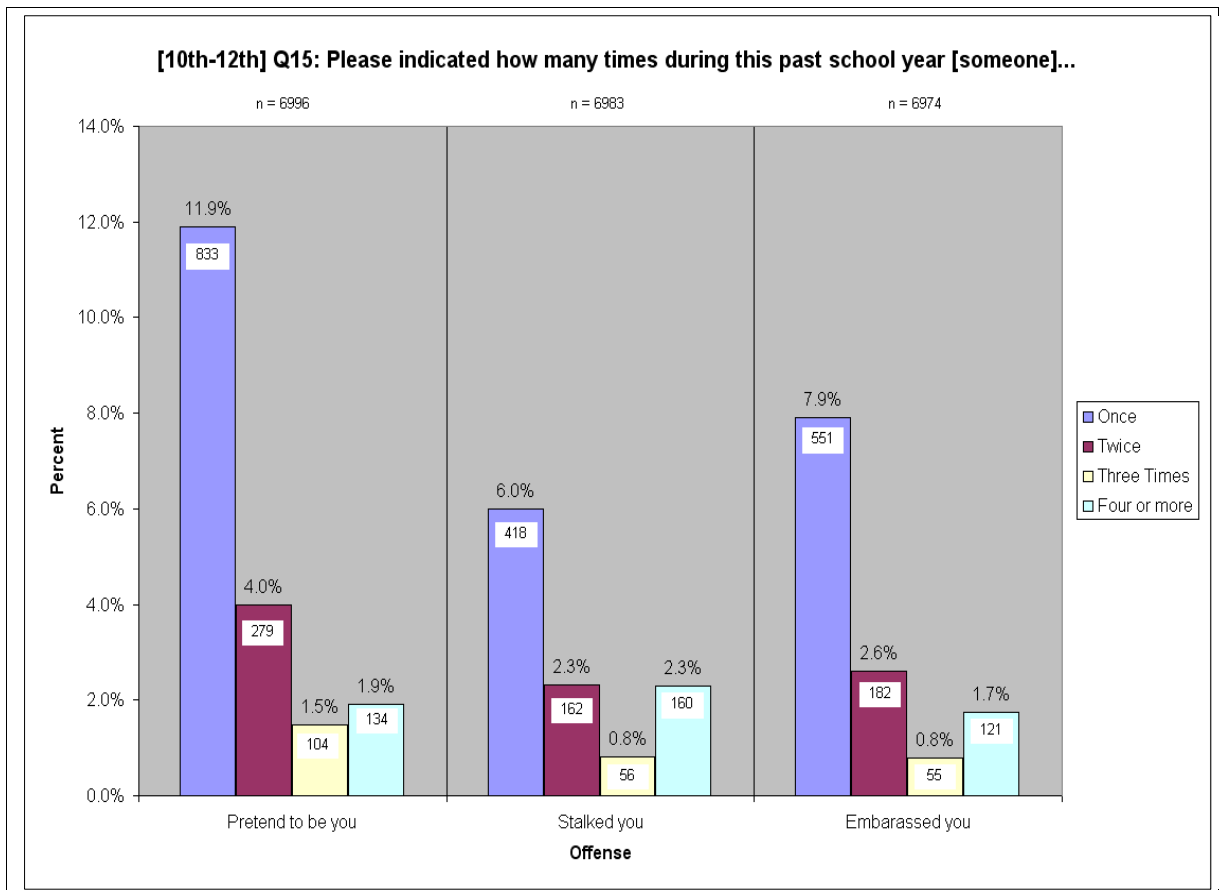
7th – 9th Grade Offending Chart



Summary of Key 10th-12th Grade Survey Findings

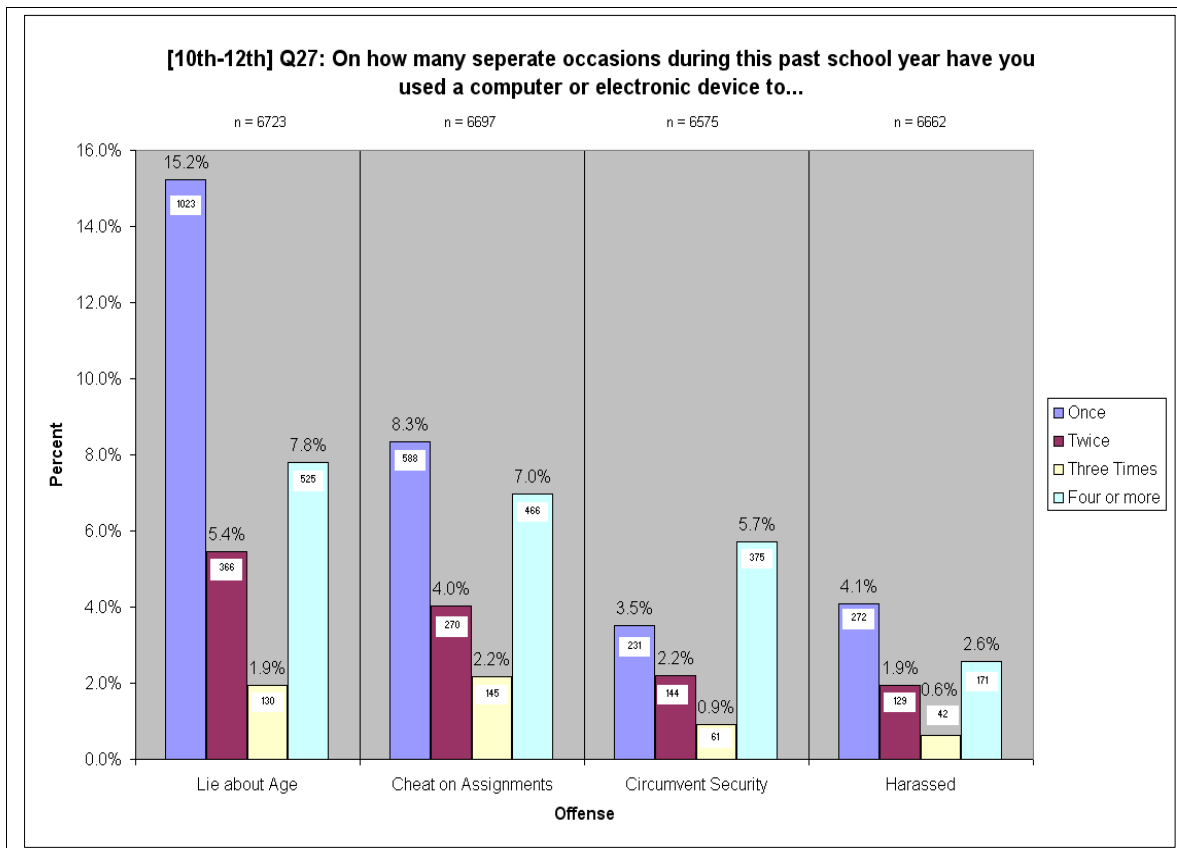
- Within the past year, many students indicated that they have used the Internet to interact with strangers in a variety of ways, including: chatting 48%; flirting 25%; providing personal information 22%; talking about private things 17%; and engaging in sexually oriented chat 15%.
- 14% have accepted an invitation to meet an online stranger in-person and 14% of students, who are usually the same individuals, have invited an online stranger to meet them in-person.
- 16% have experienced cyber bullying; 17% have been embarrassed online; and 15% have been harassed or stalked online.
- 23% have been exposed to unwanted pornography and 23% have been asked about sexual things online.

10th-12th Grade Multiple Victimization within Preceding Year (Selected Types of Offenses)



- 21% admitted using a computer or electronic device to cheat on a school assignment within the last school year. 12% admitted plagiarism and 9% reported having used a device to cheat on an exam.
- 65% have illegally downloaded music in the past year; 34% have illegally downloaded movies and 30% have illegally downloaded software.
- 12% of students in high school reported they circumvented computer security systems designed to filter or block their access to Internet web sites.
- 9% have admitted to harassing someone online and 8% have admitted to threatening someone online within the past year.

10th-12th Grade Multiple Offending within Previous Year (Selected Types of Offenses)



Summary of Key Parent Survey Findings

- 47% (n=376) of parents surveyed report that they enjoy using computers “A lot”.
- On average, parents report that there are three different kinds of computing devices owned by members of their household.
- 82% of parents report that their children routinely use desktop computers and 20% report that their children use laptop computers.
- 30% of parents surveyed indicated that their children routinely use a cell phone.
- 25% of parents feel that their child knows more about computer technology than they do, while 14% feel that they know the same about computers as their children do.
- 90% of parents surveyed indicated that there is an adult present to supervise home computing activities of their children.
