Understanding How Schools Respond to Cyberbullying

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THESIS

Submitted as partial fulfillment of the requirements for the degree
of Doctor of Philosophy in Special Education in the Graduate
College of the University of Illinois at Chicago, 2012

Chicago, Illinois

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Acknowledgements

There are many people without whom it would not have been possible to complete this journey. First, I would like to thank my advisor, Dr. Rick Van Acker. Rick has always been supportive and encouraging. I will always appreciate the many opportunities he has provided me during my time at the University of Illinois at Chicago (UIC). Next, I would like to thank my committee members for their guidance and patience. Dr. Betsy Talbott, Dr. Michelle Parker-Katz, Dr. David Mayrowetz, and Dr. David Henry have provided encouragement, direction, and critical feedback through the dissertation process and throughout my time at UIC. These committee members have helped me formulate my questions, refine my research methods, interpret my results, and write about the entire process all the while providing support and encouragement.

There have been many teachers along the way, who have mentored and encouraged me, none more so than Robert Pickard, to whom I will be forever indebted. I must also thank Josephina Gradilla for her tireless work on this research project. I would also like to thank my mother and father, Karoline and John, as well as my brothers and their families, for their constant support and belief in me. Finally, I would like to thank my family including Ally and my wife Sandra, who proof read my essay for entrance into the doctoral program and has been right next to me every step of the way throughout this entire process. This would not have been possible without their support.

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Summary

The primary goal of this research effort is to better understand how school officials are confronting the problem of cyberbullying. A representative sample of approximately 2,000 public school principals in the Midwestern United States were surveyed about school policies and practices to prevent cyberbullying. They were also asked to interpret whether incidents involving problematic Internet and cell phone experiences of students were examples of cyberbullying. Finally, they were asked to provide a typical disciplinary response to various incidents of cyberbullying.

There were several interesting findings, including the fact that more than 60% of school officials do not use a specific curriculum or program to address bullying in their schools. Furthermore, approximately 25% of respondents indicated that there had not been a single instance of bullying in their school in the past month and approximately 50% said that there had not been a single instance of cyberbullying in their school in the past month. Previous research has indicated that school staff tends to underestimate student victimization, which may be the case here. It was also found that, while there is no lack of technology available for student use, 44% of school officials reported that they did not have a full-time staff member dedicated to technology use and instruction.

Data were analyzed to uncover differences in interpretations of incidents involving aggression and the use of technology based on respondent school level and gender. School officials from elementary schools were more likely to endorse any act of cyber-aggression as an act of cyberbullying. Ratings of incidents indicate that a continuum of examples and non-examples of cyberbullying can be established, although there do appear to be contradictions in

Summary (continued)

how school officials define cyberbullying. Differences were found in interpretation of incidents based on respondent school level and respondent gender.

Data also were analyzed to uncover differences in the selection of a disciplinary response to acts of cyberbullying based on respondent school level and gender. Elementary and middle school officials selected suspension as a disciplinary response more often than expected. Male respondents more often chose disciplinary responses that were less punitive compared to female respondents. These differences need to be examined further, to understand the role of school context and respondent gender on interpretation of and response to aggression.

I. Introduction

Cyberbullying has garnered intense interest across the nation from school officials, parents, and state and local education agencies because of a confluence of recent and long-developing circumstances. The integration of various medias and technologies into schools is unprecedented (Gray, Thomas, & Lewis, 2010). Among these technologies is the availability of computers with Internet access for student use, which allows for various forms of communication within and beyond school environments. These technological platforms are problematic for school officials, in part because it is challenging to supervise student interactions, which occur in cyberspace (Beale & Hall, 2007; Mason, 2008).

Several students, who committed suicide after being victimized by cyberbullies, have posthumously received international media attention (e.g., Tyler Clementi and Phoebe Prince). In the wake of these and other student suicides there has been increased scrutiny as to how school officials have responded to reports of various forms of student victimization (Zubrzycki, 2011). Because of the increased scrutiny and pressure by parents and anti-bullying advocacy groups (Srabstein, Berkman, and Pyntikova, 2008), forty-eight state legislatures have enacted anti-bullying laws, many of which contain a clause about cyberbullying (Stuart-Cassel, Bell, & Springer, 2011), and many of which mandate that schools take direct action to address bullying.

