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An Exploration of Middle and High School Students' Perceptions of Deviant Behavior When Using Computers and the Internet.

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**AN EXPLORATION OF MIDDLE AND HIGH SCHOOL STUDENTS'
PERCEPTIONS OF DEVIANT BEHAVIOR WHEN USING COMPUTERS AND
THE INTERNET**

A Dissertation

**Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy**

in

The School of Human Resource Education and Workforce Development

by

Annie Jean Harris Daniel

B.S., Louisiana State University, 1994

M.S., Louisiana State University, 1997

May, 2001

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"All our dreams can come true, if we have the courage to pursue them."

-Walt Disney

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ABSTRACT

If the current trend continue, the use of computer technologies and the Internet will increase for teaching and education. It is urgent that researchers study computer and Internet deviance. The purpose of this study was to explore middle and high school students' perceptions of deviant behavior when using computers and the Internet.

The target population for this study was middle and high school students. The accessible population included all students who attended a middle or high school in the East Baton Rouge Parish School which has computers that are capable of accessing the Internet (1,150 students - 575 middle school students and 575 high school students).

The instrument used in this study was designed by Professor San-Yi Li of Taiwan. This instrument contained 66 questions and a scantron was used to record participants' responses. From the instrument, variables were selected from five sections - 1) students' demographic characteristics 2) computer-related activities 3) students' perceptions of deviant behavior when using computers and the Internet 4) students' perception of their peers' deviant behavior when using computers and the Internet 5) students' ability to use computers and the Internet.

Results showed that the majority of students' indicated they perceive their behavior as being not deviant when using computers and the Internet. Contrarily, the students indicated they perceive the behavior of their peers to more deviant when using computers and the Internet. When the means of the Students' Behavior Score and the Peers' Behavior Score were compared, there was a significant different between the two scores. The Peers' Behavior Score for deviance was much higher than the Students' Behavior Score.

CHAPTER 1

INTRODUCTION

"Any technology tends to create a new human environment."

-Marshall McLuhan

Deviant behavior on the computer and the Internet is rising as technology use increases (Hollinger, 1996b; Power, 2000; Vatis, 2000). Deviant behavior, when using computers and the Internet includes the same types of deviant activities performed before the popularity of computers or the inception of the Internet. These activities include: using the Internet for illegal activities that violate local, state, and/or federal laws, inappropriate use defined as a violation of the intended use of the Internet or computer, and/or purpose and goal, obscene activities defined as entering a pornography website or selling pornography goods on the Internet; using the Internet or computer to violate copyrights laws or other contracts such as institutional or third party copyright, license agreements and other contracts, intentionally disrupting the Internet traffic by spreading a computer virus, spreading rumors about another person on the Internet, intimidating and frightening another person on the Internet.

Deviant behaviors are a real concern since our society is rapidly moving from a typographic culture to a post-typographic culture (Provenzo, Brett & McCloskey, 1999). According to Provenzo, et al. "typographic culture is defined as a culture or society based around the technology of printing and post-typographic culture is defined as an electronic non-text-oriented culture." (p. i) With this movement, our culture and society is being transformed. People are communicating more by electronic mail and

computers then by text or letter writing. Culturally, we are becoming more dependent on computers and computer-based technologies (Provenzo, et al.).

Computer technologies can be found in many everyday classroom activities. Students may occupy their extra time by playing computer generated video games. For example, students are no longer learning to type with typewriters, but with a word processor. Those schools that are using typewriters are rapidly moving into the post-typographical era. Graphing calculators are being required in math courses. Digital cameras are being used in art courses. In addition, art teachers are integrating computers with art programs to teach computer drawing or graphics to students.

As a measure of school reform to improve the learning of all students, schools are moving rapidly to integrate computers and the Internet into their curriculum (Glennan & Melmed, 1996). Computers are looked upon as a tool for increasing efficiency and productivity in a curriculum (Hunter, 1984). Researchers have designated the Internet as an equalizer of knowledge, because it allows the same knowledge to be accessible to all (Kearsley, 2000; Kent & McNergney, 1999; Milken Family Foundation, 1997; Papert, 1993). The cost of purchasing a computer has drastically declined in recent years. This decline in costs is allowing the Internet and computers to be more accessible to all by being available in public libraries and schools. In addition, this decrease in the cost of computers allows more of the United States' population to be able to afford to purchase one.

The past five years have radically changed the way schools interact with the world. The information super highway has become a reality. Students can use the Internet from

home or school to travel vicariously all over the world, to gather information and new knowledge. As more travel on this electronic highway increases, maps to find information and rules to keep the journey safe are becoming vital to successfully completing the journey.

In Understanding Media, Marshall McLuhan (1964) stated the following:

Any technology tends to create a new human environment. Script and papyrus created the social environment we think of in connection with the empires of the ancient world. The stirrup and the wheel created unique environments of enormous scope. Technology environments are not merely passive containers of people but are active processes that reshape people and other technologies alike. In our time, the sudden shift from the mechanical technology to the electric circuitry represents one of the major shifts of historical time. (p. iv)

Marshall McLuhan predicted in 1962 a coming "Global Village." This global village is now reality, in the form of the Internet. His words are so prophetic.

"Technology environments are not merely passive containers of people but are active processes that reshape people and other technologies alike" (p. 2). Due to the evolution of the Internet and computers, this very quotation is now reality. Computers and the Internet have "reshaped people and other technologies alike" (p. 2).

As our society is being transformed, computers and the Internet are being incorporated into almost every activity including: education, communication, shopping, buying and selling goods, and business. In business, having a website and electronic address in order to show that your company is on the cutting edge of technology is important. Large corporations and small locally owned companies are on-line. Being on the Internet is a new way of attracting potential business. The education system has the

same views about technology, having technology in the schools shows a willingness for reform or improvement.

With change and improvement, usually there are advantages and disadvantages that should be considered. One major disadvantage is that computers and the Internet are vulnerable to attacks and sabotage.

Voss (2000) referred to the Internet as “cyberworld,” which is very much like our earthly world. It has highways (the World Wide Web), businesses (e-commerce), homes (homepages), schools, colleges and universities (distance learning) and it has people that travel in this world (by way of the Internet). Among these people, there are those that are deviant and commit deviant acts on the superhighway and in cyberworld, but there are no police, highway patrol officers, administrators of discipline or cybercops to stop these people from committing their deviant acts, although authorities are beginning to actively pursue such criminals (Power, 2000). This research will focus on what young people (middle and high school students) perceive to be a deviant act when using a computer or the Internet. After all, some of these students have been using computers since the age of two (National Public Radio, 2000).

The Internet is the electronic highway that provides a means of instantly accessing people, institutions, and a mind-boggling amount of information from around the world. Basically, the Internet is the world’s largest computer network linking millions of people in more than 50 countries, on every continent of the globe. Most of the services are provided free by organizations that support host computers on the network. These

typically include universities, corporations, governments, and small businesses which use mainframes and mini- computers to maintain and manipulate databases.

Due to the easy access of information on the Internet; the opportunity for misuse increases. Ethical behavior by students, teachers, employees, and employers have become a major topic of concern.

With the frequency of technology use, cyberattacks are also on the rise (Hollinger, 1996b; Power, 2000), as well as the question of ethical behavior by students and employees. A recent report on Cybercrime by Michael A. Vatis (2000) (Director, National Infrastructure Protection Center, Federal Bureau of Investigation) indicated that cybercrime is on the rise:

As Internet use continues to soar, cybercrime is also increasing exponentially. Our case load reflects this growth. In FY 1998, we opened 547 computer intrusion cases; in FY 1999, that number jumped to 1154. Similarly, the number of pending cases increased from 206 at the end of FY 1997, to 601 at the end of FY 1998, to 834 at the end of FY 99, and to over 900 currently. These statistics include only computer intrusion cases, and do not account for computer facilitated crimes such as Internet fraud, child pornography, or e-mail extortion efforts. In these cases, the NIPC and NIPCI squads often provide technical assistance to traditional investigative programs responsible for these categories of crime. (p. 12)

Secondary and college faculty has reported an increase in students cheating by computer (Benning, 1998). According to a George Mason University instructor, cheating is more easily done by using computers and the Internet. Anne Marchant (a college instructor) refers to these types of cheaters as “patchwork plagiarists”. She says, “the students who copy and paste together passages from various articles they have found on the Internet, then turn in the work as their own.” (p. 1). She teaches computer science and catches at least one such student every semester and this includes students

using plagiarism in her computer ethics course. Marchant says she has no problem identifying the cheater, because "It's usually deadly obvious. The introduction will be written in broken English; then it will have this flawlessly written, almost doctoral-quality body; then a conclusion that goes back to broken English." (p. 1) Students have access to dozens of web sites that aid them in cheating (on-line paper mills sell term papers) and students share tests and course materials via email or diskette (Benning, 1998).

In addition to using computers and the Internet to cheat, a few studies have been conducted to determine the types of on-line activities of colleges. Perry, Wilkinson, and Perry (1998) surveyed 509 college students to determine how many students engaged in seven on-line activities. There was only one question that addressed deviant behavior (Do you use the Internet to access adult material?). Fifty (23%) of the 218 responded "yes" to this question.

Statement of Problem

If the current trend continues, the use of computer technologies and the Internet will increase for teaching and education. It is urgent that researchers study computer and Internet deviance that may occur in the educational environment. Although a limited amount of research has been performed to determine the types of deviant behavior students use on the Internet and on computers, the opportunity to perform deviant acts increases with the integration of technology in education.

Purpose and Objectives of the Study

The purpose of this study will explore the middle and high school students' and perceptions about what they consider to be deviant behavior when using computers and

the Internet. The following objectives and hypotheses will be used to guide the researcher:

1. Describe the middle and high school students on the following selected demographic characteristics:
 - a. Gender
 - b. Age
 - c. Ethnicity
 - d. Grade in School
 - e. Type of School (middle or high school)
 - f. Academic Achievement as perceived by the students
 - g. Religious Affiliation
 - h. Students' interaction with teachers
 - i. Students' interaction with other students
2. Describe the middle and high school students' perception of the amount of time spent engaging in the following selected computer-related activities:
 - a. ability to use the computer and Internet;
 - b. computer and Internet accessibility;
 - c. time spent on the Internet;
 - d. time spent on the Internet to collect information;
 - e. time spent on "chatroom" websites;
 - f. time spent playing video game websites;
 - g. time spent surfing the Internet or killing time;

- 8

- c. Modifying another person's website without the permission of the webmaster of the site;
 - d. Selling pornography goods on the Internet;
 - e. Accessing another person's credit card number on the Internet and using that number to buy goods;
 - f. Telling a lie on another person's website and making a profit from it;
 - g. Intentionally spreading a computer virus on the Internet;
 - h. Spreading bad rumors about another person on the Internet;
 - i. Entering into a website using another person's name and intentionally getting that person into trouble;
 - j. Intimidating and frightening another person on the Internet.
5. Describe the middle and high school Students' Behavior Score.
 6. Describe the middle and high school Students' Peers' Behavior Score.
 7. Compare the Students' Behavior Score of middle and high school students on selected demographic characteristics and perceptions of computer-related activities.
 8. Compare the Students' Behavior Score and the Peers' Behavior Score.
 9. Determine if a relationship exists between the Students' Behavior Score and the Peers' Behavior Score on selected demographic characteristics and perceptions of computer-related activities.

Hypotheses

The researcher believes that the type of school (middle or high school) a student is attending will influence what a student perceives is deviant behavior. To detect a

difference between Students' and Peers' Behavior Scores by type of school (middle or high school), two research hypotheses are identified. These hypotheses were:

1. There will be a statistically significant difference in the Students' Behavior Score of Middle and High School students. High school students will have a higher deviance score than middle school students.
2. There will be a statistically significant difference in the Peers' Behavior Score of Middle and High School students. High school students will have a higher deviance score than middle school students.

Significance of the Study

This study has the potential to provide valuable information about what behaviors students perceive to be deviant when using the computer and the Internet. By studying how students perceive deviance; teachers, parents, businesses, and schools can develop strategies that will allow them to become more effective at discouraging this behavior in students. The findings should assist in the development of policies and procedures for computer use in schools, as well as supplying new information for curriculum and textbook revisions.

Limitation of the Study

At the time permission was given to collect data for this research project, the school district only had a limited number of middle and high schools with computers that had Internet access. Therefore, the researcher was limited by those schools and proceeded to collect data from the middle and high schools with computers and Internet access.

Definition of Terms

Automated e-mail bombs - to bombard email users with thousands of messages at once. distributed with the aid of automated tools. The effect can be to completely jam a recipient's incoming e-mail box, making it impossible for legitimate e-mail to get through. Thus, an e-mail bomb is also a form of virtual blockade. Although e-mail bombs are often used as a means of revenge or harassment, they have also been used to protest government policies.

Child pornography - According to the National Coalition for the Protection of Children and Families, child pornography consists of photographs, videotapes, magazines, books, and films that depict children in sex acts, all of which is illegal. These laws also include some child nudity, simulated sex involving children and material that are computer-doctored to look like child porn . . . The very existence of child porn is considered "contraband," or illegal because the very act of photographing a child in any sexual context is abusive.

Computer abuse - any incident associated with computer technology in which a victim suffered or could have suffered loss and a perpetrator by intention made or could have made gain.

Computer Crime - Crime in which the perpetrator uses special knowledge of a computer technology.

Cybercrime - Crime in which the perpetrator uses special knowledge of cyberspace; often applies to computer crime situations involving the Internet and the World Wide Web.

Cyberterrorism - In the 1980s, Barry Collin, a senior research fellow at the Institute for Security and Intelligence in California, coined the term "cyberterrorism" to refer to the convergence of cyberspace and terrorism. Mark Pollitt, special agent for the FBI, offers a working definition - Cyberterrorism is the premeditated, politically motivated attack against information, computer systems, computer programs, and data which result in violence against noncombatant targets by subnational groups or clandestine agents. Denning suggests that cyberterrorism is a politically motivated attack that causes serious harm, such as severe economic hardship or sustained loss of power or water, might also be characterized as cyberterrorism.

Deviant behaviors - For the purpose of this study, deviant behaviors, when using the Internet and computers is defined as the following:

- Entering a website using another person's name and intentionally getting that person into trouble.
- Using the Internet for illegal activities that will violate local, state, and/or federal laws, i.e., financial fraud, sabotage of data and/or networks, theft of proprietary information, system penetration from the outside, denial of service, and unauthorized access by insiders;
- Inappropriate use shall be defined as a violation of the intended use of the Internet or computer, and/or purpose and goal (i.e., entering or modifying another person's website without the permission of the webmaster of the site);

- Obscene activities shall be defined as entering a pornography website or selling pornography goods on the Internet;
- Using the Internet or computer to violate copyrights' laws or other contracts such as institutional or third party copyright, license agreements and other contracts;
- Intentionally disrupting the Internet traffic by spreading a computer virus;
- Spreading rumors about another person on the Internet;
- Intimidating and frightening another person on the Internet;
- Entering a website using another person's name and intentionally getting that person into trouble.

Fraud - deceit or trickery; an intentional deception; an imposter.

Hacker - A proficient computer enthusiast; a person who experiments with or explores the contents of computers using unorthodox methods.

Hactivism - the convergence of hacking with activism, where "hacking" is used here to refer to operations that exploit computers in ways that are unusual and often illegal, typically with the help of special software ("hacking tools"). Hactivism includes electronic civil disobedience, which brings methods of civil disobedience to cyberspace.

Malicious hacker - Person who engages in unauthorized hacking; a hacker who engages in distribution of viruses, software piracy, etc.

Online harassment - a situation in which the communications are often constant, filled with disturbing and inappropriate content, and do not cease even after having asked them not to make further contact.

Pornography - generally means material (as books or a photograph) that depicts erotic behavior and is intended to cause sexual excitement.

Sniffer - a generic term for computer programs which allow individuals to gather information regarding the status of components of a network system. The computer programs search individual packets of information as they pass through various packet switching networks such as school servers or the Internet.

Software piracy - Possessing or using software without the permission of the owner.

Spoofing - The act of disguising one computer to electronically "look" like another computer in order to gain access to a system that would normally be restricted.

Trojan Horse - Software in which unauthorized computer instructions have been secretly inserted.

Virtual sit-ins - A virtual sit-in or blockade is the cyberspace rendition of a physical sit-in or blockade. The goal in both cases is to call attention to the protestors and their cause by disrupting normal operations and blocking access to facilities.

Viruses and worms - Software which secretly accompanies or is embedded in another computer program. Once the program is executed, the virus replicates and insert copies of itself into other software.

Web hacks and computer break-ins - hackers gaining access to Web sites and replacing some of the content with their own.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This review of literature is intended to provide the foundation for exploring students' perceptions of deviant behavior when using the Internet and computer. The literature reviewed in this chapter is organized into four major sections beginning with an overview of the history of computer usage in education, the impact of computers on education, overview of deviant behaviors with computers and the Internet, and a review of related research on students' computer usage.

Overview of the History of Computer Usage in Education

In 1988, Stanton suggested the following:

Consider that ten years ago, microcomputers were virtually nonexistent. True, a handful of hackers had them at home. A few schools proudly exhibited one or two machines, probably in the math or science room. Practically speaking, though, personal computers served merely as interesting curiosities during the late 1970s. Since then, data released by the National Center for Education Statistics has documented an overwhelmingly rapid acceptance of computers in the nation's elementary and secondary schools (p. 22).

Computers began to be used in United States schools in the early sixties (Finkel, 1991). Finkel (1991) observed "good" (p. 1) schools in large metropolitan areas had a slight chance of having computers. "By the end of the sixties, if you looked hard, you could find computers (or computer terminals connected to larger computers) in some high school classrooms" (Finkel, 1991). In addition to some computers being used in schools, other technologies like movie projectors, record players, tape players and recorders, slide projectors, and the occasional overhead projector were being used.

Since its inception, technology has played a major role in education. The integration of technology exemplifies a progressive or futuristic move in education (Finkel, 1991). Educators want to be seen as being progressive, on the cutting edge of education by introducing new methods, theories and technology that may improve a student's ability to learn (Finkel, 1991; Fisher, Dwyer & Yocam, 1996).

It was not until the early seventies, as computers then called mini-computers began to get a smaller and less expensive that their use in education increased. As technology progressed in the seventies, minicomputers had shrunk in size to microcomputers. Known as the "teaching machine," computer instruction was most popular in elementary schools' language arts and mathematics.

Microcomputers emerged into the schools like a storm at the end of the seventies. The number of computers in schools increased as the price dropped. In addition, federal programs like Chapter One allocated funds to purchase computers, which made them more affordable for school districts. With the purchase of more computers, more students had an opportunity to spend time working on a computer. As computers became more and more popular, the eighties allowed more opportunities for computer use in education.

Finkel (1991) noted that,

The eighties will be known as the decade of educational computing, maybe even educational technology in general. In the last ten years we've gone from bust to boom. We've seen vast amounts of money spent on new hardware, software, and training. We've seen the way computers are used go through a triple change: First there were programming classes for a few of the better students, followed by computer literacy teaching to all students, followed by the integration of computers and technology into

the regular curriculum, so that all students could use the technology, and all this in the span of less than a decade (pp. 2-3).

In 1991, Finkel predicted that by the end of the nineties students would be “comfortable using computers and other computer-related technologies for their school activities by the time they leave elementary school” (p. 4). It is now the beginning of the twenty-first century and students are introduced to a computer at the age of two. (National Public Radio, 2000). By the end of the nineties students were comfortable using computers and computer-related technologies upon leaving elementary school, as Finkel predicted. The use of computers and technology in education has changed the very foundation of education. (Collis, 1996). Computer usage and technology in education have gone from a limited use “teaching machine” or “drill machine” to content-oriented computer-assisted instruction (such as tutorial, drills and practices) to an interactive multimedia center that integrates computer minds tools into the curriculum, which is being mandated by the President of the United States (Liu, Macmillian, & Timmons; 1998).