- Parents generally are aware of filtering, blocking and information security software, but only 30% of parents surveyed reported they use these types of software.
- 61% of parents surveyed indicated their children access the Internet from a private place in the home.
- The most commonly observed computing activity by parents of their children was school research (reported by 76% of parents), playing video games (reported by 61% of parents) and watching movies or listening to music (reported by about 50% of parents).
- 14% of parents have caught their children doing something with a computer device that they should not have been doing.

Summary of Key Teacher Survey Findings

- A total of 889 teachers and other school district staff responded to their version of the survey.
- In general they feel that their school districts are well prepared to facilitate student learning through technology. Many faculty report using computer technology to facilitate learning in their classrooms.
- Faculty vary in the amount of professional training and education they have received about information security and technology.
- Relatively few teachers believe they are currently prepared to teach students in areas of Internet safety, information security or cyber ethics, though a majority believe these are important subjects for students to know. However, teachers of grades K-3 generally believe that these subjects are less important for younger students to know.
- School staff are divided in their perceptions about whether students know more about information technologies than they do, regarding whether student use of electronic devices in school are problematic, about their ability to supervise Internet activities of students on school property, and with regard to knowing what steps and capabilities their districts have to guard against inappropriate Internet activities of students.

SURVEY DESIGN AND ADMINISTRATION PROCEDURES

The *RIT Survey of Internet and At-risk Behaviors* was funded with single (onetime) contributions of \$2,000 from each of approximately twenty school districts most, of which elected to participate in surveying. These funds were provided to RIT through Monroe-Orleans BOCES 2 which serves as the lead school district for providing administrative support to the RRCSEI. Funding support was also provided by corporate and individual donors (see Acknowledgments), and through in-kind services provided by several organizational components of RIT as well as Monroe-Orleans BOCES 2.