The problem school officials are confronting is the requirement to provide a safe educational environment and the difficulty of supervising and disciplining students for certain forms of online speech, which may be initiated off-campus but accessed on-campus. The legal questions about when and where a school's responsibility begins are unsettled (Hinduja and Patchin, 2011; King, 2010). Courts of law have been wrestling with the right of an individual student to attend school in a safe environment and the rights of all students to free speech and

privacy (Hinduja and Patchin, 2011; King, 2010), with different courts issuing conflicting rulings, sometimes affirming attempts by school officials to discipline students for online speech and sometimes affirming a student's First Amendment right to free speech, even though that speech may be offensive (Quinn, 2003). The result is that school officials must struggle to balance the benefits that new technologies bring with the obligation to provide a safe and effective learning environment (Willard, 2007).

Each school is part of a local community, which is subject to varying degrees of parent involvement and local education agency administration. The building principal is the person primarily responsible for making decisions and exercising leadership within a school (Gurr, Drysdale, and Mulford, 2006). Three selected critical components of successful principal leadership include (1) a deep understanding of the specific school context, (2) an awareness of all aspects of the school's organization with an ability to shape the structure/culture, pedagogical climate, personnel, and facilities, and (3) principal values and beliefs, which are primarily student-centered (Day, 2005; Gurr, et al., 2006; Krüger, 2009). A principal must balance the requirements imposed by a local education agency and at the same time meet the needs of the school organization and students. Day (2005) describes the tension principals must feel in meeting national, state, and local government policy mandates, understanding school and community contextual variables, and "their moral and ethical commitments to ensuring pupils' holistic development" (p. 288). In short, there are many competing contingencies, which a principal must balance in their leadership of a school. It is unclear how these sometimes-conflicting priorities, including government policies, local education agency regulations, community priorities, and school organization and student needs might affect how a principal carries out the responsibilities of their job, given their personal values and beliefs. Of particular

concern, given the national attention incidents of cyberbullying have received and recent changes and amendments to state anti-bullying policies, is how school officials exercise leadership with respect to bullying prevention and intervention within their specific school context.

There are a number of free and commercially produced intervention packages available to schools which address both bullying and cyberbullying. These types of interventions may be required by recent legislation in places such as New Jersey and elsewhere, which mandate that schools must implement programs to address bullying (Zubrzycki, 2011). Unfortunately, there is a dearth of empirical support for these programs (Ryan & Smith, 2009; Vreeman & Carroll, 2007). It would be interesting to know how prevalent these types of manualized programs are in schools and if they are being used across grade levels.

Although cyberbullying is a relatively new phenomenon, aggression perpetrated by schoolyard bullies is not (Olweus, 1978). Bullies may victimize others directly either physically or verbally or indirectly, through what has been termed relational aggression. Negative outcomes, including devastating physical, social, and psychological effects, have been found for those involved with bullying behaviors, either as a bully, a victim, or as both a bully and a victim (Crick & Grotpeter, 1995; Estévez, Murgui, & Musitu, 2009; Glew, Fan, Katon, Rivara, & Kernic, 2005; Kim, Koh, & Leventhal, 2005; Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Klomek, Sourander, & Gould, 2010; Nansel et al., 2001; O'Brennan et al., 2009).

Cyberbullying is a subset of aggressive behaviors mediated by electronic communication technologies, which has been likened to traditional direct and indirect forms of bullying with regard to purpose, developmental differences, and psychopathological causes and effects (Beran & Li, 2005; Dempsey, Sulkowski, Nichols, & Storch, 2009; Erdur-Baker, 2010; Mason, 2008;

Raskauskas & Stoltz, 2007; Slonje & Smith, 2008; Wang, Iannotti, & Nansel, 2009; Walker, 2010; Wolak, Mitchell, & Finkelhor, 2007; Ybarra, Diener-West, & Leaf, 2007).

Not only have schools embraced new technologies, students are using Internet and cell phone technology as the primary tools for social interaction (Lenhart, Purcell, Smith, & Zickhur, 2010; Rideout, Foehr, & Roberts, 2010). Walker (2010) defined cyberbullying as "relational aggression and indirect aggression moved to an online, social media platform" (p.598), although cyberbullying can also involve threats and other forms of direct aggression as well (Vandebosch and Van Cleemput, 2008). Along with the fact that cyber environments are difficult for school officials to supervise, student intentions can be unclear in online communications. The difference between playful teasing and aggressive, hurtful taunts or slights may be subtle. School officials are asked to interpret the meaning and intent of these communications in determining if bullying has occurred.