In his 1997 State of the Union address, former President Clinton presented a plan to improve education with technology. His main focus was on access to technology in schools:

We must bring the power of the Information Age into all our schools. Last year, I challenged America to connect every classroom and library to the Internet by the year 2000, so that, for the first time in history, a child in the most isolated rural town, the most comfortable suburb, the poorest inner city school, will have the same access to the same universe of knowledge.

As former President Clinton (1997), Kearsley (2000), and Kent and McNergney (1999) have suggested: the Internet is a great equalizer of knowledge. By having access to the Internet, all students no matter where they live or their economic status can access the same body of knowledge.

The Impact of Computers on Education

Computer use has dramatically improved classroom methods and instructional effectiveness, according to Roblyer (1989). Roblyer studied the effectiveness of computer use in the educational system on student achievement, attitudes, dropout rate and learning time. At the time of Roblyer's study, computers had been used in education for nearly 25 years and the impact of this technology on student achievement, attitudes, dropout and learning time was largely unknown.

Roblyer reported in 1989 that computer applications seemed to have slightly greater effects with mathematics than with reading and language skills, although this difference was not significant. The effect of computers used to teach cognitive skills (problem solving and critical thinking) was about equal to mathematics and reading/language. Using computers to teach science had the highest effect and tutorials used in reading also had a positive effect. As Roblyer concluded in 1989, insufficient data exist to indicate that computer-based instructions have any impact on dropout rates. (Roblyer, 1989)

Contrary to Roblyer's findings, Liu, Macmillian and Timmons (1998) "found that there was no significant effect of computer integration on achievement. Although positive attitudes toward computers were high both before and after the computer

integration.” (p. 189). Liu, et al. (1998) reported that “students perceived using computers as having a positive effect on their learning.” (p. 189) In the Liu, et al. study students perceived the impact of computers on achievement quite differently. One student claimed: “Yeah, I’d say that [made me a better biology student];” “Another student stated that teachers might have given better marks to his assignments because they were typed with a word processor” (p. 197) and a student with dyslexia who had trouble reading and writing, found that typing projects on the computer and using the spell check helped to improve grades.

However, Liu, et al (1998) reported other students were not quite so sure computer integration aided in improving their grades. “One student, when asked if computers had increased his grades, said, ‘I don’t know. I’ve always used . . . Like, I’ve always been a computer person, so . . . ’ It appears that not all students felt that computers helped improve their grades. Most . . . agreed that computers had a great potential to help them in their subjects.” (p. 198).

Liu, et al (1998), National School Boards Foundation (2001) and Roblyer (1989) discovered that students’ attitudes was the most significant variable studied. Attitudes toward school, subject matter, self-image and self-esteem were improved.

Not only is the Internet influencing how students are learning, it also is influencing attitudes about learning—in a positive way. Forty-three percent of nine- to 17-year-olds with access to the Internet in their schools say the Internet has improved their attitudes toward school, including 17 percent who say it has improved their attitudes a lot. Almost all of the other 57 percent say the Internet hasn’t changed their attitudes about school at all. The Internet has had a strong positive effect on school attitudes among a broad range of children, including low-income 9- to 17-year-olds (59 percent of school Internet users in this group cite a positive effect);

children in large families (63 percent cite a positive effect); children in single-parent households (54 percent cite a positive effect); and African-American children (35 percent say the Internet has had a very positive effect). (National School Boards Foundation, 2000 p. 2)

Advantages of Computer Usage in Education

Computers have become a necessary part of our society. Almost every business or company depends on computers to help them function efficiently. It is important that students are exposed to computers at an early age. Early exposure can help students gain the computer literacy that will be critical for future success in the workplace. “Access to computers allows students to retrieve information, manipulate data, and produce results efficiently and in innovative ways. Examining the extent to which students have access to computers at home and at school may be an indicator of how well prepared students will be to enter an increasingly technological workplace.” (National Center for Educational Statistics, 1999, p. 1).

The United States Department of Education (2000) conducted a study on “the use of technology as a catalyst for change in ways that better support the acquisition of higher-order skills by all students (United States Department of Education, 2000 p. 4)” This research project revealed that:

Technology can have a particularly significant impact on the schooling of economically disadvantaged students, whose educational experiences frequently have stressed repetitious rote drill on lower-order skills, with relatively little attention to the areas of comprehension, problem solving, composition, and mathematical reasoning that will support both higher education and effective functioning in the real world. (p. 4)

According to researchers of a 1999 research project conducted by the United States Department of Education, technology has impacted the educational process in

seven different areas (United States Department of Education., 2000). These areas are change in student and teacher roles, increased motivation and self-esteem, accomplishment of more complex tasks, more collaboration with peers, increased use of outside resources, improved design skills, and attention to audience.

Change in Student and Teacher Roles

With the integration of computers and other technologies into the classroom, the roles of teachers and students changed. Students are allowed to be active participants in their educational process.

When students are using technology as a tool or a support for communicating with others, they are in an active role rather than the passive role of recipient of information transmitted by a teacher, textbook, or broadcast. The student is actively making choices about how to generate, obtain, manipulate, or display information. Technology use allows many more students to be actively thinking about information, making choices, and executing skills than is typical in teacher-led lessons (United States Department of Education, 2000, p. 4).

The traditional role of the teacher changes when computers are introduced to the educational process. With the integration of the computer, researchers have described the new role of teachers as more andragogical rather than pedagogical. When teachers use the pedagogical method of instruction, the teacher is in total control of the learning and teaching process (teacher-centered approach). However, the andragogical method gives the students more independence (student-centered approach). Teaching moves from student dependency to self-direction, and students engage more in problem solving. The teacher becomes more of a facilitator of learning (Fisher, Dwyer & Yocam, 1996).

The teacher's role changes as well. The teacher is no longer the center of attention as the dispenser of information, but rather plays the role of facilitator, setting project goals and providing guidelines and resources, moving from student to student or group to group, providing suggestions and support for student activity. As students work on their technology-supported products, the teacher rotates through the room, looking over shoulders, asking about the reasons for various design choices, and suggesting resources that might be used. (United States Department of Education, 2000, p. 4)

Increased Motivation and Self Esteem

Several researchers have reported that evidence of meaningful computer exposure leads to a positive increase of students' motivation and self esteem (Collis, Knezek, Kwok-Wing, Miyashita, Plegrum, Plomp, & Sakamoto, 1996; Kent & McNergney, 1999; Liu, et al., 1998; NCES, 1999; Roblyer, 1989; United States Department of Education, 2000).

The most common--and in fact, nearly universal--teacher-reported effect on students was an increase in motivation. Teachers talked about motivation from a number of different perspectives. Some mentioned motivation with respect to working in a specific subject area, for example, a greater willingness to write or to work on computational skills. Others spoke in terms of more general motivational effects--student satisfaction with the immediate feedback provided by the computer and the sense of accomplishment and power gained in working with technology.

A related technology effect stressed by many teachers was enhancement of student self esteem. Both the increased competence they feel after mastering technology-based tasks and their awareness of the value placed upon technology within our culture, led to increases in students' (and often teachers') sense of self worth (United States Department of Education, 2000, p. 3).

Technical Skills

Ellis (1974) recalls as early as 1965 the Computer Dictionary and Handbook listed 45 new jobs ranging from work processing to data converting operators. Today, students are faced with a much larger range of jobs available in the area of computers.

Technology has advanced far beyond the “drill and practice” of the sixties and seventies. Students now need to have a broad range of skills when using the computer.

Students, even at the elementary school level, are able to acquire an impressive level of skill with a broad range of computer software. For example, students use HyperStudio to create multimedia reports that include not only text but also digitized photographs and sounds as well as artwork, students create documents for their Gopher server and World Wide Web home page, industrial arts students use tools such as drafting programs, spreadsheets, and word processors in designing, financing, and selling products such as wine racks and kitchen cabinets.

Although the specific software tools in use will likely change before these students enter the world of work, the students acquire a basic understanding of how various classes of computer tools behave and a confidence about being able to learn to use new tools that will support their learning of new software applications.

Accomplishment of More Complex Tasks

Computer integration in education has allowed students to develop higher-order thinking skills. Students problem-solve by generating solutions to novel problems. Solving a problem requires the students to think and apply previously learned rules. (Merrill, P., Tolman, M., Christensen, L., Hammons, K., Vincent, B. & Reynolds, P., 1992)

Teachers for the observed classes and activities at the case study sites were nearly unanimous in reporting that students were able to handle more complex

assignments and do more with higher-order skills because of the supports and capabilities provided by technology.

More Collaboration with Peers

Another effect of technology on education cited by the United States Department of Education (2000) is an increased inclination on the part of students to work cooperatively and to provide peer tutoring. This activity occurred when students worked independently or in small groups.

While many of the classrooms we observed had assigned technology-based projects to small groups of students,...there was also considerable tutoring going on around the use of technology itself. Collaboration is fostered for obvious reasons when students are assigned to work in pairs or small groups for work at a limited number of computers. But even when each student has a computer, teachers note an increased frequency of students helping each other. (United States Department of Education, 2000, p. 4)

Increased Use of Outside Resources

The integration of technology into the curriculum constitutes a major change in the classroom learning environment, teachers are expanding student activities to incorporate technology (Fisher, Dwyer & Yocam, 1996).

Teachers from 10 out of 17 classrooms observed at length cited increased use of outside resources as a benefit of using technology. This effect was most obvious in classrooms that had incorporated telecommunications activities, but other classes used technologies such as satellite broadcasts, telefacsimiles, and the telephone to help bring in outside resources (United States Department of Education, 2000, p. 4).

Improved Design Skills and Attention to Audience

Experiences in developing the kinds of rich, multimedia products that can be produced with technology, particularly when the design is done collaboratively so that

students experience their peers' reactions to their presentations. appear to support a greater awareness of audience needs and perspectives.

Disadvantages of Computer Use in Education

Reinforces Guessing

Computer-aided instruction (CAI) (also known as “drill and practice”) is a program with a series of questions that is related to a lesson taught by the teacher. (Woodhouse & McDougall, 1986) This program is used to give a student more practice and drill. “The computer leads the user through the activities to be carried out.” (Woodhouse & McDougall, 1986, p. 45)

When using CAI, those students that do not know the answers to questions usually guess the right answer. The CAI then reinforces this habit by giving the right answer when the student guesses. Therefore, students think it is okay to guess. (P. Wall, personal communication, February 20, 2001)

Sequential Learning

Items presented in CAI are usually in a sequence. “This sets up a serial learning effect which allows the learner to use the item sequence as a cue for responding to an item.” (Merrill, P, Tolman, M, Christensen, L, Hammons, K, Vincent, B & Reynolds, P., 1986, p. 19) When the item is altered from the sequence, students may not be able to respond correctly. (Merrill, et al., 1986)

Computers as Teachers

Computers are tools of education and should not be the total focus of learning activities . (Finkel, 1991) In the educational setting, computers should be used to

reinforce what the teacher has taught, not the teacher. (Woodhouse & McDougall, 1986)

“Tutorial computer applications seek to place the computer in the role of a tutor, one that carries the full instructional burden of guiding a student to the achievement of a specified set of objectives.” (Merrill, et al., 1986, p. 33) Only a small portion of the instruction burden should be borne by computers and the larger portion by a human teacher. (Merrill, et al., 1986)

Overview of Deviant Behaviors Associated With Computers and the Internet

Denning (2000), Grabosky and Smith (1998) and Powers (2000) identified thirteen varieties of computer-related crime. Although the crimes discussed are extensive, they are not exhaustive. Crime committed in the information systems is diverse. According to Grabosky (2000), “Some of these are not really new in substance; only the medium is new.” Bologna (1981) described the computer deviant as follows:

- Male; white; young, 19-30, with no previous criminal record;
- Identifies with own technology far more than with his employer’s business;
- Is bright, creative, and energetic; outwardly self-confident; willing to accept challenge; adventurous, and highly motivated;
- Feels desperate because of economic problems resulting from high living, expensive tastes, family sickness, gambling, mistresses, substance abuse, etc.;
- Does not intend to hurt people; just the cold, indifferent, impersonal and exploitive employer;
- Sees self as a “borrower,” not a thief. (p. 27)

Bologna (1981) expounded on the concept that most computer deviants find it challenging to beat the system, establishment or institution. The motive is not always financial gain. He has indicated that this seems to be one of the leading reasons younger abusers commit crimes.

In the area of white collar crime, the general profile above usually matches the computer abuser (Bologna, 1981). White collar crime is more costly to industry and more difficult to detect and eliminate. Bloombecker (1990) cites the case of Donald Burleson who was angry with his employer, an insurance company, for withholding taxes from his pay. The day before he was fired Burleson planted a worm in the company's computer system. This worm moved thorough the system erasing 168,000 records of employee commissions. This was a tragic case that was caused by one angry employee, his act went undetected until it was too late to reverse. This could just as easily be performed by an angry student within a school district, thousands of valuable records could lost. In order to replace these school records, it will take hours of time that could be used in teaching, planning or organizing lessons. Fagin (1991) reported another case of a worm planted by Robert T. Morris, 24. Morris was the first person to be convicted of the crime in the United States courts. The damage caused by the worm program he planted was estimated at nearly \$100 million dollars.

On a global scale, the Federal Bureau of Investigation's (FBI) National Infrastructure Protection Center estimates that computer viruses and hacking take a toll of \$1.6 trillion dollars on the global economy (Vatis, 2000). The FBI is now working with

foreign governments to ensure that the Internet is a safe place for electronic commerce and communication.

The business industry is more susceptible and vulnerable to attacks (Power, 2000). Harrison (1999) reported that for the last three years, the Computer Security Institute statistics on cyberattacks showed a financial loss of more than \$100 million a year. In Harrison's report, 521 security managers in the study reported breaches by outside crackers or hackers, and 30% of the respondents reported intrusions; which was up from 24% from the previous year. The Internet connection had the highest point of attack, 57% of the respondents. While 20% of the respondents had detected unauthorized access or misuse of their websites in the past year from outsiders, 55% of the respondents reported attacks from the inside had increased by 10% from the previous year (Harrison, 1999).

For the past five years, the FBI and the Computer Security Institute have conducted a study of computer crime by administering the "Computer Crime and Security Survey" to information security professionals at corporations, financial institutions, government agencies, and universities across the United States. Figure 1 shows the types of businesses surveyed.

Table 1 shows the types of computer crime and amount of financial loss incurred over the past five years by the companies in Figure 1. For several of the crimes, the financial loss have increased over the years of the study. The highest loss occurred in the 2000 survey (Table 1) by theft of proprietary information (\$66,708,000) and the lowest was telecom eavesdropping (\$991,200).

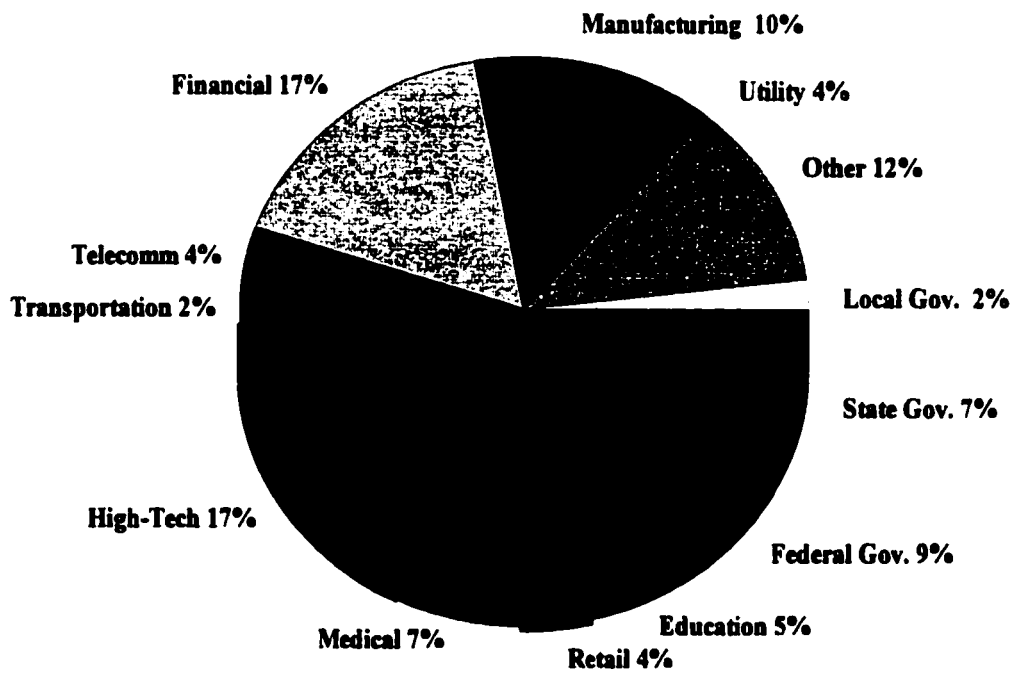


Figure 1 Respondents by industry sector

Source: Computer Security Institute - 2000; 643 Respondents/100%

Table 1**Total Annual Losses from Computer Crime**

Types of Computer Crime	1997	1998	1999	2000
Theft of proprietary information	\$20,048,000	\$33,545,000	\$42,496,000	\$66,708,000
Financial fraud	\$24,892,000	\$11,239,000	\$39,706,000	\$55,996,000
Virus	\$12,498,150	\$7,874,000	\$5,274,000	\$29,171,700
Insider abuse of Net access	\$1,006,750	\$3,720,000	\$7,576,000	\$27,984,740
Sabotage of data or networks	\$4,285,850	\$2,142,000	\$4,421,000	\$27,148,000
Unauthorized insider access	\$3,991,605	\$50,565,000	\$3,567,000	\$22,554,500
Laptop theft	\$6,132,200	\$5,250,000	\$13,038,000	\$10,404,300
Denial of service	N/A	\$2,787,000	\$3,255,000	\$8,247,500
System penetration by outsider	\$2,911,700	\$1,637,000	\$2,885,000	\$7,104,000
Active wiretapping	N/A	\$245,000	\$20,000	\$5,000,000
Telecom fraud	\$22,660,300	\$17,256,000	\$773,000	\$4,028,000
Telecom eavesdropping	\$1,181,000	\$562,000	\$765,000	\$991,200
Spoofing	\$512,000	N/A	N/A	N/A
Total Annual Losses:	\$100,119,555	\$136,822,000	\$123,779,000	\$265,586,240

Grand Total of Losses Reported (1997-2000): \$626,306,795

Source: Computer Security Institute - 2000; 643 Respondents for 2000/100%

Theft of Proprietary Information and Financial Fraud

Theft of proprietary information and financial fraud incurred the most serious financial loss, with \$66,708,000 being reported by the organizations surveyed for theft of proprietary information, and \$55,996,000 for financial fraud (see Table 1). In information technology, proprietary describes a technology or product that is owned exclusively by a single company that carefully guards knowledge about the technology or the product's inner workings. Some proprietary products can only function properly, if

at all, when used with other products owned by the same company. An example of a proprietary product is Adobe Acrobat, whose Portable Document Format (Portable Document Format) files can only be read with the Acrobat Reader. Microsoft is often held up as the best example of a company that takes the proprietary approach. It should be observed that the proprietary approach is a traditional approach. Throughout history, the knowledge of how an enterprise makes its products has usually been guarded as a valuable secret and such legal devices as the patent, trademark, and copyright were invented to protect a company's intellectual property.

Financial fraud usually happens when an employee or outsider accesses a computer to defraud the company. A 26-year-old employee of Solomon Brothers Investor Fund accessed a computer to defraud the company of \$586,325 in shareholder funds. China's first cyber bank robbery occurred when twin brothers hacked into a bank's computer system. They were put to death for stealing 720,000 yuan (\$86,700 in US).

Electronic funds transfer systems have begun to proliferate, and so has the risk that such transactions may be intercepted and diverted. Valid credit card numbers can be intercepted electronically, as well as physically; the digital information stored on a card can be counterfeited.