In August 2006 representatives from area school districts and the NCMEC, ISSA and InfraGard met for the first time to begin developing plans for the survey project. By December a total of seven online survey instruments had been developed. Five instruments consisted of questions designed for students in the following developmentally distinct age/grade levels: K-1st grade; 2nd-3rd grade; 4th-6th grade; 7th-9th grade; and 10th-12th grade. Two additional survey instruments were developed: one for school district teachers and other staff, and another for parents of school district students. All instruments were designed for online survey administration using WebSurveyor software that was procured by RIT specifically for this project.

Specific survey questions were developed by RIT researchers under the direction of Dr. Samuel C. McQuade, the project's Principal Investigator. He and his colleagues were assisted by a large RRCSEI advisory team collectively familiar with lay literature and scholarly research bearing on cybercrime, online child victimization and education administration issues. Subject matter experts and consultants retained for the study were also involved in survey instrument design, review and testing. These individuals were drawn from the Cambria Health Alliance Division on Addictions (a Harvard Medical School teaching affiliate) and local area organizations known for staff expertise in research methods, human and early childhood development and school psychology.

The combined expertise of approximately 35 professionals representing or drawn from school districts and other organizations spanned several academic fields. Fields of expertise included: human development and child psychology; primary and secondary education instruction; school psychology and education administration; criminology and criminal justice systems administration; sociology and online social networking, information technology systems security and network administration; public administration; and public policy among other fields of expertise. The eclectic expertise of the researchers and advisory team resulted in a very sophisticated and multidisciplinary study design consisting of the largest, most comprehensive and in-depth sets of questions ever developed to examine issues related to the prevention of online abuse, offending and victimization.

Following their initial development all seven survey instruments were distributed for review and comment to RRCSEI members including school district representatives (approximately fifty professionals in all), representing numerous school districts and organizations affiliated with the project. They subsequently recommended content, structure and wording changes. Survey instruments were then revised several times until the RRCSEI membership agreed on the design and wording of questions in all seven instruments. Following this review and approval all survey instruments were then time-tested in February 2007. This was accomplished using paper (hardcopy) versions with small focus groups of individuals purposively selected from within the Fairport Central School District (parents and teachers), the Rush Henrietta School District (10th-12th graders), and the Diocese of Rochester schools (K-9th graders).

Time testing revealed that all surveys could be administered and completed within 30 minutes (the acceptable maximum as determined in advance by school district representatives to the RRCSEI). Field observations of time tests coupled with informal post-survey focus group interviewing by RRCSEI/research team members resulted in additional minor changes to the structure, content and wording of survey instruments. Field testing also enabled researchers to understand how best to administer surveys to K-3rd grade children who were necessarily scheduled to complete audible (“talking computer”) survey questions using headphones.

Following time-testing in the field the entire research study, including all final survey instruments, was reviewed and approved by RIT’s Institutional Review Board (IRB). (See surveys in Appendices A-G.) In its decision to approve the study the IRB carefully considered the importance of the research as balanced against potential risks to children and adult survey takers, along with matters pertaining to parental consent and child assent (i.e., voluntariness), privacy and data security among several other issues. As part of the overall IRB review the study was also determined by RIT’s Office of General Counsel to comply with federal regulations governing research involving human subjects. The study was also reviewed by the law firm of Harris Beach representing Monroe-Orleans BOCES 2 (and certain other school districts) and determined to be in full compliance with New York State education and student privacy laws.

With IRB and legal approvals secured, researchers began in April 2007 to provide survey administration training to designated school district staff. This training consisted of approximately two-hours of on-site instruction and computer demonstrations that addressed key procedural issues likely to be encountered by school district personnel when administering surveys to students. The goal was to provide designated individuals and teams of district representatives with sufficient information to replicate the training for other district staff as needed to accomplish surveying within designated school buildings. (See training presentation outline in Appendix H.)

As training was being provided to school district personnel, districts also began notifying other staff and parents of the impending surveys. Parents were notified with standardized cover letters that were developed by RIT and sent by districts as U.S. Mail. Included with the letters was the *Parent Notice and Permission for Minor to Participate in Research* form that was also developed by RIT and reviewed by the RIT-IRB. The letter and parent notice included background information about the survey; referred parents to the RRCSEI website (www.rrcsei.org) for examples of complete survey instruments and questions to be asked of students, parents and school staff; and explained opt-out procedures parents needed to follow if they preferred their children not participate in the survey.

Brighton, Diocese of Rochester, East Irondequiot, Fairport and Newark school districts surveyed students, parents and teachers beginning in May 2007 . Students completed surveys under staff/adult supervision during normal school hours in computer-equipped classrooms, libraries or computer labs. Other school districts began surveying in September 2007 (BOCES 1, Canandaigua, Greece, Hilton, Penfield, Pittsford, Rush-Henrietta, Webster and Wheatland-Chili). Taken together these districts represented urban, urban-bordering, suburban and rural schools located in Greater Rochester and upstate New York. The combined number of pilot surveys (spring 2007) and fall/winter responses (September 2007 – January 2008) in fourteen districts was 40,079 students, 889 teachers and 365 parents.

DISCUSSION OF SURVEY RESULTS

Monroe County school districts that completed the *RIT Survey of Internet and At-risk Behaviors* had an overall large sample. Of the 40,369 who initially accessed the informed consent and assent information, 40,079 students actually completed their version of the survey. Thus, the overall County response rate was 57% of an estimated 70,314 students enrolled in Monroe County school districts surveyed from spring-fall of 2007 into January 2008.