Cyberbullying is a recent phenomenon, which has given rise to a myriad of research efforts (Tokanaga, 2010). The problem of defining exactly what constitutes cyberbullying has been and continues to be addressed (Agatston, Kowalksi, & Limber, 2007; Mishna, Saini, & Solomon, 2009; Patchin & Hinduja, 2006; Vandebosch & Van Cleemput, 2008). The prevalence of cyberbullying, the characteristics of aggressors and victims (including those who fit into both categories), and the effects of participating in cyberbullying have also been studied (Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Kowalski & Limber, 2007; Mishna, Cook, Gadalla, Daciuk, & Solomon, 2010; Smith, et al., 2008; Sourander, et al, 2010; Twyman, Saylor, Taylor, & Comeaux, 2010; Vandebosch & Van Cleemput, 2009; Ybarra, Mitchell, Wolak, & Finkelhor, 2006). Given the recent emergence of cyberbullying, research efforts have attempted to establish it as distinctive and unique, while at the same time as subsumed along with other forms of

aggression under the umbrella term of 'bullying'. Some research efforts have attempted to establish cyberbullying as another example of bullying behaviors (Slonje & Smith, 2008), while others have maintained that cyber-harassment or online aggression is a distinct form of aggression (Wolak et al., 2007; Ybarra & Mitchell, 2004). This, understandably, can lead to confusion.

Research on traditional bullying has also generated controversy, especially with respect to differences and similarities of aggressive behavioral patterns of boys and girls (Cairns & Cairns, 1984). Björkvist (1994) noted that, traditionally, most studies of aggression have been concerned with males and physical aggression, in part because physical aggression is clearly distinguishable. A seminal text on bullying, *Aggression in the Schools: Bullies and Whipping Boys* (Olweus, 1978), focused on groups or mobs of adolescent boys "or possibly girls" (p. 34) who target an individual. In defining this specific form of group-mediated aggression, which included fighting and teasing, or what was termed "active aggression", more subtle forms of aggression such as indifference or passive displays of dislike were rejected. Cairns, Cairns, Neckerman, Ferguson, and Gariépy (1989) described developmental changes between boys' and girls' aggressive behavioral patterns as they entered adolescence, where boys settled conflicts through direct confrontation and where girls, in addition to using direct confrontation to settle conflicts, also employed social manipulation or other forms of indirect relational aggression including rumor spreading and social exclusion. Lagerspetz, Björkvist, and Peltonen (1988) confirmed that while boys tended to use direct aggressive behaviors, indirect relational aggression was "typical among girls" (p. 412). These more subtle forms of aggression are difficult for school officials to address, in part because even a victim may be unaware of the identity of their aggressor.

Because of the attention given to more indirect forms of aggression (Björkvist and Niemelä, 1992; Cairns & Cairns, 1984; Crick, Casas, and Mosher, 1997; Underwood, 2003) definitions of bullying now include descriptions of social or relational forms of aggression (Farrington, 1993; Guerin and Hennessy, 2002; Monks and Smith, 2006; Olweus, 1997). Whether or not school officials recognize the more subtle forms of aggression described by Galen and Underwood (1997), such as sneers, eye rolls, glances, and making faces, especially in terms of addressing bullying is unclear. Furthermore, it is unclear if male and female school officials differ in their knowledge of these more subtle forms of relational aggression. Direct experience during formative school years with relational aggression may lead female school officials to be more sensitive or aware of ongoing, but subtle, aggressive social and behavioral problems more typical among girls. It is also unclear if male school officials are either less aware of more subtle forms of relational aggression, if they recognize behaviors such as ostracism or gossiping as bullying, or if they believe that direct physical aggression is a more serious problem. Differences in personal experiences with direct and/or indirect forms of aggression may influence what a school official recognizes as bullying and how a school official responds to various types of aggression. It is important to know if gender differences noted by Björkvist (1994), which were influencing how researchers defined and studied aggression, are also present among school officials.