In 1994, a Russian hacker Vladimir Levin, operating from St. Petersburg, accessed the computers of Citibank's central wire transfer department and transferred funds from large corporate accounts to other accounts which had been opened by his accomplices in The United States, the Netherlands, Finland, Germany, and Israel.

Officials from Argentina, which represented one of the corporate victims in San Francisco, notified the bank to freeze the suspect accounts. The accomplice was arrested. Another accomplice was caught attempting to withdraw funds from an account in Rotterdam. Although Russian law precluded Levin's extradition, he was arrested during a visit to the United States and subsequently imprisoned. (Denning. 1999).

Sabotage of Data or Networks

Sabotage of data or networks totaled \$27,148,000 of the annual total for the year 2000 (Table 1), more than tripling over the a three-year period. Sabotage occurs in several different forms. For example, software programs can be written that will instruct a computer to do almost anything. Mail bombings causes terrorism on the Internet, by instructing a computer to repeatedly send electronic mail (email) to a specified person's email address; the cybercriminal can overwhelm the recipient's personal account and potentially shut down entire systems. This may or may not be illegal, but it is certainly disruptive. Well-known journalists Joshua Quittner and Michelle Slatalla learned the hard way what it feels like to be targeted by mail bombs when their home computer was flooded with gibberish and their phone lines were rerouted for a weekend (Quittner, 1995).

Telecom Eavesdropping

Telecom eavesdropping cost \$991,200 in the year 2000. Developments in telecommunications provide new opportunities for electronic eavesdropping. Eavesdropping occurred when "Phonemasters" illegally accessed the telephone networks of a large telecommunications corporation like AT&T, GTE, MCI and Sprint. The same

group accessed the credit-reporting databases of Equifax and TRW. Information gained from these corporations was used to generate and sell lists of personal information on customers. Even records from the FBI's Crime Information Center have been accessed (Power, 2000).

Littman (1997) reported that the notorious American hacker Kevin Poulsen was able to gain access to law enforcement and national security wiretap data prior to his arrest in 1991. In 1995, hackers employed by a criminal organization attacked the communications system of the Amsterdam Police. The hackers succeeded in gaining police operational intelligence, and in disrupting police communications (Rathmell, 1997).

From activities as time-honored as surveillance of an unfaithful spouse, to the newest forms of political and industrial espionage, telecommunications interception has increasing applications. Here again, technological developments create new vulnerabilities. The electromagnetic signals emitted by a computer may themselves be intercepted. Cables may act as broadcast antennas. Existing law does not prevent the remote monitoring of computer radiation.

System Penetration by Outsiders

System penetration by outsiders known as hacking cost respondents of the Computer Security Institute study a total of \$7,104,000 for 2000 (see Table 1). However, insider abuse of Internet (Net) access was \$27,984,740. According to Computer Security Institute's 2000 report, employees have been arrested for hacking

into their employers files. The employees would then sell the information to rival companies or just enter the files and cause damage to them.

Telecommunications Fraud

The "phone phreakers" of three decades ago set a precedent for what has become a major criminal industry. By gaining access to a large organization's private branch-exchange (PBX or telephone switchboard), "phreaks ... enter its internal phone system, hack it, then use the company's own PBX system to dial back out over the public network, causing the company to be stuck with the resulting long-distance bill" (Sterling, 1992 p. 49). Some individuals or criminal organizations can obtain access to dial-in/dial-out circuits and then sell call time to third parties (Gold, 1999). Offenders may gain access to the switchboard by impersonating a technician, by fraudulently obtaining an employee's access code, or by using software available on the internet. Some sophisticated offenders loop between PBX systems to evade detection. Additional forms of service theft include capturing "calling card" details and selling calls charged to the calling card account, and counterfeiting or illicit reprogramming of stored value telephone cards.

Sterling (1992) reported phreaks abusing the "voice-mail systems" by seizing their own sections of sophisticated electronic answering machines. Once a section was seized, it was used for trading codes or knowledge of illegal techniques. This act does not hurt the company directly, but may cause damage when the phreaks are discovered and the system is cleaned up. According to Sterling (1992), phreaks will retaliate by "erasing legitimate messages, or spying on private messages, or harass users with

recorded taunts and obscenities and they have seized control of voice-mail security and locked out legitimate users. or even shut down the system entirely” (p. 50).

Communications in Furtherance of Criminal Conspiracies

Just as legitimate organizations in the private and public sectors rely upon information systems for communications and record keeping, so too are the activities of criminal organizations enhanced by technology. For example, the use of a computer to launder drug money. Money is easily moved for account to account (Hollinger, 1996b).

There is evidence of telecommunications equipment being used to facilitate organized drug trafficking, gambling, prostitution, money laundering, child pornography and trade in weapons (in those jurisdictions where such activities are illegal). The use of encryption technology may place criminal communications beyond the reach of law enforcement.

The use of computer networks to produce and distribute child pornography has become the subject of increasing attention. Today, these materials can be imported across national borders at the speed of light (Grant, David & Grabosky 1997). The more overt manifestations of internet child pornography entail a modest degree of organization, as required by the infrastructure of IRC and WWW, but the activity appears largely confined to individuals.

Wiley (1997), chief of the FBI's Violent Crime and Major Offenders Section, reported to a judiciary committee on crime that “the Internet provides the opportunity for pedophiles and other sexual predators to meet and converse with children.” He revealed that pedophiles often utilize “chatrooms” to contact children.

These “chatrooms” offer users the advantage of instant communication throughout the United States and abroad, and they provide the pedophile an anonymous means of identifying and recruiting children into sexually illicit relationships. Through the use of “chatrooms”, children can “chat” for hours with unknown individuals, often without the knowledge or approval of their parents. A child does not know if he/she is “chatting” with a 14 year old or a 40 year old. The FBI has investigated more than 70 cases involving pedophiles traveling interstate to meet undercover agents or officers posing as juveniles for the purpose of engaging in an illicit sexual relationship. (Wiley, 1997 p. 1)

By contrast, some of the less publicly visible traffic in child pornography activity appears to entail a greater degree of organization. Although knowledge is confined to that conduct which has been the target of successful police investigation, there appear to have been a number of networks which extend cross-nationally, use sophisticated technologies of concealment, and entail a significant degree of coordination. Illustrative of such activity was the Wonderland Club, an international network with members in at least 14 nations ranging from Europe, to North America, to Australia. Access to the group was password protected, and content was encrypted. Police investigation of the activity, code named "Operation Cathedral" resulted in approximately 100 arrests around the world, and the seizure of over 100,000 images in September, 1998.

Telecommunications Piracy

Digital technology permits perfect reproduction and easy dissemination of print, graphics, sound, and multimedia combinations. The temptation to reproduce copyrighted material for personal use, for sale at a lower price, or indeed, for free distribution, has proven irresistible to many.

This has caused considerable concern to owners of copyrighted material. Each year, it has been estimated that losses of between \$15 and \$17 billion are sustained by industry by reason of copyright infringement (United States. Information Infrastructure Task Force, 1995).

The Software Publishers Association has estimated that \$7.4 billion worth of software was lost to piracy in 1993 with \$2 billion of that being stolen from the Internet (Meyer & Underwood 1994). Ryan (1998) puts the cost of foreign piracy to American industry at more than \$10 billion in 1996, including \$1.8 billion in the film industry, \$1.2 billion in music, \$3.8 billion in business application software, and \$690 million in book publishing.

Dissemination of Offensive Materials

Content considered by some to be objectionable exists in abundance in cyberspace. This includes, among others, sexually explicit materials, racist propaganda, and instructions for the fabrication of incendiary and explosive devices.

Telecommunications systems can also be used for harassing, threatening or intrusive communications, from the traditional obscene telephone call to its contemporary manifestation in "cyber-stalking", in which persistent messages are sent to an unwilling recipient.

Spice and Sink (1999) reports of one man who allegedly stole nude photographs of his former girlfriend and her new boyfriend and posted them on the Internet, along with her name, address and telephone number. The unfortunate couple, residents of Kenosha, Wisconsin, received phone calls and e-mails from strangers as far away as

Denmark who said they had seen the photos on the Internet. Investigations also revealed that the suspect was maintaining records about the woman's movements and compiling information about her family.

In another case a rejected suitor posted invitations on the Internet under the name of a 28-year-old woman, the would-be object of his affections, that said that she had fantasies of rape and gang rape. He then communicated, via email, with men who replied to the solicitations and gave out personal information about the woman, including her address, phone number, details of her physical appearance and how to bypass her home security system. Strange men turned up at her home on six different occasions and she received many obscene phone calls. While the woman was not physically assaulted, she would not answer the phone, was afraid to leave her home, and lost her job; because she was afraid of being assaulted (Miller. 1999; Miller & Maharaj. 1999).

One former university student in California used email to harass five female students in 1998. He bought information on the Internet about the women using a professor's credit card and then sent 100 messages including death threats, graphic sexual descriptions, and references to their daily activities. He apparently made the threats in response to perceived teasing about his appearance (Associated Press, 1999).

Electronic Vandalism, Terrorism and Extortion

As never before, western industrial society is dependent upon complex data processing and telecommunications systems. Damage to interference with any of these systems can lead to catastrophic consequences. Whether motivated by curiosity

or vindictiveness, electronic intruders cause inconvenience at the least and have the potential for inflicting massive harm (Hundley & Anderson 1995, Schwartau 1994).

While this potential has yet to be realized, a number of individuals and protest groups have hacked the official web pages of various governmental and commercial organizations (Rathmell 1997). This may also operate in reverse. Early in 1999 an organized hacking incident was apparently directed at a server which hosted the Internet domain for East Timor, which at the time was seeking its independence from Indonesia (Creed 1999).

The offenders obtained personal information and credit card details of 10,000 subscribers. Communicating via electronic mail through one of the compromised accounts, they demanded that \$30,000 be delivered to a mail drop in Germany. Cooperation between US and German authorities resulted in the arrest of the extortionists (Bauer, 1998). More recently, an extortionist in Eastern Europe obtained the credit card details of customers of a North American based on-line music retailer, and published some on the Internet when the retailer refused to comply with his demands (Markoff, 2000).

Computer networks may also be used in furtherance of extortion. The Sunday Times (London) reported in 1996 that over 40 financial institutions in Britain and the United States had been attacked electronically over the previous three years. In England, financial institutions were reported to have paid significant amounts to sophisticated computer criminals who threatened to wipe out computer systems. The article cited four incidents between 1993 and 1995 in which a total of 42.5 million Pounds Sterling were

paid by senior executives of the organizations concerned, who were convinced of the extortionists' capacity to crash their computer systems (Denning, 1999).

The above forms of computer-related crime are not necessarily mutually exclusive, and need not occur in isolation. Just as an armed robber might steal an automobile to facilitate a quick getaway, so too can one steal telecommunications services and use them for purposes of vandalism, fraud, or in furtherance of a criminal conspiracy. Computer-related crime may be compound in nature, combining two or more of the generic forms outlined above.

Kevin Mitnick, alternately described as anything from a genius to a menace, was arrested by the FBI in the Eastern District of North Carolina on February 15, 1995. There are different reasons cited for his consequent arrest. One report is that he allegedly break into the home computer of Tsutomu Shimomura, a well-respected member of the computer security world; the second, his girl friend turned him into the authorities and the third, his colleague and fellow rogue, Leonard DiCicco turned him into the authorities (Hollinger, 1996). Mitnick developed a reputation for having outstanding computer skills, known to hackers around the planet as "Condor," a name taken from the Robert Redford movie "Three Days of the Condor." Mitnick was suspected of spoofing his way through Shimomura's elaborate blockade and stealing computer security tools to distribute over the Internet. By July 1, Mitnick's lawyer and federal prosecutors had reached a plea bargain agreement whereby Mitnick would admit to "possessing unauthorized access devices" and the prosecutors would drop the other

22 charges brought against the renowned hacker. Mitnick's admission of guilt carried a maximum prison sentence of eight months.

The various activities of Kevin Mitnick, as described by Hafner and Markoff (1991) are illustrative of crimes defined by Denning (1999), Grabosky and Smith (1998) and Power (2000). In summary, the following is a list of problem areas that are costly to industry and individuals.

- Telecommunications
- Electronic vandalism, terrorism and extortion
- Stealing telecommunications services
- Telecommunications piracy
- Pornography and other offensive material
- Telemarketing fraud
- Electronic fund transfer crime
- Electronic money laundering

These are the major areas of computer crime or deviance that will be of major concern in the future (Hafner & Markoff, 1991; Hollinger, 1996a). As stated earlier in the profile of computer abusers, most start at age 19. However, recent reports of some abusers have been younger than profiled by Bologna (1981). Although teens are not the major abusers, they do commit computer crime and deviant acts. Wiley (1997) suggests that the “availability of computer telecommunications also demands that all of us, public officials, law enforcement, parents, educators, commerce and industry leaders, be more vigilant and responsible by teaching our children” (p. 1).

On March 9, 2001, two high school students were arrested for talking in a chatroom on the Internet about shooting people at their high school. This caused students at the school be searched and scanned with metal detectors. After interviewing the students and searching them and their homes, investigators determined that there was not reason for concern about safety at the school. The two juveniles were ages 15 and 16 and were charged with a felony count of terrorizing, which carries a fine up to \$15,000 and imprisonment of up to 15 years, or both (Anderson & Frink, 2001).

Recently, more of these types of deviance acts are emerging with teenagers. Students should be taught that this is not the type of conversation to engage in online. Parents and public places with Internet use, should have guidelines for students to follow when using the Internet. Students are introduced to computers at an earlier age and they are comfortable enough to work independently; oftentimes, computer and Internet use takes place without supervision. This allows students the freedom to enter into deviant acts that probably would not occur with supervision and an awareness of guidelines (Wiley, 1997). An important fact to keep in mind is that Kevin Mitnick never owned a computer. He was using a computer at the University of Southern California when he was apprehended (Hollinger, 1996). Therefore, students do not have use their own computers (at home) to engage in deviance. Mitnick's record of offenses started when he was a juvenile.

A Review of Related Research on Students' Computer Usage

This review of related research was compiled from research of students in the United States. Researchers in the studies are from public and private institutions.

Where Students Use the Internet

“By the time they are teenagers, nearly three out of four children are online” (National School Boards Foundation, 2000 p. 1). According to a survey by the National School Boards Foundation, “both school and home are important points of Internet access for children.” (p. 1)

Twenty-eight percent of the children surveyed by the National School Board Foundation (2001) reported that they access the Internet from home. However, when parents were surveyed 69 percent of the parents reported their children have access to computers at home and are able to log on to the Internet at home.

Overall, 23 percent of all children surveyed are accessing the Internet from school. Fifty-six percent of parents whose children have access to the Internet at home reported that their children also log on to the Internet at schools or preschools. (p. 1)

Reasons Students Use Computers and the Internet

Researchers at the National Center for Educational Statistics (2000) revealed that the main reason families buy computers and connect to the Internet is for educational purposes.

About two-thirds (64 percent) of family households surveyed have a home computer. The most common reasons parents cite for buying home computers is children's education (36 percent) and business use (27 percent). Likewise, the most common motivation parents cite for their child to use the Internet from home is their education (45 percent). Education is the single-most frequently cited motivation (39 percent) for parents who anticipate obtaining home Internet access as well, followed by e-mail (17 percent) (p. 1).

Additionally, student ages 13 to 17, in the National School Board Foundation (2001) study, cited education and schoolwork (32 percent) as the main reasons for

usage. This study also reports that students use the Internet at least once a week for schoolwork and general learning activities not connected to school .

Frequency of Computers and the Internet Use

The National Center for Education Statistics (1997) reported the frequency of computer and Internet use by students. This report disclosed information pertaining to students in the fourth, eighth and eleventh grades for five years (1984 to 1994). The categories for frequency of use was never, less than once a week, once a week, 2 or 3 times a week and every day.

Results of this study showed that in 1984 the majority of students in each grade level responded that they had never used a computer (4th grade-61.2%, 8th grade-66.7%, 11th grade-55.0%). However, by 1994, the majority of the students in all grades reported using a computer less than once a week, once a week, 2 or 3 times a week, or every day (4th grade-83.5%, 8th grade-72.4%, 11th grade-73.9%).

Computer use by students has increased over the years. Students are using computers at home and at school and using them for learning activities and pleasure (chatrooms, emails, playing games, listening to and recording music, etc.). (National Center for Education Statistics, 1997)

Computer Usage by Gender

In general, girls use computers and the Internet as much as boys, but in different ways (National School Boards Foundation, 2000). When it comes to competency, girls are as competent as boys. Girls are more likely to use the Internet to e-mail friends and family than boys. Girls are also more likely to use the Internet for

schoolwork and chatroom than boys. Boys reported using the Internet more for entertainment and games.

According to their parents, 48 percent of 9- to 12-year-old boys and girls are online, while 71 percent of 13- to 17-year-old boys and girls are online. Both younger and older girls seem just as likely to use the Internet as their male counterparts; 50 percent of 9-to 12-year-old girls use the Internet, compared to 46 percent of boys. In the 13- to a 17-year-old age bracket, 73 percent of girls use the Internet, compared to 70 percent of boys. (National School Boards Foundation, 2000 p. 6)

Computer and Internet Use by Race and Income

“Schools have the opportunity to help narrow the gap between the haves and have-nots with Internet access.” (National School Boards Foundation, 2000 p. 7) “Parents with an income of \$70,000 or more reported that one or more of their children use the Internet, compared to 35 percent of parents with incomes of less than \$40,000. Fifty-seven percent of white parents report that their children use the Internet, compared to 23 percent of African-American parents.” (National School Boards Foundation, 2000 p. 7)

Among students with parents who have an income of \$40,000 or less, 76 percent of 9-to 17-years-old use the Internet at school; while 68 percent of children of wealthy families and 54 percent of children in middle class families use the Internet at school. Schools are the main source of Internet use for children that are from low-income families (National Center for Education Statistics, 1999 & National Center for Education Statistics, 1998).

Eighty percent of African-American families with children age 9 to 17-years-old uses the Internet at school. This is compared to only 16 percent who reported they log on from home (National School Boards Foundation, 2000 & National Center for

Education Statistics, 1999). This report is consistent with finding from a study by the National Public Radio (2000). Results of this study revealed a “digital divide” between those with lower incomes and less education. “Americans with lower incomes are less than half as likely as those with higher incomes to have an Internet connection at home” (p. 1). Furthermore, “there is a gap of 11 percentage points between blacks and whites using computers at work (46% vs. 57%); but there is a larger, 22 point gap between blacks and whites who have a computer at home (51% vs. 73%). Similarly, a gap of 8 points exists between blacks and whites using the Internet at work (21% vs. 29%) compared with a larger 19 point gap in access to the Internet or e-mail at home (38% vs. 57%). There is a 17 percentage point gap in home-computer ownership between low-income blacks and low-income whites” (p. 5).

CHAPTER 3

METHODOLOGY

The main purpose of this chapter is to describe the procedures and methodology utilized in the study. These procedures were employed in order to achieve the primary purpose of the study, which is to explore what middle and high school students perceive as deviant behavior when using the computer and the Internet.

Population and Sample

The target population for this study was middle and high school students. The accessible population included all students who attended a middle or high school in the East Baton Rouge Parish School System (EBRPSS) which has computers that are capable of accessing the Internet. From these schools, a convenient sample of approximately 1,150 students were surveyed (575 middle and 575 high school students). Principals at these schools were notified of the study and asked to identify teachers with Internet access in their classrooms. The school principals decided which teachers would participate in the study, which determined the students to survey.

Instrumentation and Procedure for Data Collection

Instrumentation

The instrument was developed by a Professor San-Yi Li in Taiwan (who gave the researcher permission to use his instrument for this study) (see Appendix E) and revised by the researcher. A few key demographic questions were added to the survey, which are: "What is your race or ethnicity?," "Is there a working computer in the home where you live," "If there is a working computer in the home where you live, is it connected to the Internet?," and "What type school do you attend?" The original survey had 62

questions. After the revisions, the number of questions increased to 66 (see Appendix A). The questions selected were those that addressed the objectives of the study. The selected variables were systematically copied into a file. The primary variables studied were categorized as: 1) students' demographic characteristics 2) computer-related activities 3) students' perceptions of deviant behavior when using computers and the Internet 4) students' perception of their peers' deviant behavior when using computers and the Internet 5) students' ability to use computers and the Internet.