Within every grade cohort level responses were split evenly across gender lines with approximately 50% female and 50% male students in all grade cohorts. Barring extreme outliers within the higher grade levels, the reported ages of students taking surveys fell within customary age ranges (e.g. K-1st students were 5, 6, or 7 years of age.)

By way of further introducing survey results specific to each set of grade levels surveyed, readers of this report should understand that the data presented here are summaries primary (i.e., descriptive level) findings. This includes information that generally corresponds to most but not all survey questions in the order they were asked in each survey instrument (see Appendices A-G). Since more and more in-depth questions were asked of older students, reported findings and discussion of these in the following sections generally becomes longer and more complex. In all instances however, data reveal online experiences, perceptions and/or threats as reported by students, teachers and parents. As such the following sections are intended to guide decision-making in cyber-related education matters. They do not, however, include discussion of secondary analysis pertaining to more academic issues like profiles of particular types of cyber offenders or victims, or how such profiles correlate with reported substance abuse, social computing or indicators of so-called “computer/Internet addiction,” and so forth.

Lastly, when reading through the following data summaries, readers should keep in mind that the number of students of an age/grade cohort who initially accessed the survey may not have assented to answer any questions or some of the questions asked. Students were also allowed to stop taking the survey at any time and in most instances allowed to skip particular questions if they chose to. Consequently, response rates varied from one question to another. These differences are reported within parentheses that indicate the percentage of students among the number who answered a question in the particular way indicated. For example, suppose 1,000 students within an age/grade cohort initially accessed the survey but only 950 assented to voluntarily answer questions (i.e., “take the survey”). If only 850 students answered a given question of which 750 answered “YES” in response to that particular question, then the report will say that 750 students or 88% of them (i.e., 88%, of n=850) answered the question affirmatively. All statistics are rounded down to the nearest whole number.

Kindergarten – 1st Grade

A majority of Monroe County school district students in K-1st grade reported they have access to and use a computer while at home (91% of n=4,747 students who answered this question). Of students who do, (63% of n=4,459) reported they use their home computer to access the Internet. By extrapolation (.91 x .63), approximately 57% of K-1st graders attending Monroe County districts connect to the Internet while using a computer in their home. When they do, these students access a variety of content in connection with several different types of online activities.

The most prominent Internet activity engaged in by children in this age/grade level cohort is online gaming with 92% (n=2,796) of children reporting they “play games on kids websites.” Additionally, 66% (n=2,794) of Monroe County district K-1st graders “listen to music or watch videos” online, 48% (n=2,788) “read or write e-mail”, 48% (n=2,792) “look on websites for schoolwork” and 41% (n=2,792) “talk with people on a website.” These survey findings confirm that substantial proportions of very young children are immersing themselves in interactive media, and that their use of computers and the Internet is an integral aspect of their lives.

Fully 70% (n=2,784) of K-1st grade students surveyed reported that when they are connected to the Internet from home they “use the computer for a long time” rather than a “short time.” Many students at this level also report that they go online unsupervised as revealed by only 50% (n=2,784) indicating that their “parents watch them when they use the computer.” Note however, that the survey methodology cannot differentiate child perceptions of supervision with actual levels or means of supervision employed by parents (or other grownups in households). Still, the percentage of students who report their parents do not watch while they use their home computer (and presumably also when they use the Internet) is underscored by only 61% (n=2,785) of students reporting they are limited by their parents in the amount of time they are allowed to use computers at home. This is in contrast to 30% (n=2,785) of K-1st graders who reported they are watched by their parents when using their home computer and also limited in the amount of time they are allowed to use the computer.

As indicated above, some students use the Internet to communicate with other people. This reality reveals the possibility of their being exposed to predatory behaviors or other threats posed by online strangers or even persons they know or regard as online “friends.” In addition, survey data cannot make clear whether students who report that they “talk with people on a website” are actually communicating with real people versus animated (virtual) characters, or whether these subjects are real people actually known in-person by the child. However, of the 48% (n=2,775) of K-1st graders who reported viewing online content that

made them feel uncomfortable, only 72% (n=1,307) reported the experience to a grownup.

The preceding findings reflect answers from all sixteen questions asked of Kindergarten and 1st grade students. Data clearly indicate that about half of Monroe County districts' students who are between four and seven years of age use a home computer to access the Internet, engage in various online activities, experience various types of content (some of which makes them feel uncomfortable), and quite probably in many instances do so without adequate levels and/or methods of parental supervision.

Charts and tables of these data are provided in Appendix J.

2nd-3rd Grade

Results of 2nd-3rd graders who participated in the survey resemble those of the younger age cohort described above. Sixty-Seven percent (67%, n=5,540) of students surveyed reported having Internet access from some location not limited to their home, and by using a variety of electronic devices, including: computers (96%, n=3,689); cell phones (14%, n=3,670); home video game consoles (21%, n=3,676); and/or portable video game consoles (23%, n=3,665).

As with their younger counterparts, a majority of 2nd-3rd graders engage in online gaming (94%, n=3,676) among other types of online activities. However, at these grade levels the same amount of students proportionately reported accessing online music and video content (60%, n=3,668) in comparison to the K-1st cohort, while the same percentage reported they access websites for schoolwork (36%, n=3,664) or to communicate with other people online (specifically with family or friends online at 37%, n=3,667).