Along with studies which have focused on gender and aggression, numerous studies have examined grade and age differences in the prevalence of bullying (Nansel, et al., 2001; O'Brennan, Bradshaw, and Sawyer, 2009; Rivers and Smith, 1994; Smith, Madsen, and Moody, 1999; Solberg, Olweus, and Endresen, 2007), age differences in how students define bullying (Guerin and Hennessy, 2002; Monks and Smith, 2006), grade level differences in staff and

student perceptions of bullying (Bradshaw, Sawyer, O'Brennan, 2007), and developmental

changes of bullying and aggression over time (Björkvist, Lagerspetz, and Kaukiainen, 1992;

Cairns, et al., 1989; Pelligrini and Long, 2002). In general, these studies describe differences in

bullying and aggression based on student age, grade level, and the school context, especially in

terms of school levels.

Smith et al. (1999) hypothesized that the occurrence of bullying may be due, in part, to a

lack of segregated school settings, where older children and younger children mix in

unsupervised environments, such as playgrounds. Younger, weaker, less socially skilled students

may become targets of opportunity for predatory, older students. As students grow older and

develop physically and socially they are less likely to report victimization (Nansel et al., 2001;

Rivers and Smith, 1994; Smith et al., 1999; Solberg et al., 2007). Pelligrini and Long (2002)

hypothesized that school level was critical to understanding the function and prevalence of

bullying behaviors. Here too, a decline in reported bullying was anticipated, as student age

increased, except that an increase in bullying and victimization was observed as students

transitioned from primary school to secondary school. This increase in bullying behaviors, as

students changed schools, was thought to occur because in primary school, before the transition,

these students were relatively older, stronger, and more socially adapt. When students

transitioned to a new school, where they were now the youngest students and where new peer

groups were being formed, an increase in bullying and victimization occurred.

School configurations, in terms of grade levels, are not universally standardized. Some

schools may contain only one or two grade levels, while other schools may serve students from

pre-kindergarten through grade twelve. The Common Core of Data (CCD) has identified the

three school levels as primary, middle, and secondary, along with a catchall category called

'other' for schools that do not fit into any of those three categories (Sable and Plotts, 2010). The middle schools, defined by the CCD as schools with a grade level range of fourth through ninth, have been identified in numerous research studies as the most problematic, in terms of bullying and victimization (Bradshaw et al., 2007; Nansel et al., 2001; Pelligrini and Long, 2002; Smith et al., 1999; Solberg et al., 2007).

It is important to note that both student age and the school configuration in terms of grade levels are thought to play roles in prevalence rates of bullying and victimization. As students grow older they may be less likely to report victimization, but changes in school contexts may be related to increases in bullying and victimization as students navigate new social relationships and encounter new peers. What is not clear is what effect the school context (age and grade levels of students present) has on how a school official interprets acts of aggression. Also unclear is whether there are differences in how a school official responds to specific types of aggression based on student age and grade level. If school context and grade level contributes to the interpretation of and response to incidents of aggression, one would expect to see differences from school officials based on the school level.

As schools continue to increase the use of technology in educational programs (Gray et al., 2010; Oppenheimer, 2003) students must be protected in cyber-environments. Failure to do so would mean students would be expected to participate in activities and environments where they do not feel safe and where they may experience ostracism, harassment, or humiliation, the effects of which may include depression, fear, anxiety, and associated forms of distress (Dempsey et al., 2009; Hinduja and Patchin, 2008; Sourander et al., 2010; Ybarra, 2004; Ybarra et al., 2006). Schools are charged with providing a safe and effective learning environment for all students (Gottfredson, & Gottfredson, 2001). It is important to understand how school personnel

interpret this role, given the new challenges posed by the integration of cyber and school environments.

This thesis represents an effort to understand how school officials are addressing the relatively new phenomenon of cyberbullying, how they interpret aggression mediated by Internet and cell phone technology, and how they might respond disciplinarily to specific acts of aggression. Of particular interest are any differences between groups of respondents that become apparent with respect to prevention efforts, interpretation of incidents, and disciplinary response choices. Research on bullying and aggression has often overlooked more indirect forms of aggression. Student development and grade level have been correlated with changes in aggression and bullying behaviors. Given the emergence of this novel form of aggression, the increase in the use of technology in schools, the constitutional limits to the authority of schools, and the lack of empirical support for anti-bullying programs, especially programs designed specifically for cyberbullying, it is crucial to better understand how school officials are confronting the issue of cyberbullying. In the following chapter specific terms related to cyberbullying are defined, the theoretical framework is discussed, and the research questions to be addressed in this thesis are presented.