Procedure for Data Collection

Data were collected during the Spring semester of 2000. The procedure for collecting the data was as follows:

1. The EBRPSS Director of Academic Accountability was contacted to obtain approval to conduct a research survey in the middle and high schools in the system (see Appendix B and Appendix C).
2. The parish Director of Technology (he was contacted by telephone and visited in person by the researcher to obtain the list of schools) identified the seven middle and seven high schools with computers that had access to the Internet.
3. Principals of the schools identified were then contacted (by faxed letter and telephone) (see Appendix D) and a request was made to survey students with computer and Internet usage experience.
4. Teachers and students selected by the school principals were informed of the general objectives of the study by the school principals and the researcher. Students were asked to participate in the study voluntarily.

Once the subjects agreed to participate in the research, they were informed by their teachers that the project required them to complete a survey consisting of 66 questions (see Appendix A). Students were given a pencil, a scantron sheet to record responses and an additional response sheet with open-end questions. Students were allowed a maximum of 45 minutes to complete the survey, but if additional time was needed it was allowed. Five hundred seventy five middle students and 575 high school students responded to the survey.

Data Analysis

Data collected in this study were analyzed using the following procedures for each respective study objective.

Objectives One, Two, Three and Four

Objective one was to describe the middle and high school students on the following selected demographic characteristics: (a) Gender, (b) Age, (c) Ethnicity, (d) Grade in School, (d) Type of School (middle or high school), (e) Academic, (f) Achievement as perceived by the students, (g) Religious Affiliation, (h) Students' interaction with teachers, and (i) Students' interaction with other students.

Objective two was to describe the middle and high school students' perceptions of the amount of time spent engaging in the following selected computer-related activities: (a) ability to use the computer and Internet; (b) computer and Internet accessibility; (c) time spent on the Internet; (d) time spent on the Internet to collect information; (e) time spent on "chatroom" websites; (f) time spent playing video game websites; (g) time spent surfing the Internet or killing time; and (h) time spent sharing with others about the Internet.

Objective three was to describe the students' perceptions of their actions on the computer and the Internet based on the following variables: (a) Entering another person's program on the web without permission of the webmaster of the site; (b) Entering a pornography website; (c) Modifying another person's website without permission of the webmaster of the site; (d) Selling pornography goods on the Internet; (f) Accessing another person's credit card number on the Internet and using that number to buy goods; (g) Telling a lie on another person's website and making a profit from it; (h) Intentionally spreading a computer virus on the Internet; (i) Spreading bad rumors about another person on the Internet; (j) Entering into a website using another person's name and intentionally getting that person into trouble; and (k) Intimidating and frightening another person on the Internet.

Objective four was to describe the students' perceptions of their classmates' actions on the computer and the Internet based on the following variables: (a) Entering another person's program on the web without permission of the webmaster of the site; (b) Entering a pornography website; (c) Modifying another person's website without permission of the webmaster of the site; (d) Selling pornography goods on the Internet; (f) Accessing another person's credit card number on the Internet and using that number to buy goods; (g) Telling a lie on another person's website and making a profit from it; (h) Intentionally spreading a computer virus on the Internet; (i) Spreading bad rumors about another person on the Internet; (j) Entering into a website using another person's name and intentionally getting that person into trouble; and (k) Intimidating and frightening another person on the Internet.

These objectives were descriptive in nature and were analyzed using descriptive statistics. The variables that were measured on a categorical (nominal and ordinal) levels were summarized using frequencies and percentages in categories. Variables measured on an interval or higher scale of measurement were summarized using means and standard deviations.

Objectives Five and Six

Objective five was to describe the middle and high school students' Behavior Score. The Students' Behavior Score was calculated using 10 questions (Questions #51-#60, Appendix A). Objective six was to describe the middle and high school students' Peers' Behavior Score. The Peers' Behavior Score was calculated using 10 questions (Questions #1-#10, Appendix A). Students were asked to identify how often they participated in selected computer-related behaviors by selecting one of the following responses:

1 = none; 2 = some but not often; 3 = often; and 4 = very often. These responses were used to calculate the Students' Behavior Score. To calculate the Peers' Behavior Score, students were asked to identify how deviant they considered selected computer-related behaviors performed by their peers by selecting one of the following responses: 1 = it's not deviant; 2 = it's not seriously deviant; 3 = it's seriously deviant; 4 = it's very seriously deviant.

The responses will be calculated by adding together the students responses from questions 1-10 to get the Peers' Behavior Score and adding together the responses for questions #51-#60 to get the Students' Behavior Score. These responses totals were grouped as the following: Students' Behavior Scores were grouped according to the

following scale: None = 10-17; Some but not often = 18-25; Often = 26-33; and Very often = 34-40 and the Peers' Behavior Scores were grouped according to the following scale: No deviant behavior = 10-17; Some deviant behavior = 18-25; Deviant behavior often displayed = 26-33; and Deviant behavior very often displayed = 34-40.

Objective Seven

Objective seven was to compare the Behavior Score of middle and high school students on selected demographic and perceptual characteristics and computer-related activities. A chi-square test of independence was used to analyze data for this objective.

Objective Eight

Objective eight was to compare the means of the Students' Behavior Score and the Peers' Behavior Score. This was accomplished by using a paired-sample t-test.

Objective Nine

Objective nine was to determine if a relationship existed between the Students' Behavior Score and the Peers' Behavior Score on selected demographic and perceptual characteristics and computer-related activities. Multiple regression analyses were used to analyze this objective.

Hypotheses

The researcher believed that the type of school (middle or high school) a student was attending would influence how the student perceives deviant behavior is displayed. To detect a difference between Students' and Peers' Behavior Score by Type of School, two hypotheses were identified. The Chi-square procedure was used to analyze these hypotheses. These hypotheses were:

1. There will be a significant difference in the Students' Behavior Score of Middle and High School students. High school students will have a higher deviance score.
2. There will be a significant difference in the Peers' Behavior Score of Middle and High School students. High school students will have a higher deviance score.

Reliability of the Instrument

Reliability of the Peers' Behavior and Student Behavior scales were assessed from the data collected in the study using Cronbach's Alpha internal consistency coefficient. The alpha level used was set at .05 'a priori. The reliability coefficient of the Peers' Behavior Score (items 1 - 10 of the instrument) was .84, which contained questions related to students' perception of their classmates' behavior when using the Internet and computers. The reliability coefficient of the Student Behavior Score (items 51 - 60) was .91, which contained questions related to students' perceptions of their personal behavior when using the Internet and computers.

CHAPTER 4

FINDINGS

Students from fourteen schools participated in the study. There were 575 middle school students and 575 high school students. Table 2 indicates the distribution of students at the participating schools. The school codes were assigned to the schools by the researcher to identify the schools.

Table 2

Distribution of Students at Participating Schools

<u>School Code Numbers</u>	<u>n</u>	<u>%</u>
Middle Schools		
69	87	7.57
70	73	6.35
75	71	6.17
76	71	6.17
77	95	8.26
78	78	6.78
79	100	8.70
High Schools		
67	101	8.78
68	86	7.48
71	80	6.96
72	78	6.78
73	75	6.52
74	57	4.96
80	<u>98</u>	<u>8.52</u>
Total	1150	100.00

Objective One - Demographics

Objective one was to describe the middle and high school students on the following selected demographic characteristics: (a) Gender, (b) Age, (c) Ethnicity, (d) Grade in School, (e) Type of School (middle or high school), (f) Academic Achievement as perceived by the students, (g) Religious Affiliation, (h) Students' interaction with teachers, and (i) Students' interaction with other students.

Gender and Age

The majority ($n= 634$ or 57.1%) of the respondents were female while 477 or 42.9% were male. Thirty-nine students did not respond when asked to select their gender.

Students were asked to select their ages from the following choices: 13 and below, 14, 15, 16, and 17 and above. The majority of the responding students ($n=304$, 26.6%) indicated that they were in the 13 and below category as shown in Table 3.

Table 3

Age of Responding Students

Ages	<u>n</u>	<u>%</u>
13 and below	304	26.6
14	262	22.9
15	153	13.4
16	156	13.6
17 and above	<u>269</u>	<u>23.5</u>
Total	1144	100.0

Note: Six students did not respond when asked their age.

Race or Ethnicity

Students were asked to respond to the question, “What is your race or ethnicity?”

The majority of the responding ($\underline{n}=637$, 60.4%) students indicated that they were Black.

The next largest majority ($\underline{n}=257$, 24.3%) of the responding students indicated that they were White as shown in Table 4.

Table 4

Race or Ethnicity of Responding Students

Race	<u>n</u>	<u>%</u>
Black	637	60.4
White	257	24.3
Asian	63	6.0
Hispanic	61	5.8
Other	<u>37</u>	<u>3.5</u>
Total	1055	100.0

Note: 95 students did not respond when asked of their race.

Grade Levels

The majority ($\underline{n}=355$, 31.9%) of the responding students indicated that they were in the 11th or 12th grade. See the breakdown of each grade level in Table 5.

Type of School Attended and Academic Achievement

Students were asked to select the type of school they attended: middle or high school. The number of students from either school was almost equal with 502 (45.1%)

Table 5

Grade Levels of Responding Students

Grade Levels	<u>n</u>	<u>%</u>
7 th	200	18.0
8 th	302	27.1
9 th	153	13.7
10 th	104	9.3
11 th or 12 th	<u>355</u>	<u>31.9</u>
Total	1114	100.0

Note: 36 students did not respond when asked their grade levels.

from middle schools and 612 (54.9%) from high schools. Thirty-six students either did not respond or gave invalid responses to this question and an additional 37 gave an incorrect response at the middle and high school level, because the number of responses is larger than the number of participants at the high school level as shown in Table 6.

Students were asked to rate their academic achievement as poor, fair, good, or excellent. The majority, 546 (48.4%), of the responding students indicated that their academic achievement was “Good” as shown in Table 7.

Religious Affiliation

Students were asked to select their religious affiliation from the following choices: no religious affiliation, strong religious affiliation, or very strong religious affiliation. The majority, 633 (56.8%), of the responding students indicated that they had strong religious affiliations as seen in Table 8.

Table 6

Grade Level by School Type of Responding Students

Grade Levels	School Type				Total
	MS		HS		
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	
7 th	192	96.0	8	4.0	200
8 th	300	99.3	2	0.7	302
9 th	24	15.7	129	84.3	153
10 th	15	14.4	89	85.6	104
11 th or 12 th	<u>10</u>	2.8	<u>345</u>	97.2	<u>355</u>
Total	541		573		1114

Note: 36 students did not respond when asked their grade levels.

Table 7

Rating of Academic Achievement of Responding Students

Rating	<u>n</u>	<u>%</u>
Poor	45	4.0
Fair	235	20.8
Good	546	48.4
Excellent	<u>302</u>	<u>26.8</u>
Total	1128	100.0

Note: 22 students did not respond when asked to rate their academic achievement.

Table 8

Religious Affiliation of Responding Students

Religious Affiliation	<u>n</u>	<u>%</u>
None	214	19.2
Strong	633	56.8
Very strong	<u>267</u>	<u>24.0</u>
Total	1114	100.0

Note: 36 students did not respond when asked their religious affiliation.

Level of Interaction with Classmates and Teachers

Students were asked how often they interacted with their classmates. The majority, 476 (42%), of the responding students indicated they interacted with their classmates “very often” as shown in Table 9.

Students were asked how often they interacted with their teachers. “Some but not often” and “Often” were the two responses most frequently selected. Both responses were equal in student selections (n=366 or 32.1%) as shown in Table 10.

Table 9

Level of Interaction with Classmates of Responding Students

Level of Interaction	<u>n</u>	<u>%</u>
Little or none	95	8.4
Some but not often	188	16.6
Often	375	33.0
Very often	<u>476</u>	<u>42.0</u>
Total	1134	100.0

Note: 16 students did not respond when asked their level of interaction with their classmates.

Table 10

Level of Interaction with their Teachers of Responding Students

Level of Interaction	n	%
Little or none	227	19.8
Some but not often	366	32.1
Often	366	32.1
Very often	<u>182</u>	<u>16.0</u>
Total	1141	100.0

Note: 9 students did not respond when asked their level of interaction with their teachers.

**Objective Two - Students' Perceptions of Abilities or Time Spent in
Computer-Related Activities**

Objective two was to describe the middle and high school students' perceptions of their abilities or the amount of time spent in the following selected computer-related activities: (a) ability to use the computer and Internet; (b) computer and Internet accessibility; (c) time spent on the Internet; (d) time spent on the Internet to collect information; (e) time spent on "chatroom" websites; (f) time spent playing video game websites; (g) time spent surfing the Internet or killing time; and (h) time spent sharing with others about the Internet.

Students were asked to select how they rated their ability to use the computer's Internet: never used it, poor, good, or excellent. The majority, 572 (50.1%), of the responding students indicated that their ability to use the computer's Internet was "Good" as shown in Table 11.

Table 11

Students Perceptions of Their Ability to Use the Computer's Internet

Ratings	<u>n</u>	<u>%</u>
Never Used it	64	5.6
Poor	119	10.4
Good	572	50.1
Excellent	<u>387</u>	<u>33.9</u>
Total	1142	100.0

Note: 8 students did not respond when asked their ability to use the computer's Internet.

In responding to the question "How easy is it for you to find a computer to use the Internet?", the majority, 564 (49.4%) of the responding students indicated that it was "Very easy" to find a computer for their Internet use as shown in Table 12.

Table 12

Students Perceptions of Their Ability to Find a Computer to Use the Internet

Accessibility	<u>n</u>	<u>%</u>
Not very easy	70	6.1
Not easy	139	12.2
Easy	368	32.3
Very easy	<u>564</u>	<u>49.4</u>
Total	1141	100.0

Note: 9 students did not respond when asked their ability to find a computer to use the Internet.

In responding to the question “How much time do you spend online?” the majority, 447 (39.2%), of the responding students indicated they spent “Very little” time online as shown in Table 13.

Table 13

Time Spent on the Internet of Responding Students

Time Spent	<u>n</u>	<u>%</u>
None	154	13.5
Very little	447	39.2
Much	362	31.8
Very much	<u>177</u>	<u>15.5</u>
Total	1140	100.0

Note: 10 students did not respond when asked how much time they spent online.

In responding to the question “How many hours per day do you spend on the Internet?”, the majority, 455 (39.8%), of the responding students indicated they spent “5-6 hours” on the Internet as shown in Table 14.

Students were asked to select their levels of agreement concerning the following statement: “I spend most of my time on the Internet collecting information.” The majority 455 (39.9%), of the responding students “Agreed” that they spent most of their time on the Internet collecting information as shown in Table 15.

Students were asked to select their level of agreement concerning the following statement: “I spend most of my time on the Internet in Chat Rooms.” The majority, 755

Table 14

Hours Per Day Spent on the Internet of Responding Students

Hours Spent	<u>n</u>	<u>%</u>
2 hours or less	165	14.4
3-4 hours	335	29.3
5-6 hours	455	39.8
7-8 hours	184	16.1
9 hours or more	<u>5</u>	<u>0.4</u>
Total	1144	100.0

Note: 6 students did not respond when asked how many hours per day was spent on the Internet.

(66.3%), of the responding students either “Strongly disagreed” or “Disagreed” that they spent most of their time in “Chat Rooms” while on the Internet as shown in Table 16.

Table 15

Level of Agreement of Most Time Spent on the Internet Collecting Information of Responding Students

Level of Agreement	<u>n</u>	<u>%</u>
Strongly disagree	165	14.5
Disagree	335	29.4
Agree	455	39.9
Strongly agree	<u>184</u>	<u>16.2</u>
Total	1139	100.0

Note: 11 students did not respond when asked to select their level of agreement of most time spent collecting information.

Table 16

Level of Agreement of Most Time Spent on the Internet in Chat Rooms of Responding Students

Level of Agreement	<u>n</u>	<u>%</u>
Strongly disagree	377	33.1
Disagree	378	33.2
Agree	271	23.8
Strongly agree	<u>112</u>	<u>9.8</u>
Total	1138	100.0

Note: 12 students did not respond when asked to select their level of agreement of most time spent in chat rooms.

Students were asked to select their level of agreement concerning the following statement: "I spend most of my time on the Internet playing video games. The majority, 775 (67.8%), of the responding students either "Strongly disagreed" or "Disagreed" that they spent most of their time playing "Video Games" while on the Internet as shown in Table 17.

Students were asked to select their level of agreement concerning the following statement: "I spend most of my time on the Internet killing time. Although the majority, 703 (61.5%), of the responding students either "Strongly disagreed" or "Disagreed" that they spent most of their time killing time while on the Internet, 316 (27.7%), "Agreed" that they did use the Internet as a way to "Killing Time" as shown in Table 18.

When students were asked "How often do you share your Internet experience with others" the majority, 500 (44%), of the responding students said "Not often" as shown in Table 19.

Table 17

Levels of Agreement of Most Time Spent on the Internet Playing Video Games of Responding Students

Levels of Agreement	<u>n</u>	<u>%</u>
Strongly disagree	432	37.8
Disagree	343	30.0
Agree	238	20.8
Strongly agree	<u>129</u>	<u>11.3</u>
Total	1142	100.0

Note: 8 students did not respond when asked to select their level of agreement of time spent playing video games.

Table 18

Level of Agreement of Most Time Spent on the Internet Killing Time of Responding Students

Level of Agreement	<u>n</u>	<u>%</u>
Strongly disagree	360	31.5
Disagree	343	30.0
Agree	316	27.7
Strongly agree	<u>123</u>	<u>10.8</u>
Total	1142	100.0

Note: 8 students did not respond when asked to select their level of agreement of time spent killing time.

Table 19

Frequency of Shared Internet Experience With Others of Responding Students

Frequency of Shared		
Internet Experience	<u>n</u>	<u>%</u>
Never use Internet	126	11.1
Never shared	221	19.4
Not often	500	44.0
Often	<u>290</u>	<u>25.5</u>
Total	1137	100.0

Note: 13 students did not respond when asked of their Shared Internet Experience

Objective Three - Students' Perceptions of Actions on Computer and the Internet

Objective three was to describe the students' perceptions of their actions on the computer and the Internet based on the following variables: (a) Entering another person's program on the web without permission of the webmaster of the site; (b) Entering a pornography website; (c) Modifying another person's website without the permission of the webmaster of the site; (d) Selling pornography goods on the Internet; (f) Accessing another person's credit card number on the Internet and using that number to buy goods; (g) Telling a lie on another person's website and making a profit from it; (h) Intentionally spreading a computer virus on the Internet; (i) Spreading bad rumors about another person on the Internet; (j) Entering into a website using another person's name and intentionally getting that person into trouble; and (k) Intimidating and frightening another

person on the Internet. Students were asked to select from the following options: Never, Some but not often, Often, and Very Often.

Students were asked “Have you ever accessed another person’s computer program on the Internet without permission from the master of the program?” The majority, 803 (72.2%), indicated that they had never accessed another person’s computer program without permission as shown in Table 20.

Students were asked “Have you ever entered a pornography web site?” The majority, 712 (63.7%), indicated that they had never entered a pornography web site as shown in Table 21.

Table 20

Accessed Another Person’s Computer Program Without Permission

Assessed	<u>n</u>	<u>%</u>
None	803	72.2
Some but not often	167	15.0
Often	99	8.9
Very often	<u>43</u>	<u>3.9</u>
Total	1112	100.0

Students were asked “Have you ever modified another person’s computer program on the web sites without permission from the master of the program?” The majority, 845 (76.4%), indicated that they had never modified another person’s computer program without permission as shown in Table 22.