These findings are consistent with the reality that many students within this grade cohort are only beginning to read/write and thus limited in their ability to understand text-based Internet content to establish communication channels. Within this age/grade cohort, the percentage of students who report being watched by their parents when they go online decreases to 32% (n=3,665). A little over half of 2-3rd grade children surveyed report their parents limit the amount of time they can spend online (50%, n=3,658)¹.

As students acquire skills necessary to communicate with each other online and begin to do so, the potential for cyber bullying increases. Survey data show that

¹ Specific reasons for the drop in parental supervision are unclear, although it is well understood that parents have more confidence in their children as they age. Thus, if the previous (K-1st) cohort data were applied retrospectively to this cohort, a majority of 2-3rd graders who took the survey in spring 2007 actually began using their home computers to access the Internet when they were younger and arguably are now in need of less supervision. This same principle holds for all students: as they age they need less supervision, and when older may require greater levels of privacy with regard to their use of computers and portable IT devices.

9% (n=3,676) of students at this age/grade level report having been “mean to someone online” with 18% (n=3,671) reporting that someone online has been mean to them.

Some students are experiencing both cyber bullying roles, with 2% (n=3,671) reporting that they have been mean and also have had someone been mean to them online within the last year. Thus, the age of onset for cyber bullying (that which may eventually escalate into some combination of online threats, harassment, intimidation or intentional embarrassment) appears to begin for some students in the 2nd grade. However, here again, readers should interpret these data cautiously, because the survey questions do allow for discernment of “how mean” or “in what ways” being mean online occurs at this age/grade level.

While online 38% (n=3,568) of Monroe County school district 2-3rd graders report having been exposed to something that made them feel uncomfortable. The exposure to online strangers is clear, with 13% (n=3,671) of students reporting that they used the Internet to “talk with people... [they] do not know.”

Additionally, 11% (n=3,654) reported having been asked to describe “private things about [their] body” and 10% (n=3,656) have been exposed to “private things about [someone else’s] body.” Note that as previously indicated, such content may have been provided by someone the child actually knows and interacts with offline, or does not know either directly or incidentally (e.g., via a website), just depending on how the child interpreted the following specific survey questions:

Q28. Has someone online on the Internet ever asked you private things about your body? (Answer choices: Yes or No.)

Q29. Has someone online on the Internet ever told or shown you private things about their body? (Answer choices: Yes or No.)

Given this context and from data analyzed for older age/grade level cohorts (see below), it appears likely that many Monroe County school district students are being exposed to Internet communications of a sexual nature by the 2nd grade if not earlier in life. Most students in the 2-3rd grade who reported having experienced Internet content that made them feel uncomfortable (70%, n=3,646) also indicated they reported the incident to a grownup. However, about three in ten children do not for reasons that are unclear.

Charts and tables of 2-3rd grade data are provided in Appendix K.

4th–6th Grade

Students within this grade cohort also began using computers and the Internet at an early age, and data analyzed across the grade cohorts (and from other

studies) indicate that every year larger proportions of students are introduced to computers and the Internet at younger ages. Indeed, 4th-6th graders who participated in this survey reported that they started using computers at an average age of five, with 30% (n=8,736) indicating their computer use began at age four or even earlier. Most students reported they learned to use computers from parents (44%, n=9,351) or were self-taught (16%, n=9,351), although 16% indicated they were taught by teachers (n=9,351). Lesser proportions of students surveyed reported learning how to use computers from friends, siblings or other people.

Students at this age/grade level also use various devices to access the Internet and thereby reveal a range of technical computing abilities. On average, 4th-6th graders use more than two different types of devices to access the Internet. Desktop (91%, n=8861) and laptop (49%, n=8,244) computers are the devices most commonly used. However, two in five students (n=8,056) use video game consoles for Internet access, and 12%, n=7,905) use cell phones to access the Internet.

Kids' websites, music, videos and games remain the biggest attractions for students at this age/grade level. About 92% (n=8,744) of 4-6th graders reported that they engage in some form of online gaming, while 87% (n=8,643) are visiting kids' websites. Approximately 38% of 4th-6th graders instant message (n=8,417) and 54% e-mail (n=8,463) other people. 26% of students use chat rooms (n=8,330) and 24% text message (n=8,293).

As these students venture online to communicate with peers, family and either intentionally or unintentionally with strangers, parental supervision is critical. The majority of 4th-6th grade respondents indicated that their parents do supervise them to some extent, with 27% (n=8,972) having reported that they are completely unsupervised online. 31% (n=8,972) reported they are watched by their parents "a little" or "sometimes."

Slightly less than half of 4th-6th grade students (n=8,905) report they are limited by their parents in the amount of time they spend online; Internet access appears to occur more frequently from public locations within residences that are more easily supervised such as a kitchen or living room rather than a bedroom. Nonetheless, 4th-6th graders believe they are not closely supervised online, and may not be with respect to actual monitoring by parents of online activities, time spent online and/or location from which the Internet is accessed. Conversely, many opportunities for supervised Internet access exist but appear to be underutilized by many parents. At an age when students are just beginning to solidify offline and online social networks and form concepts of appropriate and inappropriate online behavior, this is a major concern because children alone cannot be relied on to achieve ethical underpinnings for civil behaviors deemed appropriate in society.