Definition of Terms

Bullying – A term which may include different forms of aggression, where an individual "is exposed, repeatedly and over time, to negative actions on the part of one or more other students" and where the term 'negative actions' means, "when someone intentionally inflicts, or attempts to inflict injury or discomfort upon another (p. 9, Olweus, 1993).

Cyberbullying – Harassment, similar in nature to traditional bullying, which is delivered through the use of Internet and cell phone technologies (Mishna et al, 2009; Patchin & Hinduja, 2006; Vandebosch & Van Cleemput, 2008).

Cyberbully – One who perpetrates threats, harassment, insults, malicious postings, name-calling, gossip, spreading of rumors, unwanted forwarding of personal information, unwanted forwarding of personal photos, impersonation, masquerading, or ostracism against another with the intent of causing harm or discomfort using Internet or cell phone technology (Mishna et al., 2009; Vandebosch & Van Cleemput, 2008).

Cyber-victim – The target of a cyberbully.

Cyberbully-victim – One who is both the target of a cyberbully and who also targets others using Internet or cell phone technology.

Theoretical Framework

Any number of factors can influence how a school official responds to the problem of bullying. Michael Lipsky (1980) uses the term 'street-level bureaucrats' to describe public employees, such as teachers, police officers, and social workers, who interact with the public and can affect how services, such as education, law enforcement, or counseling, are administered. There are any number of factors, which could influence how school principals, disciplinarians, and teachers administer their responsibilities including, but not limited to, state and district policies, personal beliefs and experiences, and school contextual variables. Even though a school official is guided by standardized district or state level policies and practices, "street-level bureaucrats have considerable discretion in determining the nature, amount and quality of

benefits and sanctions provided by their agencies" (Lipsky, 1980, p. 13). Furthermore, street-level bureaucrats view themselves as 'professionals' and as such enjoy a degree of autonomy in making decisions based on the perception of their expertise. "The combination of discretion, rule application, and the principally undetermined character of what the professional will be confronted with, presupposes a degree of trust in his or her competence to produce desired responses" (Hupe & Hill, 2007, p. 282).

Given the discretion and autonomy afforded school professionals in conducting the business of a school, it is expected that there would be differences in how bullying and cyberbullying are addressed from one school to the next. A number of factors may influence how a principal or other school official reacts to the problem of bullying (see figure 1. Conceptual Model). The conceptual model is based on Bronfenbrenner's ecological systems theory, in which the ecological environment is conceived as a set of systems nested within other systems (Bronfenbrenner, 1999).

The outer ring of the ecological model represents the macrosystem, which "may be thought of as a societal blueprint for a particular culture or subculture" (Bronfenbrenner, 1994, p. 40). The macrosystem of the present model includes national initiatives, such as the annual U.S. Department of Education Bullying Prevention Summit (Bryn, 2011), and the various state education laws and policies. The second ring represents the exosystem, which includes neighborhood and community contexts, and in the present model includes the local school system. The third ring of the conceptual model represents an element of the mesosystem, which in the case of the present model is a specific school context. Within this particular mesosystem are the microsystems of the principal, a street level bureaucrat, the students, and the school organization, which includes the structure/culture of the school, the instructional

organization/pedagogical climate, the personnel, and the facilities (Krüger, 2009). These

microsystems interact in a reciprocal manner, where the principal influences students and the

school organization and is in turn influenced by these same constituencies. These reciprocal

interactions ultimately influence how a principal exercises leadership within the school context.