Table 21

Entered Pornographic Web Sites

Entered	<u>n</u>	<u>%</u>
None	712	63.7
Some but not often	252	22.6
Often	88	7.9
Very often	<u>65</u>	<u>5.8</u>
Total	1117	100.0

Table 22

Modified Another Person's Computer Program

Modified	<u>n</u>	<u>%</u>
None	845	76.4
Some but not often	117	10.6
Often	91	8.2
Very often	<u>53</u>	<u>4.8</u>
Total	1106	100.0

Students were asked "Have you ever sold pornographic goods on the web site?"

The majority, 917 (82.9%), indicated that they had never sold pornography goods on the web site as shown in Table 23.

Table 23

Sold Pornographic Goods

Sold	n	%
None	917	82.9
Some but not often	66	6.0
Often	70	6.3
Very often	<u>53</u>	<u>4.8</u>
Total	1106	100.0

Students were asked “Have you ever used another person’s credit card number to buy goods on the Internet?” The majority, 917 (83.1%), indicated that they had never used another person’s credit card number to buy goods on the Internet as shown in Table 24.

Table 24

Used Another Person’s Credit Card Number

Used	<u>n</u>	<u>%</u>
None	917	83.1
Some but not often	80	7.2
Often	60	5.4
Very often	<u>47</u>	<u>4.3</u>
Total	1104	100.0

Students were asked “Have you ever lied on other persons on the Internet and made a profit from it?” The majority, 912 (79.3%), indicated that they had never used another person’s credit card number to buy goods on the Internet as shown in Table 25.

Table 25

Lied on Other Persons on the Internet

Lied on Others	<u>n</u>	<u>%</u>
None	912	79.3
Some but not often	91	7.9
Often	58	5.0
Very often	<u>43</u>	<u>3.7</u>
Total	1110	96.5

Students were asked “Have you ever lied intentionally spread a computer virus on the Internet?” The majority, 916 (83.1%), indicated that they had never lied intentionally spread a computer virus on the Internet as shown in Table 26.

Table 26

Lied Intentionally to Spread a Computer Virus

Lied to Spread Virus	<u>n</u>	<u>%</u>
None	916	83.1
Some but not often	69	6.3
Often	71	6.4
Very often	<u>46</u>	<u>4.2</u>
Total	1102	100.0

Students were asked “Have you ever spread hurtful rumors to another person on the Internet?” The majority, 878 (79.5%), indicated that they had never spread hurtful rumors to another person on the Internet as shown in Table 27.

Table 27

Spread Hurtful Rumors to Another Person

Spread Rumors	<u>n</u>	<u>%</u>
None	878	79.5
Some but not often	116	10.5
Often	70	6.4
Very often	<u>40</u>	<u>3.6</u>
Total	1104	100.0

Students were asked “Have you ever used another person’s name on the Internet to intentionally get that person into trouble?” The majority, 890 (80.4%), indicated that they had never used another person’s name on the Internet to intentionally get that person into trouble as shown in Table 28.

Table 28

Used Another Person’s Name on the Internet to Intentionally Get That Person into Trouble

Used Name	<u>n</u>	<u>%</u>
None	890	80.4
Some but not often	100	9.0
Often	65	5.9
Very often	<u>52</u>	<u>4.7</u>
Total	1107	100.0

Students were asked “Have you ever intimidated or frightened other persons on the Internet?” The majority, 840 (76.9%), indicated that they had never intimidated or frightened other persons on the Internet as shown in Table 29.

Table 29

Intimidating or Frightening Other Persons on the Internet

Intimidated or Frightened	n	%
None	840	76.9
Some but not often	105	9.6
Often	98	8.9
Very often	<u>50</u>	<u>4.6</u>
Total	1093	100.0

Objective Four - Students’ Perceptions of Classmates’ Actions on the Computer

Objective four was to describe the students’ perceptions of their classmates’ actions on the computer and the Internet based on the following variables: (a) Entering another person’s program on the web without permission of the webmaster of the site; (b) Entering a pornography website; (c) Modifying another person’s website without the permission of the webmaster of the site; (d) Selling pornography goods on the Internet; (f) Accessing another person’s credit card number on the Internet and using that number to buy goods; (g) Telling a lie on another person’s website and making a profit from it; (h) Intentionally spreading a computer virus on the Internet; (i) Spreading bad rumors about another person on the Internet; (j) Entering into a website using another person’s name and intentionally getting that person into trouble; and (k) Intimidating and

frightening another person on the Internet, by the following scale: 1 = it's not deviant; 2 = it's not seriously deviant; 3 = seriously deviant; 4 = it's not seriously deviant.

Students were asked "If your classmates access another person's computer program on the web without permission from the master of the web site, what do you think about the behavior of the classmates?" The largest percentage of the students, 456 (39.9%), indicated that they thought that accessing another person's computer program without permission was seriously deviant as shown in Table 30.

Students were asked "If your classmates enter pornography web sites, what do you think about the behavior of your classmate?" The response selected most often was "It's very seriously deviant," with 442 (39.0%) of the students selecting this response: as shown in Table 31.

Table 30

Perceptions of Classmates' Level of Deviance If Accessing Another Person's Computer Program Without Permission

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	170	14.9
It's not seriously deviant	304	26.6
It's seriously deviant	456	39.9
It's very seriously deviant	<u>212</u>	<u>18.6</u>
Total	1142	100.0

Table 31

Perceptions of Classmates' Level of Deviance If Entering Pornography Web Sites

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	137	12.0
It's not seriously deviant	226	19.9
It's seriously deviant	332	29.1
It's very seriously deviant	<u>445</u>	<u>39.0</u>
Total	1140	100.0

Students were asked "If your classmates modify another person's computer program on the web sites without permission from the master of the web site, what do you think of the behavior of your classmates?" Four hundred forty-four (39.2%) indicated that this was seriously deviant behavior, as shown in Table 32.

Table 32

Perceptions of Classmates' Level of Deviance Of Modifying Another Person's Computer Program on the Web Sites Without Permission

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	130	11.4
It's not seriously deviant	261	22.9
It's seriously deviant	448	39.2
It's very seriously deviant	<u>303</u>	<u>26.5</u>
Total	1142	100.0

Students were asked “If your classmates sold pornography goods on the web, what do you think of this behavior of your classmates?” The majority, 563 (49.6%), indicated that they thought selling pornography goods on the web site was “Very seriously deviant” as shown in Table 33.

Table 33

Perceptions of Classmates' Level of Deviance If Selling Pornography Goods on the Web

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	149	13.1
It's not seriously deviant	133	11.7
It's seriously deviant	291	25.6
It's very seriously deviant	<u>563</u>	<u>49.6</u>
Total	1136	100.0

Students were asked “If your classmates access another person’s credit card number on the web, and used that number to buy goods for themselves; what do you think of the behavior of your classmates?” The majority, 799 (70.6%), indicated that they thought this behavior was very seriously deviant as shown in Table 34.

Students were asked “If your classmates tell a lie on other person’s web site and make a profit from it; what do you think of the behavior of your classmates?” The majority thought this behavior was either seriously deviant or very seriously deviant, 430 (37.7%) indicated that they thought the behavior was deviant and 433 (38.0%) indicated that they thought this behavior was very seriously deviant as shown in Table 35.

Table 34

Perceptions of Classmates' Level of Deviance If Accessing Another Person's Credit Card Number on the Web

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	76	6.7
It's not seriously deviant	83	7.3
It's seriously deviant	174	15.4
It's very seriously deviant	<u>799</u>	<u>70.6</u>
Total	1132	100.0

Students were asked "If your classmate intentionally spread a computer virus on the Internet, what do you think about the behavior of your classmates?" The majority, 728 (64.0%), indicated that they thought a classmate who intentionally spread a computer virus on the Internet was seriously deviant as shown in Table 36.

Table 35

Perceptions of Classmates' Level of Deviance If Telling a Lie on Other Person's Web Site and Making a Profit from it

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	116	10.2
It's not seriously deviant	161	14.1
It's seriously deviant	430	37.7
It's very seriously deviant	<u>433</u>	<u>38.0</u>
Total	1140	100.0

Table 36

Perceptions of Classmates' Level of Deviance If Intentionally Spreading a Computer Virus

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	74	6.5
It's not seriously deviant	102	9.0
It's seriously deviant	234	20.5
It's very seriously deviant	<u>728</u>	<u>64.0</u>
Total	1138	100.0

Students were asked "If your classmates spread bad rumors about another person on the Internet, what do you think about the behavior of your classmates?" The most frequently selected response was "It's seriously deviant," 408 (35.9%), of the students selecting this response as shown in Table 37.

Table 37

Perceptions of Classmates' Level of Deviance If Spreading Bad Rumors about Another Person on the Internet

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	117	10.3
It's not seriously deviant	240	21.1
It's seriously deviant	408	35.9
It's very seriously deviant	<u>371</u>	<u>32.7</u>
Total	1136	100.0

Students were asked “If your classmates enter into a web site using another person’s name, and intentionally get the person into trouble: what do you think about the behavior of your classmates?” The majority, 595 (52.4%), indicated that this is very seriously deviant behavior as shown in Table 38.

Table 38

Perceptions of Classmates’ Level of Deviance If Intentionally Getting a Person in Trouble by Using Their Name

Level of Deviance	<u>n</u>	<u>%</u>
It’s not deviant	89	7.8
It’s not seriously deviant	125	11.0
It’s seriously deviant	328	28.8
It’s very seriously deviant	<u>595</u>	<u>52.4</u>
Total	1137	100.0

Students were asked “If your classmates intimidate and frighten another person on the Internet, what do you think about the behavior of your classmates?” The majority thought that this behavior was either seriously deviant or very seriously deviant; 345 (30.4%) indicated that this was seriously deviant behavior and 365 (32.2%) indicated that this was very seriously deviant behavior as shown in Table 39.

Objectives Five and Six - Deviant Behavior Score

Objective five was to describe the middle and high school students’ Deviant Behavior Score. The majority, 869 (79.6%), of the responding students indicated that they had never displayed any deviant behavior while using the Internet as shown in Table

Table 39

Perceptions of Classmates' Level of Deviance If Intimidating and Frightening Another Person on the Internet

Level of Deviance	<u>n</u>	<u>%</u>
It's not deviant	170	15.0
It's not seriously deviant	255	22.4
It's seriously deviant	345	30.4
It's very seriously deviant	<u>365</u>	<u>32.2</u>
Total	1135	100.0

40. Objective six was to describe the middle and high school students' perception of their Peers' Behavior Score. The majority, 1,016 (81.5%), of the responding students indicated that they perceive their peers have Often or Very Often displayed deviant behavior while using the Internet as shown in Table 41.

Table 40

Self-perceived Deviant Behavior of Responding Students

Level of Deviance	<u>n</u>	<u>%</u>
None (10-17)	869	79.6
Some but not often (18-25)	133	12.2
Often (26-33)	79	7.2
Very often (34-40)	<u>11</u>	<u>1.0</u>
Total	1092	100.0

Table 41

Peers' Deviant Behavior as Perceived by Responding Students

Level of Deviance	n	%
It's not deviant (10-17)	46	4.1
It's not seriously deviant (18-25)	162	14.4
It's seriously deviant (26-33)	507	45.1
It's very seriously deviant (34-40)	<u>409</u>	<u>36.4</u>
Total	1124	100.0

Objective Seven - Comparison of Behavior Score by Selected Demographic Characteristics and Perceptions of Computer-related Activities

Objective seven was to compare the Behavior Score of middle and high school students on selected demographic characteristics and perceptions of computer-related activities. The Behavior Score was compared to the following selected demographic and perceptual characteristics and computer related-activities: (a) Gender, (b) Age, (c) Ethnicity, (d) Academic, (f) Religious Affiliation, (g) Student's interaction with teachers, (h) students' interaction with other students, (I) time spent online, (j) hours per day spent on the Internet and (k) working computer in the home.

Behavior Score by Gender

The majority of both male (n=325, 72.1%) and female (n=529, 87.4%) respondents indicated that they have "not displayed" any deviant behavior while using the Internet.

Overall, a low percentage ($\underline{n}=7$, 0.6%) of both groups indicated that they “very often displayed” deviant behavior while using the Internet as shown in Table 42.

Table 42

Student Deviant Behavior Score by Gender of Responding Students

Behavior	Gender					
	Male		Female		Total	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	325	72.1	529	87.4	854	80.9
Some but not often	76	16.9	46	7.6	122	11.6
Often	44	9.7	29	4.8	73	6.9
Very often	<u>6</u>	<u>1.3</u>	<u>1</u>	<u>0.2</u>	<u>7</u>	<u>0.6</u>
Total	451	100.0	605	100.0	1056	100.0

To determine whether there was a significant difference between males and females, the chi-square test was used. There was a significant difference in the involvement of deviance on the Internet: chi-square = 41.179, 3 df, and p value < 0.0005. Although the majority of each group reported not committing deviance, 27.9% of the males and 12.6% of the females reported deviance. There was twice as many males as females that reported deviance when using the Internet and computers.

Behavior Score by Age

The highest percentage of students that indicated they have displayed “some deviant behavior” while using the Internet was 14 years old ($\underline{n}=41$, 17.2%); compared to the lowest percentage ($\underline{n}=24$, 9.0%) which was the 17 year old. The lowest percentage total ($\underline{n}=9$, 0.8%) occurred for the response “very often displayed” deviant behavior while using the Internet. Overall, the highest number of participants ($\underline{n}=867$, 79.8%) indicated

that they have “not displayed” any deviant behavior while using the Internet, as shown in Table 43.

To determine whether there was a significant difference between the age groups of the students, the chi-square test was used. There were no significant differences found in the involvement of deviance on the Internet among age groups: chi-square = 20.579, 12 df. and p value < 0.057. Although the chi-square did not show any significance between age and Students’ Behavior Score, students ages 14, 15 and 16 had the largest percentage of deviance reported when using the Internet and computers.

Table 43

Student Deviant Behavior Score by Age of Responding Students

Deviance	Age										Total	
	13		14		15		16		17			
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	231	82.8	176	73.6	113	76.4	119	77.8	228	85.4	867	79.8
Some ^a	31	11.1	41	17.2	18	12.2	17	11.0	24	9.0	131	12.1
Often	16	5.5	19	8.0	14	9.4	16	10.5	14	5.2	79	7.3
Very Often	<u>1</u>	<u>0.6</u>	<u>3</u>	<u>1.2</u>	<u>3</u>	<u>2.0</u>	<u>1</u>	<u>0.7</u>	<u>1</u>	<u>0.4</u>	<u>9</u>	<u>0.8</u>
Total	279	100.0	239	100.0	148	100.0	153	100.0	267	100.0	1086	100.0

Note: ^aSome but not often

Behavior Score by Ethnicity

When comparing ethnicity, the highest percentage ($n=216$, 85.0%) of students that indicated they had “not displayed” any deviance while using the Internet or computer were White. The next highest amount reporting was African American ($n=519$, 82.9%). The lowest percentage total ($n=1$, 1.1%) occurred for the response “very often displayed” deviant behavior while using the Internet. Overall, the highest number of participants ($n=839$, 80.5%) indicated that they had “not displayed” any deviant behavior while using the Internet as shown in Table 44.

To determine whether there was a significant difference by ethnicity, the chi-square test was used. There was a significant difference in the involvement of deviance on the Internet: chi-square = 55.742, 12 df. and p value < 0.0005. The two groups that reported a large percentage of deviance were Asian and Hispanic or Spanish. Of the students that reported being Asians, 48.1% indicated some deviance and 30.2% of the Hispanic or Spanish students reported some deviance when using the Internet and computers.

Behavior Score by Academic Achievement

The highest percentage of students that indicated they had displayed “some” deviance while using the Internet were those with “Good” academic achievement. The largest amount ($n=55$, 10.5%) displayed “some deviant behavior” and those ($n=434$, 83.0%) who had “not displayed” any deviant behavior. The lowest percentage total ($n=1$, 2.4%) occurred for the response “very often displayed” deviant behavior while using the Internet, with “poor” academic achievement. Overall, the highest number of participants ($n=860$, 80.3%) indicated that they had “not displayed” any deviant behavior while using

the Internet, compared to those ($n=130$, 12.1%) who had displayed “some deviant behavior” while using the Internet, as shown in Table 45.

Table 44

Chi-square Test of Student Deviant Behavior Score by Ethnicity

	Ethnicity											
Deviance	AA ^a		S/H ^b		White		Asian		Other		Total	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	519	82.9	30	51.7	216	85.0	44	69.8	27	73.0	839	80.5
Some ^c	73	11.7	15	25.9	14	5.5	13	20.7	4	10.8	119	11.4
Often	31	5.0	12	20.7	19	7.5	5	7.9	5	13.5	73	7.0
Very Often	<u>3</u>	<u>0.4</u>	<u>1</u>	<u>1.7</u>	<u>2</u>	<u>2.0</u>	<u>1</u>	<u>1.6</u>	<u>1</u>	<u>2.7</u>	<u>11</u>	<u>1.1</u>
Total	626	100.0	58	100.0	254	100.0	63	100.0	37	100.0	1042	100.0

Note: AA^a = African American/Black, S/H^b = Spanish or Hispanic, ^cSome but not often

Table 45

Student Deviant Behavior Score by Academic Achievement of Responding Students

	Academic Achievement									
Deviance	Poor		Fair		Good		Excellent		Total	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	26	61.9	167	74.3	434	83.0	233	82.6	860	80.3
Some ^a	10	23.8	37	16.4	55	10.5	28	9.9	130	12.1
Often	5	11.9	21	9.3	31	5.9	15	5.4	72	6.7
Very Often	<u>1</u>	<u>2.4</u>	<u>0</u>	<u>0.0</u>	<u>3</u>	<u>0.6</u>	<u>6</u>	<u>2.1</u>	<u>10</u>	<u>0.9</u>
Total	42	100.0	225	100.0	523	100.0	282	100.0	1072	100.0

Note: ^aSome but not often

To determine whether there was a significant difference between academic achievement and Students' Behavior Score, the chi-square test was used. There was a significant difference in the involvement of deviance on the Internet: chi-square = 27.258, 9 df, and p value < 0.001. Those students that reported "poor" achievement had 38.1% indicate deviance and the students that reported "fair" achievement had 25.7% to indicate deviance compared to those students that indicated "good" (17%) or excellent (17.4) achievement.

Behavior Score by Religious Affiliation

The highest percentage of students that indicated they have displayed "some deviant behavior" and they have "not displayed" any deviance while using the Internet was the respondents with "Strong " religious affiliation. The largest percentage ($n=32$, 15.8%) that displayed "some" deviant behavior had no religious affiliation. The lowest percentage total ($n=4$, 0.7%) occurred for the response "very often displayed" deviant behavior while using the Internet and "strong" religious affiliation. Overall, the highest number of participants ($n=853$, 80.5) indicated that they have "not displayed" any deviant behavior while using the Internet, compared to those ($n=126$, 11.9) who had displayed "some deviant behavior" while using the Internet, as shown in Table 46.

To determine whether there was a significant difference between religious affiliation and Students' Behavior Score, the chi-square test was used. There was not a significant difference between religious affiliation and Students' Behavior Score: chi-square = 11.260, 6 df, and p value < 0.081. Although there was not a significant

difference between religious affiliation and Students' Behavior Score. students that reported no religious affiliation reported 26.2% deviance. This is compared to the students reporting "strong" (16.3%) and "very strong" (21.8%) affiliation.