Participation in online risky behaviors, such as posting sensitive information online and arranging while online to meet people in-person is relatively low among 4th-6th grade students. Some forms of personal information are more likely to be posted including personal interests (16%, n=8,757), physical activities (15%, n=8,743) and real name (20%, n=8,742). Others forms of potentially exploitable information are also posted by students including information about their school (5%, n=8,724), real home address (6%, n=8,708), phone number (6%, n=8,696) and pictures of themselves (9%, n=8,707). Only a very small percentage of students report they have been asked by people online (not necessarily by strangers) to meet with them in-person (5%, n=8,676), or have asked people online to meet them in-person (4%, n=8,668). While participation in risky behavior online may be low, there are still a significant number of students who participate in each form of behavior measured, each of whom may face increased risk of victimization due to posting of personal information online.

The majority of students (84%, n=9,351) within this grade cohort have not experienced any form of online victimization measured by the survey within the past school year. However, 16% (n=8,743) indicated that they experienced one form of victimization, and 12% report they experienced two or more forms (see Appendix C, 4th-6th grade survey instrument, Question 14). Of the nine forms of victimization measured, the most prevalent were: “someone used their password without permission” (13%, n=8,811) and someone pretended to be them online (12%, n=8,772). Experiences with online embarrassment (10%, n=8,764) and online bullying/threats were experienced by 7% of students (n=8,744).

Online sex-related victimization experienced by 4th-6th grade students was also generally low: exposure to nude photos and being told private things about someone else’s body was reported by 2% of students (n=8,706), being asked sensitive questions about their own body was reported by 2% (n=8,697) of students. 1% (n=8,714) of student respondents were asked to send pictures of themselves without any clothes and 3% (n=8,710) were shown pictures of other people online without their clothes on.

Contrary to the commonsense notion that online strangers are responsible for initiating inappropriate or unwanted sexual communications, among other types of online abuse or crime, many students who were victimized reported they actually know the perpetrator(s) as a real person they interact with offline as well as online. For example, when asked to characterize the person responsible for the type of incident they experienced, students most commonly reported a “boy” (25%, n=3,400), “girl” (27%, n=3,356) or “friend [they] know in person” (36%, n=3,420). In contrast, comparatively few students responded that the person responsible was an adult “man” (8%, n=3,347) or “woman” (7%, n=3,272), and only 16% (n=3,138) did not know the person responsible.

It follows that if students within this grade cohort are victimized by friends their own age, the same students may also engage in abusive behaviors using computers, other types of electronic devices and the Internet. Survey data indicate that this is indeed the case with substantial numbers of 4th-6th grade students having reported that within the preceding year they engaged in each of the 14 forms of deceptive, abusive or criminal behavior asked about (see Appendix C, 4th-6th grade survey instrument, Question 17).

The most common form of deceptive behavior indicated is lying about age online (23%, n=8,665). Other forms of online deceit are less common, e.g.: pretending to be someone else online (7%, n=8,686); lying about gender or appearance (7%, n=8,622); and online plagiarism (4%, n=8,605). Additionally, survey data reveal that for many students music and movie piracy may begin at this age/grade level, with 8% (n=8,633) admitting to having downloaded music and 3% (n=8,632) having downloaded movies without paying for these. Very few students admitted having bullied or threatened someone online (2%, n=8,668) and reported engaging in sex-related behaviors online such as requesting nude pictures (0.6%, n=8,634) and asking private things about another person's body (0.6%, n=8,629).

Charts and tables of 4th-6th grade data are provided in Appendix L.

7th-9th Grade

Within this grade cohort survey data reinforce the reality that students are being consistently introduced to computers at younger ages. On average students remember beginning to use computers at seven years of age (n=10,050) with 35% (n=10,366) indicating that their parents taught them the most about computers. Clearly parents continue to have a vital opportunity and role to positively influence responsible use of computers, other electronic devices and the Internet by students as they prepare for and enter school systems.

As with younger grade cohorts, 7-9th grade students use different types of devices to access the Internet, including: desktop computers (93%, n=10,365), laptop computers (57%, n=10,366) and more expansive use of cell phones (26%, n=10,366). Slightly greater numbers of students at this age/grade level use gaming consoles (24%, n=10,366). Devices used by students are for various purposes, but interactive communication with other people is more prevalent than with younger aged students.

72% (n=10,366) of 7-9th graders report using the Internet to instant message and 73% (n=10,366) e-mail, and many are also text messaging (48%, n=10,366) and using social networking sites (45%, n=10,366). Retrieving online videos and music (85%, n=10,366), school research (76%, n=10,366) and web browsing (71%, n=10,366) were also reported to be common activities, although online

gaming lessens to about 71% (n=10,366). Of the types of online activities measured, 7th-9th grade students were least likely to participate in chat rooms (25%, n=10,366) or create websites (18%, n=10,366).

Continuing the trend of less supervision at higher grade levels, 34% of 7th-9th grade students surveyed (n=10,154) reported using the Internet with no parental supervision. Another 36% indicated that they receive only “a little” parental supervision. Parental supervision at this age level is complicated by increasing privacy expectations of students, parents having more confidence in and expectations of their children, and adolescents assuming more mobile and socially interactive lifestyles. 55% of 7th-9th graders surveyed (n=10,366) reported that they commonly access the Internet from a private place in their home, and 44% (n=10,366) indicate that they commonly access the Internet from a private place in a friend’s home. 30% (n=6,209) reported that their parents limit the amount of time they spend online.