Figure 1. Conceptual Model
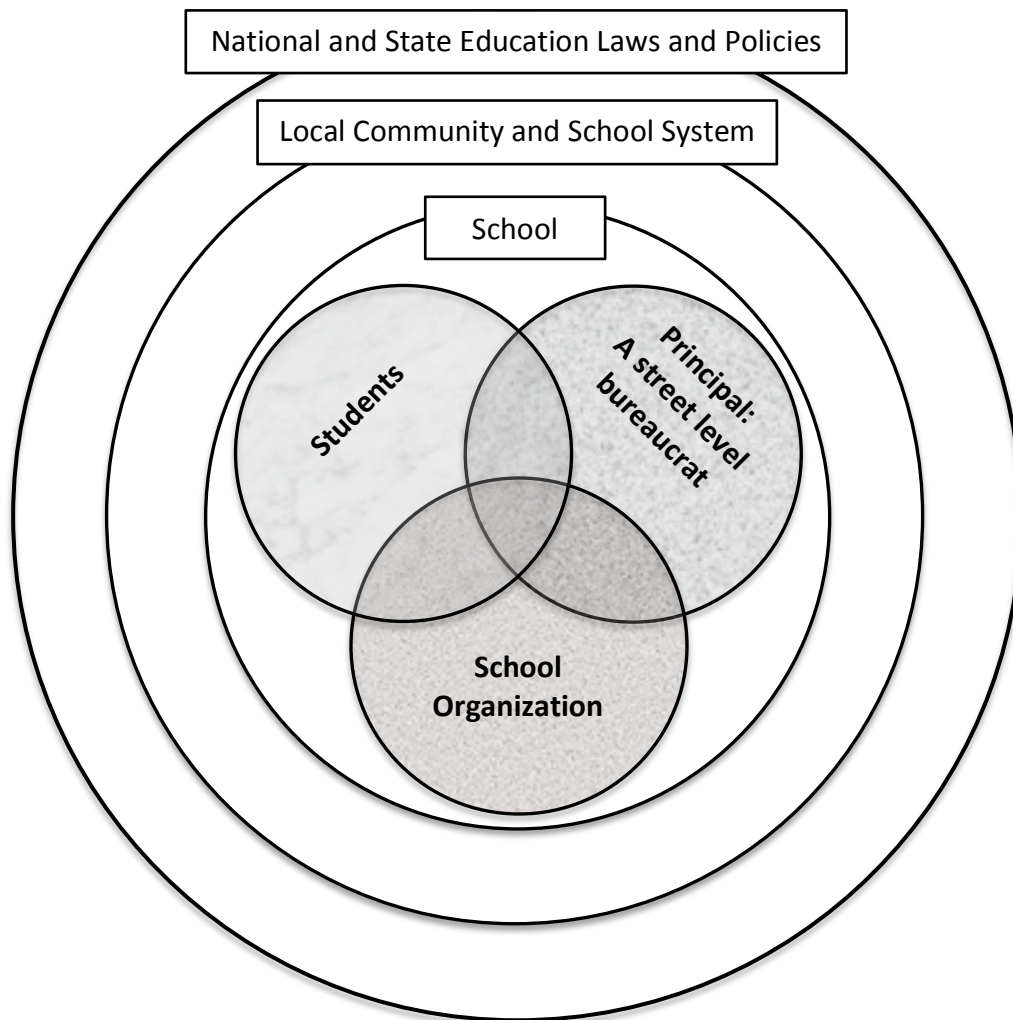
In response to public concerns about bullying 48 states have enacted laws (Montana and South Dakota have not), which guide how school districts must address the problem of bullying. Some state education statutes include cyberbullying in definitions of bullying, while others do not (Stuart-Cassel et al., 2011). Even though most states have addressed bullying through the legislative process, there are still many unresolved questions with regard to the legal authority of schools to restrict student speech, which may or may not be occurring on school grounds (King, 2010).

The availability of the Internet has made it possible for students and classrooms to communicate beyond the schoolyard. Because of the Children's Internet Protection Act (CIPA) schools are required to install blocking and filtering software in order to receive E-rate discounts for telecommunications services and nearly all schools have used some form of technology to limit student access to inappropriate content (Wells and Lewis, 2006). Students have reported the ability to circumvent blocking and filtering technologies and a willingness to use cell phones in school and class even though doing so may be in violation of school rules (Agatson, Kowalksi, and Limber, 2007). Even though a school may have attempted to block certain websites or filter out inappropriate content, students may be able to access inappropriate content on school grounds. King (2010) advised that it has yet to be decided in the courts whether or not "online expression created off-campus is beyond the reach of public schools" (p. 871). Students have been disciplined in the past for behavior that has occurred off of school grounds (Zirkel, 2007), but courts have issued conflicting rulings when it comes to Internet speech (Quinn, 2003). School officials must address cyberbullying, in accordance with state laws and district policies, even though the legal authority to do so has not been settled by case law.