Table 46

Student Deviant Behavior Score by Religious Affiliation of Responding Students

Deviance	Religious Affiliation							
	None		Strong		Very Strong		Total	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	150	73.9	509	83.7	194	78.2	853	80.5
Some ^a	32	15.8	63	10.3	31	12.5	126	11.9
Often	19	9.4	32	5.3	20	8.1	71	6.7
Very Often	<u>2</u>	<u>1.0</u>	<u>4</u>	<u>0.7</u>	<u>3</u>	<u>1.2</u>	<u>9</u>	<u>0.9</u>
Total	203	100.0	608	100.0	248	100.0	1059	100.0

Note: ^aSome but not often

Behavior Score by Level of Interaction with Teachers

The highest percentage of students that indicated they have displayed "some deviant behavior" or they have "not displayed" any deviance while using the Internet was also the respondent that indicated that they interact with their teachers "some" or "often." The largest amount (n=297, 84.1%) indicated they did not display any deviant behavior and interacted "some" with their teachers; those indicating that they have displayed "some" deviance had interacted with their teacher "often" (n=41, 11.7%) . The lowest percentage total (n=2, .09%) occurred for the response "very often displayed" deviant behavior while using the Internet. Overall, the highest number of participants (n=864,

79.7%) indicated that they have “not displayed” any deviant behavior while using the Internet, compared to those ($n=132$, 12.2%) who had displayed “some deviant behavior” while using the Internet, as shown in Table 47.

To determine whether there was statistically significant difference between the level of interaction with teachers and Student Behavior Score, the chi-square test was used. There was a significant difference in the involvement of deviance on the Internet: chi-square = 12.833, 9 df, and p value < 0.170. Although there was not a significant difference between level of interaction with teachers and Students’ Behavior Score, students that reported level of interaction with teachers as “none,” reported 26.3% deviance. This is compared to the students reported they interacted with their teachers “some” (15.9%), “often” (20.1%) and “very” (22.5).

Table 47

Student Deviant Behavior Score by Level of Interaction with Teachers of Responding Students

Deviance	Level of interaction with Teachers								Total	
	None		Some		Often		Very often			
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	157	73.7	297	84.1	279	79.9	131	77.5	864	79.7
Some ^a	36	16.9	36	10.2	41	11.7	19	11.2	132	12.2
Often	18	8.5	17	4.8	26	7.5	16	9.5	77	7.1
Very Often	<u>2</u>	<u>0.9</u>	<u>3</u>	<u>0.9</u>	<u>3</u>	<u>0.9</u>	<u>3</u>	<u>1.8</u>	<u>11</u>	<u>1.0</u>
Total	213	100.0	353	100.0	349	100.0	169	100.0	1084	100.0

Note: ^aSome but not often

Behavior Score by Level of Interaction with Classmates

The highest percentage of students that indicated they have displayed deviance “some” or “none” while using the Internet was also the respondent that indicated that they interact with their classmates “often” or “very often” much. The largest amount ($n=370$, 82.6%) perceive themselves as displaying no deviance and interacted “very often” much with their classmates. The lowest percentage total occurred for the response “some” and “very often” displayed deviant behavior while using the Internet. Overall, the highest number of participants ($n=864$, 80.2%) indicated that they have “not displayed” any deviant behavior while using the Internet, compared to those ($n=128$, 11.9%) who had displayed “some deviant behavior” while using the Internet, as shown in Table 48.

Table 48

Student Deviant Behavior Score by Level of Interaction with Classmates of Responding Students

Deviance	Level of Interaction with Classmates								Total	
	None		Some		Often		Very often			
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	57	64.8	140	78.2	297	82.0	370	82.6	864	80.2
Some ^a	20	22.7	23	12.8	38	10.5	47	10.5	128	11.9
Often	11	12.5	16	9.0	22	6.1	26	5.8	75	7.0
Very Often	<u>0</u>	<u>0.0</u>	<u>0</u>	<u>0.0</u>	<u>5</u>	<u>1.4</u>	<u>5</u>	<u>1.1</u>	<u>10</u>	<u>0.9</u>
Total	88	100.0	179	100.0	362	100.0	448	100.0	1077	100.0

Note: ^aSome but not often

To determine whether there was a significant difference between the level of interaction with classmates and the Student Behavior Score, the chi-square test was used. There was a significant difference in the involvement of deviance on the Internet: chi-square = 22.932, 9 df, and p value < 0.006. Students that reported no interaction with classmates had the highest overall percentage of students indicating deviance (35.2%). This is compared to the other levels of interaction that gets lower as the level of reported interaction gets larger [“some” (21.8%), “often” (18%) and “very” (17.4)].

Behavior Score by Time Spent Online

The highest percentage of students that indicated they have displayed “some deviant behavior” or they have “not displayed” any deviance while using the Internet was also the respondent that indicated that they spent “little” or “much” time online. The largest amount ($n=42$, 9.8% and $n=42$, 12.4%) displayed “some deviant behavior.” The majority of the students reported not displaying any deviant behavior on online ($n=363$, 84.6%) who had “not displayed” any deviant behavior had spent “little” time online. The lowest percentage total ($n=1$, 0.6%) occurred for the response “very often displayed” deviant behavior while using the Internet. Overall, the highest number of participants ($n=866$, 80.0%) indicated that they have “not displayed” any deviant behavior while using the Internet, compared to those ($n=133$, 12.3%) who had displayed “some deviant behavior” while using the Internet, as shown in Table 49.

To determine whether there was a significant difference between the time spent online of students and the Student Behavior Score, the chi-square test was used. There was a significant difference in the involvement of deviance on the Internet: chi-square = 23.730,

9 df, and p value < 0.005. Students that reported spending “very much” time online had the highest overall percentage of students indicating deviance (22.2%). This is compared to the other students that reported spending less time online, “little” (15.5%) and “much” (21.2%).

Table 49

Student Deviant Behavior Score by Time Spent Online of Responding Students

Deviance	Time Spent Online									
	None		Little		Much		Very Much		Total	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	105	71.4	363	84.6	268	78.8	130	77.8	866	80.0
Some ^a	28	19.0	42	9.8	42	12.4	21	12.6	133	12.3
Often	12	8.2	23	5.4	28	8.2	11	6.6	74	6.8
Very Often	<u>2</u>	<u>1.4</u>	<u>1</u>	<u>0.2</u>	<u>2</u>	<u>0.6</u>	<u>5</u>	<u>3.0</u>	<u>10</u>	<u>0.9</u>
Total	147	100.0	429	100.0	340	100.0	167	100.0	1083	100.0

Note: ^aSome but not often

The highest percentage of students that indicated they have not displayed any deviant behavior while using the Internet were those that spent the least amount of time online. Most respondents indicated that they spent two or less hours online. The largest amount (n=544, 84.6% and n=216, 80.9%) of respondent reported displaying no deviance online and spending from less than two to four hours online. The lowest percentage total (n=1, 2.6%) occurred for the response “very often displayed” deviant behavior while using the Internet. Overall, the highest number of participants (n=868, 79.6%) indicated that they have “not displayed” any deviant behavior while using the Internet, compared

to those ($n=133$, 12.2%) who had displayed "some deviant behavior" while using the Internet, as shown in Table 50.

To determine whether there was a significant difference between the hours per day spent online by students and the Student Behavior Score, the chi-square test was used. There was a significant difference in the involvement of deviance on the Internet: chi-square = 103.729, 12 df, and p value < 0.0005. Students that reported spending the least amount of time online reported the lowest percentage of deviance (≤ 2 hours = 15.3%). This is compared to the other amounts of time spent online, in which the percentage of deviance increases as more time is spent online (3-4 hours, 19.1%, 5-6 hours, 37.2, 7-8 hours, 44.7%; ≥ 9 , 46.7%).

Table 50

Student Deviant Behavior Score by Hours Per Day Spent Online of Responding Students

	Hours Per Day Spent Online											
Deviance	≤2		3-4		5-6		7-8		≥9		Total	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	544	84.6	216	80.9	71	62.8	21	55.3	16	53.3	868	79.6
Some ^a	69	10.7	29	10.9	22	19.5	9	23.7	4	13.3	133	12.2
Often	26	4.0	19	7.1	19	16.8	7	18.4	8	26.7	79	7.2
Very Often	<u>4</u>	<u>0.6</u>	<u>3</u>	<u>1.1</u>	<u>1</u>	<u>0.9</u>	<u>1</u>	<u>2.6</u>	<u>2</u>	<u>6.7</u>	<u>11</u>	<u>1.0</u>
Total	643	100.0	267	100.0	113	100.0	38	100.0	30	100.0	1091	100.0

Note: ^aSome but not often

Behavior Score by Working Computer in Home

When comparing students with a working computer in the home to students without one, the highest percentage ($n=621$, 83.0%) of students that indicated they “do not display” any deviance while using the Internet or computer were those with a computer and 214 (76.4%) without a computer indicated they “do not display” deviance. The highest percentage ($n=36$, 12.9%) reporting deviance was the students that reported not having a computer in the home, as shown in Table 51.

To determine whether there was a significant difference between having a working computer in the home and the Students’ Behavior Score, the chi-square test was used. There was a significant difference in those students with a computer and those students without one: chi-square = 9.239, 3 df, and p value < 0.026. The overall percentage of deviance was higher for those students without a computer in the home. Of the students without a computer in the home, 23.6% reported some deviance. Seventeen percent of the students who had a computer in the home indicated deviant behavior.

Objective Eight - Comparison of Behavior and Peers’ Scores

Objective 8 was to compare the means of Student Behavior Score and the Peers’ Behavior Score. A paired-samples t-test was used to test for differences between Behavior Scores. The means and standard deviations of the Student Behavior Score ($M = 13.8659$, $SD = 6.1630$) and the Peers’ Behavior Score ($M = 30.6276$, $SD = 6.3548$) shows that there is a significant difference in how the participants perceive their personal and their peers’ Internet and computer activities, as shown in Table 52.

Table 51

Table 51

Student Deviant Behavior Score by Working Computer in Home of Responding Students

	Working Computer in Home					
	Yes		No		Total	
Deviance	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
None	621	83.0	214	76.4	835	81.2
Some ^a	84	11.2	36	12.9	120	11.7
Often	38	5.1	28	10.0	66	6.4
Very Often	<u>5</u>	<u>0.7</u>	<u>2</u>	<u>0.7</u>	<u>7</u>	<u>0.7</u>
Total	748	100.0	280	100.0	1055	100.0

Note: ^aSome but not often

Table 52

Paired-samples T-Test of Students' Behavior Score by Peers' Behavior Score

Behavior Score	N	Mean	SD	Standard Error Mean
Students'	1074	13.8659	6.1630	.1881
Peers'	1074	30.6276	6.3548	.1939
Paired-samples Correlations				
Students' and Peers' Scores	N	Correlation	Sig.	
	1074	-.264	.000	

T-test for paired-samples was computed on the Students' Behavior Score and the Peers' Behavior Score. Differences between the Students' Behavior Score and the Peers' Behavior Score means was significant at the .05 level, paired ($t(1073) = -55.202$; $p = .000$).

Paired Differences						
	t	df	Sig. (2 tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Students' - Peers' Behavior Score	-55.202	1073	.000	-16.7616	17.3574	-16.1668

Objective Nine - Relationships Between Student Behavior and Peers' Behavior Scores and Selected Demographics Characteristics and Perceptions of Computer-related Activities

Objective 9 was to determine if a relationship exists between the peers' and students' behavior score and selected demographics characteristics and perceptions of computer-related activities that may explain the level of the students' perceptions of deviance when using the Internet and computers. The following selected demographics characteristics and perceptions of computer-related activities were entered: gender, age, religion, amount of allowance, parents encourage Internet use, academic achievement, interaction with classmates, interaction with teachers, ability to use the Internet, access to computer with the Internet, hours per day spent online, working computer in the home, working computer in the home with Internet and type of school.

This objective was accomplished using multiple regression analyses with the Peers' and Students' Behavior Scores as the dependent variables. The other variables were

treated as independent variables. The stepwise model entry of the variables was used because of the exploratory nature of the study. In this regression equation, variables were added that increased the explained variance by one percent or more as long as the regression equation remained significant.

Table 53 presents the results of the multiple regression analysis for the dependent variable, Students' Behavior Score. The variable which entered the regression model first was gender. Considered alone, this variable explained 3.2% of the variance in students' perceptions of deviance. The variable which entered second was "access to a computer with Internet," explaining 2.5% of the variance in the model, and "hours per day spent online" was the third variable explaining 2.0% of the variance in the model.

Two other variables explained an additional 1.0% of the variances in the students' perception of deviance. These variables were: ethnicity and working computer in home. The five variables explained a total of 8.8% of the variance in students' perceptions of deviance (see Table 53). The nature of the influence of each of these variables was such that each one influenced students' perceptions of deviance. So that, if one of the variables was absent the students' overall perceptions of what is deviant when using computers and the Internet would change.

Table 54 presents the results of the multiple regression analysis for dependent variable, Peers' Behavior Score. The variable which entered the regression model first was "interactions with teacher." Considered alone, this variable explained 2.9% of the variance in students' perceptions of peers' deviant behavior. The variable which entered

second was “gender,” explaining 2.1% of the variance in the model, and “ability to use the Internet” was the third variable explaining 1.4% of the variance in the model.

Five other variables explained an additional 3.3% of the variances in the students’ perceptions of Peers’ Behavior Score. These variables were: hours per day spent online, religion, age, access to computer with Internet, and ethnicity. These eight variables explained a total of 9.7% of the variance in students’ perceptions of Peers’ Behavior Score (see Table 54). The nature of the influence of each of these variables was such that each one influenced students’ perceptions of their Peers’ Behavior Score. So that, if one of the variables was absent the students’ overall perceptions of the Peers’ Behavior Score would change.

Hypotheses

The researcher believed that the type of school (middle or high school) a student attended would influence how a student perceived deviant behavior was displayed. To detect a difference between Students’ Behavior Score and Peers’ Behavior Score by type of school, two research hypotheses were identified. These hypotheses were:

1. There is a significant difference in the Students’ Behavior Score of middle and high school students. High school students will have a higher deviance score.
2. There is a significant difference in the Peers’ Behavior Score of middle and high school students. High school students will have a higher deviance score.

Hypothesis One

Hypothesis one of this study was that there is a significant difference in the Students' Behavior Score of middle and high School students and that high school students will have a higher deviance score. The highest percentage of middle and high school students indicated they had displayed "None" or a "Little" deviance while using the Internet. At the middle school level, the largest amount ($n=387$, 44.5%) displayed "None" and the next highest number, at the high school level ($n=482$, 55.5%), did not display any deviance, as shown in Table 55.

To determine whether there was a significant difference between type of school and Student Behavior Score, the chi-square test was used. There was a significant difference between the type of school and Student Behavior Score: chi-square = 24.507, 3 df. and p value < 0.0005. Although the chi-square showed a significant difference, middle school students had a higher score means (14.9279) than high school students (12.9204) and because of this the hypothesis is rejected.

Hypothesis Two

Hypothesis two of the study was to determine if there was a significant difference in the Peers' Behavior Score of middle and high school students. The highest percentage of middle and high school students indicated they perceived their classmates as displaying "Much" or "Very Much" deviance while using the Internet. At the middle school level, the largest amount ($n=268$, 52.9%) displayed "Much" and the next highest number ($n=185$, 45.2%) displayed "Very" deviance. At the high school level, the largest amount ($n=239$, 47.1%) displayed "Much" and the next highest number ($n=224$, 54.8%) display "Very" much deviance, as shown in Table 56.

Table 53

Multiple Regression Analysis of Selected Demographics Characteristics and Perceptions of Computer-related Activities and Students' Behavior Score

Source of Variation	df	MS	F-ratio	p
Regression	5	5.037	17.590	<.0001
Residual	908	.286		
Total	913			

Variables in the Equation					
Variables	R2 Cumulative	R2 Change	F Change	p Change	Beta
Gender	.032	.032	30.335	.000	-.147
Access to computer/Internet	.078	.025	24.756	.000	.149
Hours per day spent online	.053	.020	19.702	.000	-.179
Ethnic	.083	.005	5.205	.023	.085
Working computer in home	.088	.005	5.270	.022	.078

Variables not in the Equation		
Variables	t	Sign t
Age	1.004	.316
Religion	.367	.714
Amount of Allowance	1.217	.224
Parents encourage Internet Use	1.173	.241
Academic Achievement	-1.843	.066
Interaction with Classmates	-1.204	.229
Interaction with Teachers	.243	.808
Ability to Use the Internet	-1.919	.055
Working computer in home w/Internet	.424	.671
Type of School	-1.177	.239

Table 54

Multiple Regression Analysis of Selected Demographics Characteristics and Perceptions of Computer-related Activities and Students' Perceptions of Peers' Behavior Score

Source of Variation	df	MS	F-ratio	p
Regression	8	442.328	12.166	.000
Residual	904	36.357		
Total	912			

Variables in the Equation

Variables	R ² Cumulative	R ² Change	F Change	p Change	Beta
Interactions with teachers	.029	.029	27.645	.000	.172
Gender	.050	.021	19.994	.000	.145
Ability to use the Internet	.064	.014	13.155	.000	.117
Hours per day spent online	.074	.010	9.741	.002	-.103
Religion	.081	.007	7.298	.007	.087
Age	.087	.006	5.607	.018	-.076
Access to computer w/Internet	.092	.005	5.369	.021	.082
Ethnic	.097	.005	4.977	.026	-.072

Variables not in the Equation

Variables	t	Sign t
Amount of Allowance	.011	.991
Parents encourage Internet Use	-.009	.993
Academic Achievement	.450	.653
Interaction with Classmates	.900	.369
Working computer in home	-.590	.555
Working computer in home w/Internet	.564	.573
Type of School	-.125	.901

Table 55

Students' Behavior Score by Type of School

Type of School	Students' Behavior Score									
	None		Some ^a		Often		Very Often		Total	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Middle	387	44.5	85	63.9	47	59.5	8	72.7	527	48.3
High	<u>482</u>	<u>55.5</u>	<u>48</u>	<u>36.1</u>	<u>32</u>	<u>40.5</u>	<u>3</u>	<u>27.3</u>	<u>565</u>	<u>51.7</u>
Total	869	100.0	133	100.0	79	100.0	11	100.0	1092	100.0

Note: ^aSome but not often

Table 56

Students' Perception of Peers' Behavior Score by Type of School

		Peers' Behavior Score									
Type of	Not ^a		Not seriously ^b		Seriously ^c		Very seriously ^d		Total		
School	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	
Middle	17	37.0	89	54.9	268	52.9	185	45.2	559	49.7	
High	<u>29</u>	<u>63.0</u>	<u>73</u>	<u>45.1</u>	<u>239</u>	<u>47.1</u>	<u>224</u>	<u>54.8</u>	<u>565</u>	<u>50.3</u>	
Total	46	100.0	162	100.0	507	100.0	409	100.0	1124	100.0	

Note: ^aIt's not deviant, ^bIt's not seriously deviant, ^cIt's seriously deviant, ^dIt's very seriously deviant

To determine whether there was a significant difference between Type of School and Peers' Behavior Score, the chi-square test was used. There was no statistically significant difference between the Type of School and Peers' Behavior Score: chi-square = 10.057, 3 df, and p value < 0.018.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The primary purpose of this study was to explore middle and high school students' perceptions of deviant behavior when using computers and the Internet. In order to answer the research problem, nine objectives and two hypotheses were formulated to guide the study.

The target population for this study was defined as middle and high school students. The accessible population included all students who attended a middle or high school in the East Baton Rouge Parish School System (EBRPSS) with computers that are capable of accessing the Internet. A convenient sample of approximately 1,150 students were surveyed (575 middle and 575 high school students). Principals at these schools were notified of the study and asked to identify teachers with Internet access in their classrooms. The school principals decided which teachers would participate in the study, which determined the students to survey.

The instrument was developed by a Professor San-Yi Li in Taiwan (who gave the researcher permission to use his instrument for this study) (see Appendix E) and revised by the researcher. Several key demographic questions were added to the survey, which were: "What is your race or ethnicity?," "Is there a working computer in the home where you live?," "If there is a working computer in the home where you live, is it connected to the Internet?," and "What type school do you attend?" The original survey had 62 questions. After the revisions, the number of questions increased to 66 (see Appendix A). All of the questions were not used for this study. Questions that addressed the objectives

of the study were selected as variables to be used in the study. The selected variables were systematically copied into a file. The primary variables studied were categorized as: 1) students' demographic characteristics 2) computer-related activities 3) students' perceptions of deviant behavior when using computers and the Internet 4) students' perception of their peers' deviant behavior when using computers and the Internet 5) students' ability to use computers and the Internet.