Online risky behavior is also common with 42% of the students (n=9,631) within this grade cohort indicating that they have spoken with at least one online stranger within the past year. Probably due to the increased popularity of social networking sites, many students at this grade level are using the Internet to publicly post a variety of sensitive information including: photographs of themselves (39%, n=9,838); their real names (36%, n=9,809); schedules (14%, n=9,681); and personal contact information (14%, n=9,666) such as residential street address (7%, n=9,616). Additionally, 9% (n=9,486) of students surveyed reported they have accepted an invitation to meet someone online in-person and 10% (n=9,463) have asked someone online to meet in-person. (Note: question wording infers this to be a stranger, but this may not be strictly true for all survey responses. The large point is that many students are interacting online with people they know and likely do not know for any number of purposes.)

In contrast to the 4th-6th grade survey cohort, students at this level are nearly as likely to have experienced at least one form of computer abuse or crime asked about. Nearly 21% (n=9,899) have experienced one or more forms of deceit or abuse within the 2006-2007 school year. Cyber bullying was common within this grade cohort with 15% (n=9,998) reporting an embarrassing experience online and 13% (n=10,000) indicating that they had been bullied or threatened online.

Having another Internet user impersonate a student online was another common form of victimization (15%, n=10,009) along with unauthorized use of a password (15%, n=10,022). Sexual chat was reported to be much more common among 7th-9th grade students, with 14% (n=9,976) indicating that they had communicated with someone online about sexual things; 11% of students (n=9,989) reported that they had been asked to talk about sexual things online. Students within this grade cohort were also more likely to have been exposed to nude pictures of other Internet users (8%, n=9,987) and were also asked for nude pictures of themselves online (7%, n=9,989).

Students surveyed were asked to characterize the perpetrator of the forms of computer abuse they had experienced. As before, survey data reveal that students often know perpetrators beforehand. The most commonly chosen identifier was “a friend [they] know in person” (59%, n=5,023), and other identifiers that would indicate a prior relationship with a perpetrator such as “someone else [they] know” (36%, n=4,621) or a “classmate” (21%, n=4,640). Slightly fewer students indicated that online friends (19%, n=4,609) and online strangers (16%, n=4,576) were responsible for the incidents they experienced. Survey data also reveal that students are more likely to be victimized by other students rather than by adults, with selections of “girl” (46%, n=4,807) and “boy” (42%, n=4,812) perpetrators being more common than “woman” (12%, n=4,599) or “man” (11%, n=4,660).

It follows that students also indicated that they themselves are engaging in abusive behavior online. Indeed 53% of 7th-9th graders who participated in the survey (n=10,366) admitted they had engaged in at least one form of online deceit or abuse within the past school year. Lying about their age (24%, n=10,366) was the most common. Students at this age/grade level also commonly downloaded music they did not pay for (22%, n=10,366) and pretended to be someone else online (11%, n=10,366). Bullying and sexually related abuses were more common among students of this cohort, with 4% (n=10,366) admitting to embarrassing another person online, 4% (n=10,366) admitting to harassing or threatening another person online, 3% (n=10,366) admitting to asking for naked pictures from another Internet user and 3% (n=10,366) admitting to soliciting sexual chat online.

The 7th-9th grade cohort was also asked in the study if they circumvent existing security measures to access online content. 7% (n=10,366) of students reported they had done so within the school year. Academic dishonesty by using computers or electronic devices to cheat on assignments and tests was also somewhat common within this grade cohort, with 5% (n=10,366) admitting to online plagiarism, 5% (n=10,366) admitting to cheating on school work and 3% (n=10,366) admitting to cheating on tests.

Charts and tables of 7th-9th grade data are provided in Appendix M.

10th-12th Grade

Students at this grade level remembered beginning to use computers at eight years of age (n=7,133). On average, they report now using two separate devices to access the Internet with desktops (93%, n=7,334) and laptops (60%, n=7,334) being the most common. 28% (n=7,334) students indicated that they use a cell phone to access the Internet. Respondents most commonly indicated that they had learned the most about computers by being self-taught (36%, n=7,334), followed by being parent-taught (28%, n=7,334).

On average, students within this age/grade cohort level report that they spend a total of 21 hours per week engaged in various online activities (n=6,571). Approximately one in five students report that their parents limit the amount of time they spend on online in activities such as instant messaging (16% of respondents, n=7,122), text messaging (17%, n=7,081), social networking (14%, n=7,074) and web surfing (12%, n=7,054). Over a quarter of students surveyed (28%, n=5,645) indicated that family members or friends have suggested that they cut back on their Internet use.

Within the past year, many students in this grade cohort indicated that they have used the Internet to interact with strangers online in a variety of ways, including: chatting (48%, n=5,358); flirting (25%, n=5,304); providing personal information (22%, n=5,313); talking about private things (17%, n=5,321) and engaging in sexually oriented chat (15%, n=5,303). Survey data also reveal that students are using the Internet to meet online strangers in-person; 14% (n=5,312) have accepted an invitation to meet an online stranger in-person; 14% of students (n=5,302) have invited an online stranger to meet them in-person.