The ubiquitous nature in which technology has become a part of the modern school (Gray et al., 2010) and also students increasing usage of cell phones and the Internet as the primary tools of social communication (Lenhart et al., 2010) has resulted in novel approaches to managing student technology usage at school (Beale & Hall, 2007; King, 2010). With new technologies come new technological problems (Oppenheimer, 2003). School officials must adapt established procedures and guidelines to these evolving technologies. The novel and evolving nature of technology in schools and the legal uncertainty that comes with administering school computer networks may contribute to how a school official responds to the problem of cyberbullying. The combination of increased access to technology and legal uncertainty in managing those technological resources may result in a school official having undefined parameters with which to address the problem of cyberbullying.

In responding to behavioral incidents in schools, and selecting a potential disciplinary response, Lipsky (1980) argues that moral evaluations, which may rely in part on dominant social values, must be made. "Some clients (students) simply evoke workers' (school officials) sympathy or hostility" (p. 108). Principals provide a significant contribution to the overall quality of a school. Two important aspects of leadership are student-centered principal values and beliefs and an understanding of the local context and school organization (Gurr et al., 2006; Krüger, 2009). As school contexts vary greatly, in terms of school level, community characteristics, size, and the availability of resources, so too do the personal experiences and individual values and beliefs of a building principal. These individual differences may lead to different approaches to preventing bullying and different interpretations of and responses to aggressive student behavior.

Bullying is manifested in many different ways. Accounting for cyberbullying within the traditional framework, Walker (2010) delineates three forms of bullying, those being direct, indirect and relational. Cyberbullying is a relatively new form of aggression (Jerome & Segal, 2003) which can be manifested in a variety ways, including directly through threats and insults, indirectly, through spreading of embarrassing or humiliating information or images, and relationally, through online communication meant to ostracize or impair the peer relations of another. Some definitions of bullying require school officials to determine whether the intent of the perpetrator was to inflict harm (Olweus, 1993) while other approaches, rooted in positive behavior interventions and support (PBIS) and based on applied behavior analysis, focus only on the observable and measurable aggressive act (Ross & Horner, 2009). It is unclear what effect an understanding of the different forms of bullying or the differing approaches to intervention and prevention of bullying has on how school officials respond to bullying. It may be expected that school officials will have a different understanding of what is meant by the terms bullying and cyberbullying, due in part to differences in the way researchers have approached understanding the phenomenon.

Various studies have noted developmental differences in how aggression is perceived by students of different grade levels (Bradshaw et al., 2007; Monks & Smith, 2006; Pelligrini & Long, 2002; Smith et al., 1999) as well as reported differences in the prevalence of bullying in elementary, middle, and secondary schools (Rivers & Smith, 1994; Unnever & Cornell, 2004). Although limited in scope, similar findings have been reported for age differences of prevalence rates of cyberbullying (Slonje & Smith, 2008; Vandebosch & Van Cleemput, 2009). In a review of the research literature of the developmental pathways of normative and problematic interactions with peers Hay, Payne, and Chadwick (2004) noted that peer rejection, which can

occur as early as age three, may increase children's risk for continued victimization. Early difficulties with peer interactions may set the stage for later problems forming friendships, associating with deviant peer groups, and choosing a romantic partner. While a developmental model may help explain changes in children's behavior over time and provide a framework for understanding risk in terms of the development of antisocial and aggressive behavior, it is unclear how student development influences how a school principal understands student aggression. Monks and Smith (2006) reported that students of different ages and grade levels have different understandings of bullying. Younger students tended to interpret all forms of aggression as bullying. Adolescents were able to differentiate bullying from other forms of aggression and were also able to distinguish the difference between physical and non-physical forms of bullying.

In terms of the school organization, Bradshaw et al., (2007) found that school staff and teachers differed in their perceptions of student bullying and victimization across grade levels and that all school officials underestimated student victimization rates when compared to student self-reported victimization. Furthermore, the authors concluded that the personal experiences of staff members "appear to play an important role in predicting their likelihood of intervening in bullying situations" (p. 380). Since cyberbullying is a relatively new phenomenon, many school officials may not have direct experience with aggression mediated by Internet or cell phone usage. Although there are developmental differences in the manifestation of aggression and the understanding of bullying, these differences are not universal and may also be influenced by gender and culture (Sawyer, Bradshaw, and O'Brennan, 2008). It is unclear what effect student development has on how a school official understands bullying, and furthermore it is unclear how personal experience with bullying and aggression influence how a school official will

respond to the problem of cyberbullying. The differences in school contexts and the differences in personal experiences may be expected to lead to different interpretations of bullying incidents and different responses to those incidents.