Data were collected during the Spring semester of 2000. The procedure for collecting the data was as follows:

1. The EBRPSS Director of Academic Accountability was contacted to obtain approval to conduct a research survey in the middle and high schools in the system (see Appendix B and Appendix C).
2. The parish Director of Technology (was contacted by telephone and visited in person by the researcher to obtain the list of schools) identified the seven middle and seven high schools with computers that had access to the Internet.
3. Principals of the schools identified were then contacted (by faxed letter and telephone) (see Appendix D) and a request was made to survey students with computer and Internet usage experience.
4. Those teachers and students selected by the school principals were informed of the general objectives of the research by principal and the researcher. Students were asked to participate in the study voluntarily.

Once the subjects agreed to participate in the research, they were informed that this project required them to complete a survey that consists of 66 questions (see Appendix A). Students were given a pencil and scantron sheet to record responses and an additional sheet with open-end questions to respond. Students were allowed a maximum of 45 minutes to complete the survey, but additional time was allowed for those students needing more time. Five hundred seventy five middle school students and 575 high school students responded to the survey.

Summary

Objective One: Demographics

The first objective of the study was to describe middle and high school students on selected demographic characteristics: (a) Gender, (b) Age, (c) Ethnicity, (d) Grade in School, (e) Type of School (middle or high school), (f) Academic Achievement as perceived by the students, (g) Religious Affiliation, (h) Students' interaction with teachers, and (i) Students' interaction with other students.

Summary

Participants of the study ranged in age from 13 to 17 years old. The majority of the responding students were African American, with the next largest group of respondents being White. The grade level of the students ranged from 7th to 12th grade, with the 11th or 12th graders having the largest number of respondents. Students in the study were either in middle or high school and most of them rated their academic achievement as good. Most of the students indicated they had a strong religious affiliation. A large portion of the students interacted with their classmates and teacher regularly.

Conclusions and Recommendations

During the analyses of the findings, the researcher discovered that the data collected from respondents on their grade level was misreported. Some students at the middle school level reported being in high school and some students at the high school level reported being in middle school. To avoid this from happening in future research of this nature, the researcher recommends that a second or third person assist the primary researcher in collecting the data. The extra help will be able to assist in checking over the scantron sheets for accurate data entry. Such things as school type, grade, age, name of school, etc.; should be checked for correctness. These should be easy to check since students were grouped according to grade level.

Objective Two: Students' Perceptions of Abilities or Time Spent in Computer-Related Activities

The second objective was to describe the middle and high school students' perceptions of the amount of time they spent engaging in selected computer-related activities: (a) ability to use the computer and Internet; (b) computer and Internet accessibility; (c) time spent on the Internet; (d) time spent on the Internet to collect information; (e) time spent on "chatroom" websites; (f) time spent playing video game websites; (g) time spent surfing the Internet or killing time; and (h) time spent sharing with others about the Internet.

Summary

The majority of the students considered their ability to use the computer and Internet as good, while nearly half of the participants indicated computer and Internet access was very easy to find. The largest number of students indicated spending very little time on

the Internet, but most of them reported spending five to six hours per day on the Internet.

Students spend most of their time on the Internet in chatrooms, visiting video game websites, and killing time or surfing. They also spend time collecting information, but less time doing this activity compared to the others. Sharing their Internet experience with others is not an activity that is done by most of the students.

Conclusions and Recommendations

The researcher highly recommends that when asking students about time that the question be asked in more than one way, for example, an open-ended question or allowing students to write in a response that is not listed as a choice. When students were asked if they spent much time online, a large number of students reported spending no time online, but when given a choice of how many hours spent online the responses were different. Students were able to understand the concept of the amount of time spent online when specific time segments (less than one hour or five hours) were given versus just asking how they perceive the amount of time they spend online (none or very little). They were better able to answer this question and valuable data was not lost.

Objective Three: Perceptions of Actions on the Computer and Internet

The third objective of the study was to describe the students' perceptions of actions on the computer and Internet on following variables: (a) Entering another person's program on the web without permission of the webmaster of the site, (b) Entering a pornography website, (c) Modifying another person website without the permission of the webmaster of the site, (d) Selling pornography goods on the Internet, (e) Accessing another person's credit card number on the Internet and using that number to buy goods,

(f) Telling a lie on another person's website and making a profit from it, (g) Intentionally spreading a computer virus on the Internet, (h) Spreading bad rumors about another person on the Internet, (i) Entering into a website using another person's name and intentionally getting that person into trouble, and (j) Intimidating and frightening another person on the Internet

Summary

The majority of the students reported that they have not displayed any of the deviant activities such as entering another person's program on the web without permission of the webmaster of the site, entering a pornography website, modifying another person website without the permission of the webmaster of the site, selling pornography goods on the Internet when using the computer or the Internet, accessing another person's credit card number on the Internet and using that number to buy goods, telling a lie on another person's website and making a profit from it, intentionally spreading a computer virus on the Internet, spreading bad rumors about another person on the Internet, entering into a website using another person's name and intentionally getting that person into trouble, and intimidating and frightening another person on the Internet. A small percentage of students admitted to displaying some of these deviant activities when using the Internet and computers.

Conclusions

Students are aware of deviant behaviors on computers and the Internet and are making a choice not to participate in these activities. When computer and Internet deviance is committed by teenagers, this seems to get the attention of mass media and is

highly publicized. These findings appear to support the research; showing that teenagers commit a small percentage of computer and Internet deviance. (Harrison, 1999; Sterling, 1992)

Recommendations

To ensure that these behaviors continue with students, an awareness of appropriate and inappropriate computer and Internet behaviors must be provided by: teachers, parents, librarians and educational resource writers. In creating this awareness, students may develop an understanding of the importance of computer ethics. Additionally, those that plan and organize computer courses should be aware not to overcrowd class. This could open the door for unattended students to become involved in deviance. One of the primary methods of decreasing computer deviance is supervision. If classes are large and overcrowded, it becomes difficult to control the students' behaviors when using the computer and Internet.

Objective Four: Perceptions of Classmates Actions on the Computer and Internet

Objective four was to describe the students' perception of their classmate's actions on the computer and the Internet based on the following variables: (a) Entering another person's program on the web without permission of the webmaster of the site; (b) Entering a pornography website; (c) Modifying another person website without the permission of the webmaster of the site; (d) Selling pornography goods on the Internet; (f) Accessing another person's credit card number on the Internet and using that number to buy goods; (g) Telling a lie on another person's website and making a profit from it; (h) Intentionally spreading a computer virus on the Internet; (i) Spreading bad rumors

about another person on the Internet; (j) Entering into a website using another person's name and intentionally getting that person into trouble; and (k) Intimidating and frightening another person on the Internet.

Summary

The majority of the students perceived that their classmates are engaging in deviant or very seriously deviant activities on the Internet and computers. A small percentage of students perceived that their classmate's activities as not being deviant.

Conclusions and Recommendations

Students appear to be able to freely report behaviors that are deviant about their peers, but the majority of the students reported that they have not committed any deviance online. Students should be encouraged to talk about their online activities, even if they are deviant. This is the first step to teaching them good ethics.

Objective Five: Describe Middle and High School Students' Behavior Score

Objective five was to describe the middle and high school Students' Deviant Behavior Score, which indicates how often a student perceives he/she is using deviant behavior when using the computer or Internet.

Summary

According to the Students' Deviant Behavior Score, the majority, 869 (79.6%), of the responding students indicated that they displayed no deviance or some deviant behavior while using the Internet. Only a small percentage of students indicated deviance.

Recommendations

The researcher recommends that further research be conducted to better understand how a student may perceive deviance when using a computer and the Internet. The researcher further recommends that a similar study be conducted, but qualitative in nature of the perceptions of students in elementary, middle and high school students. This is suggested to provide individual experiences to support the quantitative findings in this study.

Objective Six: Describe Middle and High School Students' Peers' Behavior Score

Objective six was to describe the middle and high school students' Peers' Behavior Score, which indicates how often a student perceives his/her classmate to be displaying deviant behavior when using the computer or Internet.

Summary and Conclusions

The majority, (1,016, 81.5%), of the students perceived their classmates to be displaying deviant behavior often or very often when using the Internet and computers. The researcher believes that if the students' peers are engaging in this type of behavior than a larger number of students are engaging as well, but are not disclosing this information. Except that they feel more comfortable disclosing what others are doing..

Recommendations

Computer and Internet ethics should be taught at all levels of education. Students should be talking about their activities with adults and parents. Teachers and librarians

should be monitoring students behaviors online. Supervision is the best means of curtailing deviance. There are many electronic devices that can aid in this supervision.

Objective Seven: Compare the Behavior Score of Middle and High School Students

Objective seven was to compare the Behavior Score of middle and high school students on selected demographic characteristics and perceptions of computer-related activities. The Chi-square procedure was used to determine if a relationship existed with each of the following selected demographic and perceptual characteristics and computer related-activities: (a) Gender, (b) Age, (c) Ethnicity, (d) Academic, (f) Religious Affiliation, (g) Student's interaction with teachers, (h) students' interaction with other students, (I) time spent online, (j) hours per day spent on the Internet and (k) working computer in the home.

Summary and Conclusions

When comparing the Students' Behavior Score, the following findings were discovered about gender; males indicated displaying more deviance then females when using the Internet and computers. Results indicated a statistically significant relationship between gender and perceived deviance. It appears that males are more likely to display deviance when using the Internet and computers. The results showed that 27.9% of the males and 12.6% of the females reported deviance. There was twice as many males as females that reported deviance when using the Internet and computers.

The variable age showed that 13 and 17 year olds had the lowest percentage of students that displayed deviance while using computers and the Internet. Students ages

14, 15 and 16 had the largest percentage of deviance reported. Still, all of the age groups indicated that the majority of the students did not display any deviance.

The ethnic group indicating the largest percentage of deviance when using the Internet and computers was the Spanish/Hispanic students. The second largest percentage of students indicating some deviance were Asian students. This is comparable to a study by Hollinger (1996b) of college students. He research crime by computer as it correlates with software piracy and unauthorized account access of college students. He reported that Asian and Hispanic students indicated the highest levels of piracy.

When reporting academic achievement, the majority of students reported their academic achievement as being good and most of the students perceived themselves as displaying no deviance or some deviance when online. This test resulted in a significant relationship between academic achievement and Student Behavior Score. The highest percentage of deviance was reported by students indicating poor or fair academic achievement. Of the students that reported "poor" achievement, 38.1% indicated deviance and the students that reported "fair" achievement had 25.7% to indicate deviance compared to those students that indicated "good" (17%) or excellent (17.4) achievement.

For religious affiliation, those students that indicated a strong or very strong religious affiliation also had the largest percentage of students that did not displayed deviance when using computers and the Internet. Religious affiliation did not result in a statistically significant relationship with Student Behavior Score. When comparing the no religious affiliation with strong religious (the group that is closest in numbers), there is no

significant difference. The researcher believes these students are either just honest because of their religious affiliation, or religious affiliation for some is not as effective as for others in developing ethics. After all, they were able to admit what they are doing online.

Students' interaction with teachers, most of the students indicated that they interacted with their teachers. Interacting with teachers did not have a significant relationship with the Student Behavior Score. Although there was not a significant difference between level of interaction with teachers and Students' Behavior Score, students that reported no interaction with teachers had 26.3% to report deviance. This is compared to the students reported they interacted with their teachers "some" (15.9%), "often" (20.1%) and "very" (22.5).

Student's that interacted with other students reported the least amount of deviance when using computers and the Internet. The majority of the students indicated that they interact with their classmates. There was a significant relationship between the Student Behavior Score and the level of interaction students have with their classmates. Students that reported no interaction with classmates had the highest overall percentage of students indicating deviance (35.2%). This is compared to the other levels of interaction that gets lower as the level of reported interaction gets larger ["some" (21.8%), "often" (18%) and "very" (17.4)]. Therefore, students that alienate themselves from others are engaging in more deviance activity when using computers and the Internet.

The majority of the students indicated that they spend much time online and when they display very little deviance when using the Internet and computers. This analysis was interesting because some of the students indicated that they do not spend any time online, but they displayed deviant behavior when online (time spent online “none,” 28.6% of the students indicated deviance online). Students evidently misunderstood the question. Students time spent online have a significant relationship with Students’ Behavior Score. Students that reported spending more time online had the highest overall percentage of students indicating deviance -“very much” (22.2%)and “much” (21.2%). This is compared to the other students that reported spending less time online, “little” (15.5%).

Hours per day spent on the Internet. when asked specifically how many hours per day spent on the Internet. students could relate to this question and responded more accurately. Hours spent online is highly related to Student Behavior Score. Students that reported spending the least amount of time online reported the lowest percentage of deviance (≤ 2 hours =15.3%). This is compared to the other amounts of time spent online, in which the percentage of deviance increases as more time is spent online (3-4 hours, 19.1%, 5-6 hours, 37.2, 7-8 hours, 44,7%; ≥ 9 , 46.7%). It is highly recommended that students’ time online is supervised and coupled with a program that will monitor or control their online activity.

Working computer in the home, the majority of the students indicated that there is a working computer in the home. However, a smaller amount of students have indicated displaying some deviance while using the Internet and computers. A working computer in the home was shown to be significantly related to the Student Behavior Score. The

percentages for deviance was higher for those students not having a computer in the home. This relationship could mean that students do not need a computer in the home to engage in deviant acts on computers and the Internet. As discussed in the review of literature, Kevin Mitnick did not own a computer, but he had been engaging in deviant acts with computer since he was a juvenile. Students with working computer in the home may be more familiar with computers and do not realize or been taught that certain behaviors (as described in this study) are deviant and may not be reporting their behaviors accurately. Therefore, the significance may be how students with computers view what is actually deviant verses those without a computer in the home with less experience. Coldwell (1996) concluded that students from machine-based disciplines (computer environments) are less able to predict the social consequences of computer crime than those from people-based disciplines (no computers).

Due to the fact that students are being introduced to computers and the Internet at an earlier age, technology ethics needs to be introduced at all levels of education starting when computers are first introduced to the student. Having a computer in the home allows for more chances of deviance to occur; despite the student may not realize what is happening. Therefore, supervision and ethics teaching becomes a necessity at home and away for home.

Recommendations

The researcher recommends that further research be conducted to better understand the types and levels of deviant behavior displayed by students when using a computer and the Internet. The researcher further recommends that a similar study be

conducted, but qualitative in nature of the perceptions of students in elementary, middle and high school students. This is suggested to provide individual experiences to support the quantitative findings in this study.

Objective Eight - Comparison of Student Behavior and Peers' Behavior Scores

Objective eight was to compare the Student Behavior Score and the Peers' Behavior Score.

Summary and Conclusions

When comparing the means of the Peers' Behavior Score and the Students' Behavior Score, students' perception of themselves and their classmates are very different. Students perceive their peers are displaying deviant behavior often and very often on computers and the Internet. However, students perceive that they are not engaging in deviance or some deviant behavior. The researcher believes that if the students' peers are engaging in this type of behavior than a larger number of students are engaging as well, but are not disclosing this information. Students may feel more comfortable disclosing what others are doing.

Students may not want to admit displaying deviance, but it is easier to be more open when discussing someone else's behavior. Therefore, the two scores can be used to gauge the amount of actual deviance being displayed.

Recommendations

The researcher recommends that further research be conducted to better understand how a students may perceive deviance when using a computer and the

Internet. The researcher further recommends that a similar study be conducted, but qualitative in nature of the perceptions of students in middle and high school students. This is suggested to provide individual experiences to better understand why students perceive their classmates to be displaying deviance on the Internet and computer more often.

Objective Nine - Relationships Between Student Behavior and Peers' Behavior Scores and Selected Demographic Characteristics and Perceptions of Computer-related Activities

Objective nine was to determine if a relationship existed between the Student Behavior Score and the Peers' Behavior Score on selected demographic and perceptual characteristics and computer-related activities.

Summary and Conclusion

Results of the analyses indicate that relationships are statistically significant between gender, hours spent on the computer, access to a computer with Internet, ethnic and the ability to use the internet for how students' perceive their peers' deviant behavior when using the computer and Internet. Likewise, results indicate that relationships exist between gender, hours per day spent online, access to a computer with Internet, ethnic and working computer in the home when examining how students perceive their behavior when using the computer and the Internet.

In both analyses, gender was the best predictor for how students may perceive deviance scores, hours spent on the computer is the next best predictor for both scores.

The more time student spend online is likely to influence how deviance is perceived. Spending more time on computers and the Internet may lead students to perceive that their deviant behaviors are not deviant. Especially, if the students are committing deviance and nothing is happening. There may be no one to supervise students' online behavior. Consequently, they feel the behavior is not deviant.

Recommendations

The researcher recommends that further research be conducted to gain more knowledge about the types of behaviors students actually display with a computer and the Internet. The researcher further recommends that a similar study be conducted, but qualitative in nature of the perceptions of students in middle and high school students. This is suggested to provide individual experiences to better understand how students perceive themselves and their classmates to be displaying deviance on the Internet and computer.

Research Hypothesis One

Research hypothesis I of the study was stated as follows: There will be a significant difference in the Students' Behavior Score of Middle and High School students. High school students will have a higher deviance score. There was a significant difference between the Type of School and Student Behavior Score: chi-square = 24.507, 3 df, and p value < 0.0005.

These findings reveal a statistically significant difference between the type of school and Students' Behavior Score. Results indicate that there is a difference between middle and high school students' perception of how deviance is displayed when using the Internet and computers. Middle school students had a higher Students' Behavior Score

mean than high school students. The mean of middle school students' Students' Behavior Score is higher than high school students ($ms=14.9279$ and $hs=12.9204$). Therefore, the research hypothesis was rejected. The researcher believed that age and experience with computers and the Internet would dictate how high school students perceived deviance, but it appears that being younger does not affect perceptions of deviance.

Research Hypothesis Two

Research Hypothesis II of the study was stated as follows: There will be a significant difference in the Peers' Behavior Score of middle and high School students. High school students will have a higher deviance score. There was no statistically significant difference between the type of school and Peers' Behavior Score: chi-square = 10.057, 3 df, and $p \text{ value} < .018$.

Results indicate that being a middle or a high school student does influence how a student may perceive his/her classmates to be displaying deviance when using the Internet and computers. The mean of middle school students' Peers' Behavior Score is slightly lower than high school students ($ms=30.5780$ and $hs=30.6490$). Therefore, the hypothesis was not rejected.

Conclusion

The primary purpose of this study was to explore what middle and high school students perceive as deviant behavior when using the computer and the Internet. Based on the findings, it can be concluded that students do not perceive most of their behaviors on the Internet and computers as deviant. More specifically, the Peers' Behavior score mean is higher than the Students' Behavior Score. Therefore, students do not perceive their behaviors as deviant as their peers. This attitude can be correlated to a

theory known as the third person effect (Perloff, 1989). Cohen, J., Mutz, D., Price, V. and Gunther, A. (1988) observed the third person effect as how people represent themselves in relation to others. The students' image of themselves is more ethical than their friends. Consequently, their classmates are the ones that visit the pornography websites, access other people's websites without permission and perform other deviant acts when using the Internet and computers.

Additionally, this study will add to the small, but growing body of knowledge concerning students' perceptions of deviance when using the Internet and computers. We have gained an image of how students use the Internet and computers, how students spend some of their time online and how much time they spend using computers and the Internet. From this information, the following profile is generated of the possible characteristics of a student that may engage in computer or Internet deviance:

- Male, possibly Asian or Hispanic; 14-16.
- Poor to fair academic achievement;
- No religious affiliation
- Does not interact with classmates or teachers;
- Spends 5 to 9 hours a day on the Internet and/or computer;
- May or may not have a computer at home.