Within the past school year, 41% (n=7,030) students reported that they had experienced at least one form of computer-related abuse, and more than 26% (n=6,997) revealed they had experienced two or more forms of computer abuse. The most commonly reported forms of victimization were malware attacks (40%, n=7,030) and denial of service attacks (36%, n=6,993) that may be periodically experienced by all members of society who use the Internet. However, many students also report having experienced cyber bullying within the past school year (16%, n=6,967), having been embarrassed online (16%, n=6,974), harassed online (17%, n=6,963), and stalked online (15%, n=6,983). Approximately one in four students at this age/grade level reported they had been exposed to unwanted pornography online (23%, n=6,959) or asked about sexual things online (23%, n=6,950).

When asked to characterize the perpetrator(s) responsible students primarily indicated that the perpetrator was a “boy or man” (35%, n=3,768). Of those who could identify the perpetrator most indicated the person was a “friend” (34%, n=3,683) followed by “girl or woman” (30%, n=3,600) and “classmate” (23%, n=3,591). These data underscore the reality that a substantial amount of online victimization experienced by youth stem from the behaviors of their peers rather than adult strangers. Indeed, the majority of students (75%, n=4,455) within this grade cohort admit to having engaged in some form of abusive behavior online within the past year. Half of the students surveyed (51%, n=4,396) reported having committed three or more forms of deceitful, abusive, questionable and/or criminal behaviors asked about (see Appendix E, Questions 27-33).

The most commonly reported behavior was lying about one’s age online (30%, n=6,723). Cheating and plagiarism were also commonly reported. 21% of students (n=6,697) revealed they used a computer or electronic device to cheat

on a school assignment, 12% (n=6,690) committed plagiarism and 9% (n=6,684) reported having used a computer or electronic device to cheat on an exam.

Within the past year 65% (n=6,810 students) have illegally downloaded music, 34% (n=6,620) have illegally downloaded movies and 30% (n=6,573) have illegally downloaded software. Students are aware of and circumventing security systems designed to prevent them from accessing Internet content (12%, n=6,575). Fewer students within this grade cohort are engaged in cyber bullying activities with 9% (n=6,662) having admitted to harassing someone online and 8% (n=6,664) having admitted to threatening someone online within the school year.

Charts and tables of 10th-12th grade data are provided in Appendix N.

CONCLUSIONS AND RECOMMENDATIONS

The *RIT Survey of Internet and At-risk Behaviors* conducted in Monroe County school districts from spring 2007 through January 2008 involved 40,079 K-12th grade students along with hundreds of school staff members and parents. Survey results confirm that students begin using the Internet at very young ages. When they do many students of all grade levels use personal computers from home and other locations, and from relatively public or private places, to access various online content for different reasons. Older students also routinely use cell phones and other mobile devices to access Internet content in the course of playing games, interacting with friends and doing school work, among other activities. This is often accomplished without close supervision or positive role modeling by parents or other respected adults especially as children get older. Although students report learning about computers from their parents, many report being self-taught. Having not grown up using computers, many parents and teachers report believing that today's youth know more about using computer technology than they do.

Indeed, K-12th grade students are increasingly using computers, other electronic devices and the Internet at younger ages — this technology is now integral to their lives. On balance computing is probably good for students, families, communities and all of society. However, in the absence of needed supervision, role modeling and systematically delivered education in how to be safe, secure and ethical online, today's youth including Monroe County school district students are apt to experience inappropriate content and online victimization. It is also true that certain proportions of Monroe County school district students commit various forms of deceit, abuse and/or crime online including, but not limited to, academic dishonesty, cyber bullying and pirating of music, movies and software. Many adolescent students who are naturally exploring sexuality use the Internet to access and communicate sex-related content.

These and other behaviors, and issues pertaining to online technology and content, represent new educational challenges for school districts everywhere. Chief among policy questions that need to be addressed by school administrators, staff, parents and elected officials are:

1. What Internet safety, information security and/or cyber ethics instruction (if any) should the district provide to students?
2. What specific topics should be addressed, for grades K-12?
3. Into what courses or aspects of curricula could such instruction be logically incorporated; and how would this map to state and national education standards (e.g., for technology, health and safety, etc.)?
4. Through what pedagogical methods would cyber-related instruction be most effectively taught to promote student learning and knowledge retention and bring about positive behavioral changes?
5. What resources already exist that could be adopted in whole or in part to facilitate the District's educational offerings in this area?
6. What role can/should parents have in supporting implementation of cyberrelated instruction beyond what is currently being offered by the District, and how might this be accomplished?

By participating in the *RIT Survey of Internet and At-risk Behaviors* Monroe County school districts are already positioned to begin answering these questions. In August – October of 2007, Fairport Central School District pioneered a *Cyber Leadership Institute* to begin exploring these and related questions. The Institute consisted of five days of intensive workshops attended by key personnel. Results of that district's participation in this survey were used to inform staff discussions and preliminary recommendations for moving the FCSD forward toward implementing cyber safety, security and ethics education. Perhaps a similar staff/policy development effort could be undertaken in other Monroe County districts.

The Cyber Safety and Ethics Initiative, as it is now known (www.bcybersafe.org) is currently working to provide such opportunities for area school districts, including Monroe County school districts. This report underscores the need to do so sooner than later and in a fairly comprehensive and structured manner that takes into account staff development, technology procurement and policy, and the digital youth culture of modern society.