When analyzing the above profile, keep in mind what Bologna (1981) perceived. He indicated that younger computer abusers find it to be challenging to beat the system, establishment or institution. The motive is not always to harm others or for financial gain.

To summarize, the researcher recommends the following to avoid or decrease the chances of deviance when using computers and the Internet at school and home:

- Decrease the size of computer classes to 18-22. This number can be better managed by one teacher.
- Teachers and parents should encourage students to talk about what they are doing on the computer and the Internet. Find out whom they are talking too in chatrooms and instant messaging and the types of websites they are visiting;
- Supervise their online activity. Students should not be alone for lengthy periods of time. When supervision is not possible, use software or hardware that will help to monitor online activity.
- Schools that offer computer classes and access to the Internet should include information on appropriate computer and Internet behavior and ethic in their curriculum. Awareness is the first step to prevention and reducing the potential of abuse.

With the integration of computers and the Internet into the curriculum, there must also be responsibility. If deviance is to be avoided or decreased, all participants must take responsibility, which includes users and the suppliers. Educators and parents must be vigilant in their effort to discourage computer and Internet deviance.

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APPENDIX A: SURVEY

SURVEY ATTITUDES ABOUT THE INTERNET

Dear Student:

We would like to know your attitudes and perceptions about the proper or improper use of the Internet by students in your school. Your views about this subject are very important to us. There are no right or wrong answers. Please answer each of the following questions based on *your* knowledge, perceptions, or opinion. We want to emphasize that your identity is anonymous and the information you provide will be kept completely confidential. Your participation in this project is completely voluntary. Thank you very much.

Directions: Do not write your answers on the questionnaire. Please black-in with a pencil the number from the list of choices on the scantron answer sheet that reflects your honest answer or opinion to each of the following questions.

1. If your **classmates** access another person's computer program on the web without permission from the master of the web site, what do you think about the behavior of your classmates?
1) It's not deviant. 2) It's not seriously deviant.
3) It's seriously deviant. 4) It's very seriously deviant.
2. If your **classmates** enter pornography web sites, what do you think about the behavior of your classmates?
1) It's not deviant. 2) It's not seriously deviant.
3) It's seriously deviant. 4) It's very seriously deviant.
3. If your **classmates** modify another person's computer program on the web without permission from the master of the web site, what do you think about the behavior of your classmates?
1) It's not deviant. 2) It's not seriously deviant.
3) It's seriously deviant. 4) It's very seriously deviant.
4. If your **classmates** sell pornography goods on the web, what do you think about the behavior of your classmates?
1) It's not deviant. 2) It's not seriously deviant.
3) It's seriously deviant. 4) It's very seriously deviant.
5. If your **classmates** access another person's credit card number on the web, and use that number to buy goods for themselves, what do you think about the behavior of your classmates?
1) It's not deviant. 2) It's not seriously deviant.
3) It's seriously deviant. 4) It's very seriously deviant.

6. If your **classmates** tell a lie on another person's web site and make a profit from it, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
7. If your **classmates** intentionally spread a computer virus on the Internet, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
8. If your **classmates** spread bad rumors about another person on the Internet, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
9. If your **classmates** enter into a web site using another person's name, and intentionally get the person into trouble, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
10. If your **classmates** intimidate and frighten another person on the Internet, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
11. What is your gender?
1 Male. 2 Female.
12. What is your age?
1 Thirteen and below. 2 Fourteen. 3 Fifteen.
4 Sixteen. 5 Seventeen and above.
13. What is your religious affiliation?
1 No religious affiliation. 2 Strong religious affiliation.
3 Very strong religious affiliation.
14. How much is your monthly allowance(money) given to you by your parents?
1 Very few or none. 2 Not much. 3 Much. 4 Very much.
15. Do your parents encourage you to use the Internet?
1 Never. 2 Not much. 3 Much. 4 Very much.

16. Which parent(s) are you living with?
1 Neither parent. 2 Only father.
3 Only mother. 4 Both parents.
17. What is your grade level in school?
1 (7th Grade). 2 (8th Grade). 3 (9th Grade).
4 (10th Grade). 5 (11 or 12th Grade).
18. How would you rate your academic achievement?
1 Poor. 2 Fair. 3 Good. 4 Excellent.
19. How often do you interact with your classmates?
1 Little or none. 2 Some but not often.
3 Often. 4 Very often.
20. How often do you interact with your teachers?
1 Little or none. 2 Some but not often.
3 Often. 4 Very often.
21. How would you rate your ability to use the computer's Internet?
1 Never use it. 2 Poor. 3 Good. 4 Excellent.
22. How easy is it for you to find a computer to use the Internet?
1 Not very easy. 2 Not easy. 3 Easy. 4 Very easy.
23. How much time do you spend online?
1 None. 2 Very little. 3 Much. 4 Very much.
24. How many hours per day do you spend on the Internet?
1 (2 or less) 2 (3-4) 3 (5-6) 4(7-8) 5 (9or more)
25. Most of my time on the Internet is spent on collecting information?
1 Strongly disagree. 2 Disagree. 3 Agree. 4 Strongly agree.
26. Most of my time on the Internet is spent on "chat room" web sites?
1 Strongly disagree. 2 Disagree. 3 Agree. 4 Strongly agree.
27. Most of my time on the Internet is spent on playing video game?
1 Strongly disagree. 2 Disagree. 3 Agree. 4 Strongly agree.
28. Most of my time on the Internet is spent on talking to somebody?
1 Strongly disagree. 2 Disagree. 3 Agree. 4 Strongly agree.
29. Most of my time on the Internet is spent on killing time?
1 Strongly disagree. 2 Disagree. 3 Agree. 4 Strongly agree.

30. How often do you share your Internet experience with others?
1 Never use Internet. 2 Never shared. 3 Not often. 4 Often.
31. If your **classmates** go into another person's room and access their belongings without permission, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
32. If your **classmates** watch adult TV channels, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
33. If your **classmates** enter another person's room and modify their belongings without permission, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
34. If your **classmates** sell pornography goods, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
35. If your **classmates** pick up another person's credit cards on the road, and use those cards to buy goods for themselves, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
36. If your **classmates** lie on another person and make a profit from it, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
37. If your **classmates** intentionally spread a flu virus to another person, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
38. If your **classmates** spread a hurtful rumor to another person in the classroom, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.

39. If your **classmates** are writing letters using another person's name, and intentionally get that person into trouble, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
40. If your **classmates** intimidate and frighten another person in your class, what do you think about the behavior of your classmates?
1 It's not deviant. 2 It's not seriously deviant.
3 It's seriously deviant. 4 It's very seriously deviant.
41. How many of your **classmates** do you think believe this saying: "If I like it, nothing can stop me from doing it."
1 Very few. 2 Few. 3 Many. 4 So many.
42. How many of your **classmates** do you think are the kind of person who enjoys doing something and does it without any second thought?
1 Very few. 2 Few. 3 Many. 4 So many.
43. How often do **you** "say" something you would like to say and say it without any second thought?
1 Little. 2 Some but not often. 3 Often. 4 Very often.
44. How often do **you** "do" something you enjoy and do it without any second thought?
1 None. 2 Some but not often. 3 Often. 4 Very often.
45. How often do **you** take any means to get something that you really like?
1 None. 2 Some but not often. 3 Often. 4 Very often.
46. How often do **you** consider your friends' opinion when you are considering something that you really want to do?
1 None. 2 Some but not often. 3 Often. 4 Very often.
47. How often do **you** consider your brothers' or sisters' opinion when you are considering something that you really want to do?
1 None. 2 Some but not often. 3 Often. 4 Very often.
48. How often do **you** consider your parents' or elder relatives' opinion when you are considering something that you really want to do?
1 None. 2 Some but not often. 3 Often. 4 Very often.
49. How often do **you** consider your teachers' opinion when you are considering something that you really want to do?
1 None. 2 Some but not often. 3 Often. 4 Very often.

50. Do **you** agree or disagree with this saying: "If I like it, nothing can stop me from doing it."
1 Strongly disagree. 2 Disagree. 3 Agree. 4 Strongly agree.
51. Have **you** ever accessed another person's computer program on the Internet without permission from the master of the program?
1 None. 2 Some but not often. 3 Often. 4 Very often.
52. Have **you** ever entered pornography web sites?
1 None. 2 Some but not often. 3 Often. 4 Very often.
53. Have **you** ever modified another person's computer program on the web sites without permission from the master of the program?
1 None. 2 Some but not often. 3 Often. 4 Very often.
54. Have **you** ever sold pornography goods on the web sites?
1 None. 2 Some but not often. 3 Often. 4 Very often.
55. Have **you** ever used another person's credit card number to buy goods on the Internet?
1 None. 2 Some but not often. 3 Often. 4 Very often.
56. Have **you** ever lied on other persons on the Internet and made a profit from it?
1 None. 2 Some but not often. 3 Often. 4 Very often.
57. Have **you** ever intentionally spread a computer virus on Internet?
1 None. 2 Some but not often. 3 Often. 4 Very often.
58. Have **you** ever spread hurtful rumors to another person on the Internet?
1 None. 2 Some but not often. 3 Often. 4 Very often.
59. Have **you** ever used another person's name on the Internet to intentionally get that person into trouble?
1 None. 2 Some but not often. 3 Often. 4 Very often.
60. Have **you** ever intimidated or frightened other persons on the Internet?
1 None. 2 Some but not often. 3 Often. 4 Very often.
61. What is your race or ethnicity?
1 African American/Black 2 (Spanish or Hispanic)
3 (White) 4 (Asian) 5 (Other)
62. Is there a working computer in the home where you live?
1 Yes 2 No

63. If there is a working computer in the home where you live, is it connected to the Internet?
1 Yes 2 No 3 Does not have a computer in home

64. What type school do you attend?
1 Middle 2 High school

Write the complete name of your school. _____

65. Which one of the following items do you think is the major reason that a person commits Internet crime or deviance?
1 Belief that their behavior does not cause great harm to others.
2 Lack of responsibility for the consequences of their actions.
3 Lack of self-control for obeying rules and laws.
4 Other (Please write your answer below).
-

66. Which one of the following items do you think is the best way to prevent persons from committing Internet crime or deviance?
(Note: If your answer is 6 or 7, write it on this sheet.)
- 1 Self control.
2 Friends or classmates should encourage Internet users not to commit Internet crime or deviance.
3 Parents or teachers should ask Internet users not to commit Internet crime or deviance.
4 School administrators should ask the Internet users not to commit Internet crime or deviance.
5 Law enforcement officers should ask the Internet users not to commit Internet crime or deviance.
6 Use of computer technology to discourage Internet crime or deviance.
7 Other (Please write your answer below.).
-
-

Thank you very much. Have a nice day!

APPENDIX B: LETTER TO THE SCHOOL BOARD OFFICE



LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE
Department of Sociology

November 30, 1999

Dr. Jennifer Baird
Director of Academic Accountability
East Baton Rouge School System
Post Office Box 2650
Baton Rouge, Louisiana 70821

Dear Dr. Baird:

Thank you for providing me with the procedures required to obtain an approval letter to conduct a research survey in the junior and senior high schools in the East Baton Rouge Parish School System. The following are answers to questions necessary to acquire an approval letter from your office.

(a) What is the purpose of this research survey?

The purpose of this survey is to conduct an assessment of students' attitudes toward the proper/improper use of computers and the internet, in junior high schools and high schools of the city of Baton Rouge. The specific objective is to determine students' perceptions of appropriate or inappropriate use of the internet.

(b) Why are you conducting this research survey?

This survey is part of a research project aimed at enhancing our knowledge of students, perceptions of rules and norms regarding the use of the internet. The results of the study will help us determine the extent of problems pertaining to the use of the internet and the students' perceptions of these problems.

(c) What organization or institution will conduct this survey?

Louisiana State University, Department of Sociology, will conduct this research survey. The survey will be supervised by Professor Thomas J. Durant, Jr., with the assistance of graduate and undergraduate students. Student assistants will be properly trained and will have appropriate identification.

(d) What population is needed to conduct this research survey?

The study requires a random sample of the 1999 Fall semester classes from six junior high schools and six senior high schools within the city of Baton Rouge.

(e) How many students and schools are needed to complete this survey?

The study requires a random sample of 18 junior high school classes and 18 senior high school classes (N=36 classes). The estimated number of students needed for the survey is 1,080 (junior high = 540; senior high = 540).

(f) Will students need parental permission to engage in this survey?

No. This will be a data based only survey, where all students participating will be anonymous.

(g) How will the results of this research survey be used?

This research survey will be used for publication in educational and research journals. The results will also be disseminated to the school system and the general public to enhance their knowledge about students' attitudes toward use of the internet.

(h) How long will it take for this survey to be completed?

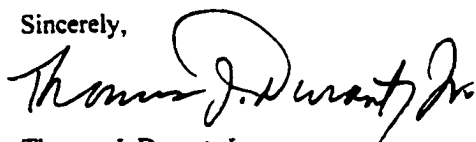
Once approval has been obtained from the schools and administrators, the survey will take from 5 to 6 weeks to complete. The survey questionnaire will take approximately 30 minutes for each student participant to complete.

(i). Will a copy of the results of this survey be submitted to the East Baton Rouge Parish School System?

Yes, the East Baton Rouge School System will be presented a copy of the results of the results of the survey.

I will be happy to provide any additional information required for approval of this request. Your cooperation is appreciated. I look forward to your prompt reply.

Sincerely,

A handwritten signature in black ink, reading "Thomas J. Durant, Jr." in a cursive style.

Thomas J. Durant, Jr.
Professor of Sociology

APPENDIX C: LETTER FROM THE SCHOOL BOARD OFFICE

Department of Academic Accountability
East Baton Rouge School System
P.O. Box 2950
Baton Rouge, LA 70821
225-922-5612

December 15, 1999

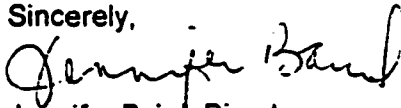
Thomas J. Durant, Jr.
Professor of Sociology
Louisiana State University
Baton Rouge, LA 70803

Dear Mr. Durant:

Your request to conduct research in middle and high schools related to students' use of and attitude toward the Internet is approved. Please contact principals to determine if they are interested in participating. We understand that the survey requires very little interruption of the school day, but we ask that you be especially cognizant of our spring testing schedule (see attached).

Thank you for providing me with the information related to assurance of confidentiality and willingness to share your findings with the system. We look forward to your report and appreciate your interest in East Baton Rouge Parish students. If I can help you, please call me at 922-5612.

Sincerely,



Jennifer Baird, Director
Department of Academic Accountability

Cc: Don Mercer
Ruthie Smith-Stevenson
David Corona

APPENDIX D: LETTER TO SCHOOL PRINCIPALS AND TEACHERS



March 28, 2000

Principals and Teachers
East Baton Rouge School Systems
Baton Rouge, Louisiana

Dear Principal:

Your school has been selected as one of a sample of middle and high schools for conducting research on student's use and attitudes toward the internet. This research is aimed at enhancing our knowledge and understanding of students' perceptions and attitudes of whether or not certain practices and uses of computers and the internet are proper or improper. The purpose of this letter is to gain your approval and assistance in conducting this study in your school. This request has been submitted to and approved by the Department of Academic Accountability of the East Baton Rouge School System (see attached letter).

A questionnaire has been designed to collect the data needed for the study (see attached questionnaire). The survey requires very little interruption of the school day and will take about twenty (20) minutes for students to complete in a classroom setting. Participation in the survey is voluntary and the information obtained will be used confidentially. Also, the identity of the participants will be anonymous. The study design requires about 100 students from different classes from your school. The exact number of students will be based on the number and sizes of classes selected. Mrs. Annie Daniel, a doctoral student in Vocational Education at Louisiana State University, will be assisting me in the collection of the data and will inform you of the details of the survey. The results of the study will be shared with the East Baton Rouge School System.

Your cooperation and assistance in facilitating the completion of this study is highly appreciated.

Sincerely,

Thomas J. Durant, Jr.
Professor
Principal Investigator

APPENDIX E: LETTER OF PERMISSION FROM DR. SAN-YI LI

ajdaniel@bellsouth.net ajdaniel@bellsouth.net

March 30,2001

Dear Annie Daniel,

Here I agree that you can use my internet survey data for your dissertation.
The reference for my internet survey is:

Li, San-Yi. 1999. "The Relation of Self-Centeredness to the Perceptions of the Seriousness of the Internet Crime Among Middle and High School Students," 1999 International Conference on the Juvenile Problem and Its Preventions. Taipei, Taiwan: Department of Sociology, Fu Jen Catholic University.

Sincerely,

San-Yi Li, Ph.D.
2F 6 Ln. 81, Yuan-Dong St.
Long-Chin 434, Taichung Taiwan, R.O.C.

Tel:
011-886-937-037-269;
011-886-4-2633-2745
E-mail: sosan@ms9.hinet.net

VITA

Annie Jean Harris Daniel was raised in New Orleans, Louisiana, where she attended Walter L. Cohen High School. In the summer of 1976, she married Charles Andrew Daniel and moved to Lake Charles, Louisiana. Her college studies started in 1978 at McNeese State University. Unfortunately, her college studies were interrupted by the relocation of her husband's job. Persistent, Annie tried to continue her education at Texas A and M and raise a young child at that same time. However, another relocation and pregnancy of a second child put her education on hold for ten years.

During these ten years, Annie worked as a real estate agent for 5 years, a sales associate at a department store for six years and various merchandising jobs. After raising her children, she decided to fulfill a lifelong goal to complete college.

In the fall of 1989, Annie entered Louisiana State University in Baton Rouge, Louisiana as a sophomore. By the fall of 1994, Annie had completed requirements for the Bachelor of Science degree in Vocational Home Economics Education. In January, 1995, Annie started her teaching career. First, teaching in West Baton Rouge Parish and then changing to East Baton Rouge Parish School System in August, 1995.

Feeling rather comfortable in the higher education world, Annie decided to continue on in college to complete a masters degree (May of 1997) and, a masters degree plus 30 hours (December of 1999). Being so close to the terminal degree, Annie made the decision to pursue a Doctor of Philosophy. The author will earn her Ph.D. in May of 2001.

Having so little spare time (working full-time as a teacher and going to school in the evenings and summers), the author has grown to love and appreciate quiet times at home with her family. She enjoys walking on the beach, watching documentaries, traveling, reading, and cooking. She collects cook books and cobalt blue things.

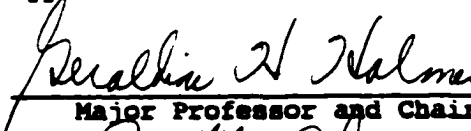
DOCTORAL EXAMINATION AND DISSERTATION REPORT

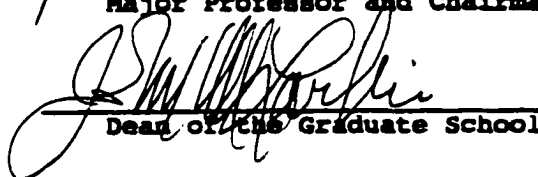
Candidate: Annie Jean Harris Daniel

Major Field: Vocational Education


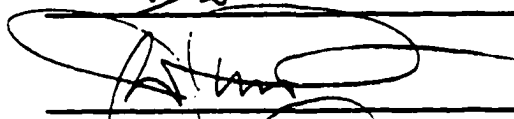
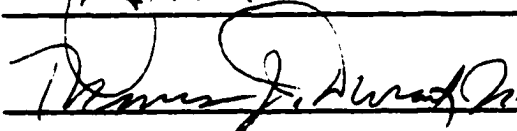
Title of Dissertation: An Exploration of Middle and High School Students' Perceptions of Deviant Behavior When Using Computers and the Internet

Approved:


Major Professor and Chairman


Dean of the Graduate School

EXAMINING COMMITTEE:




Satish Verma

Date of Examination:

April 10, 2001