Another variable that may influence how a school official responds to bullying is the gender of those involved with the aggressive behavior. For many years research on aggression focused on males and direct forms of physical aggression (Björkvist, 1994). Recent studies have looked at both similarities and differences in how boys and girls display aggression. Björkvist et al. (1992) reported differences in how young boys and girls used aggression. While boys tended to use direct forms of aggression, girls were more likely to employ indirect methods. Kistner et al. (2010) found that by fourth grade girls began to increase their use of relational forms of aggression, whereas in third grade boys received more nominations for relational and direct forms of aggression. Boys received more nominations for the use of direct physical and verbal aggression at all grade levels. Cairns and Cairns (1984) reported differences based on student gender in how teachers perceived and predicted aggressive behaviors of students. With groups of highly aggressive girls and boys teachers disproportionately rated girls with the lowest possible scores on an index of aggression compared to boys. School officials may not recognize relational aggression, more typical among girls, as aggressive behavior. Whether school officials interpret bullying incidents differently based on the gender of those involved is not clear. Whether the gender of the school official and their personal experiences with bullying and aggression affects how an incident of bullying is interpreted is also unknown.

The street-level bureaucrat must operate in an environment with competing goals and contradictory information (Lipsky, 1980). It is due to this lack of clarity that professionals, such as school officials, are afforded a level of discretion in conducting the daily business of an

organization. A building principal must interact with students and the school organization within a specific school context in exercising leadership. The school is situated within a community and is subject to local education agency administration. The local education agency is nested within a state education agency and is subject to state laws and national education initiatives. To paraphrase Bronfenbrenner (1999), the manner in which the principal as street-level bureaucrat exercises leadership is a function of the different forces, which emanate from the various settings and the relationships between those settings

Cyberbullying presents a significant challenge to school officials, in part for the reasons discussed here. Most states have addressed cyberbullying through legislation and public policy, although the legal authority of schools to discipline students for off-campus speech remains unclear. The universality of technology in the daily lives of young people both in and outside of schools has resulted in unforeseen consequences, not the least of which is the availability of a sinister and unsupervised forum for harassment and victimization. Principal values and beliefs vary, as do the contexts in which school officials must operate. Developmental and gender differences in the manifestation and perception of aggressive behaviors also may serve to complicate how school officials understand the problem of bullying. Given the many potentially complicating factors, this thesis has three purposes. First, it is important to know how school officials have responded to the problem of cyberbullying with prevention and intervention efforts. Second, it will be useful to understand how school officials interpret various examples of aggression mediated by Internet and cell phone technology. Finally, it will be informative to know the typical disciplinary response to various incidents of cyberbullying. Of primary concern are differences that exist between different groups of school officials.

Research Questions

The proposed research study will seek to answer the following research questions:

1)   What are some of the methods used in schools to prevent cyberbullying and are there differences between groups of respondents based on school level or gender?

2)

    a. Will school officials' rankings of a series of vignettes meant to represent a range of incidents of cyberbullying support a unidimensional construct (cyberbullying) and if so what is the nature of the hierarchical structure of the items?

    b. Are there differences in how school personnel interpret whether or not an incident constitutes cyberbullying based on respondent school level or gender?

3)

    a. Based on disciplinary response choices provided by school officials to a series of vignettes depicting incidents of cyberbullying, are there identifiable latent classes or subgroups of respondents?

    b. Are there differences between school personnel in their selection of a typical disciplinary response to various incidents of cyberbullying based on respondent school level or gender?

II. Literature Review

The review of relevant literature touches on a number of topics, which are either directly or tangentially related to the primary topic of cyberbullying. These topics are organized with the conceptual model in mind. First the literature on legislative and policy solutions to the problem of cyberbullying is reviewed. The national and state level discussions about the problem of cyberbullying represent the broad societal context, under which local school systems and the schools within those systems must operate. The critical constituency at the school level is students. The majority of the literature review focuses on cyberbullying and students. First the literature on youth and technology is explored and then various aspects of the bullying and cyberbullying literatures are presented. The school organization is discussed throughout the literature review in terms of school facilities, especially with regards to technology and school wide approaches to prevention and intervention. The role of school personnel is also discussed, especially in terms of the discrepancy between staff perceptions and student perceptions of bullying and victimization. Finally, the literature on school leadership and discipline is reviewed. The principal has been identified as the person primarily responsible for exercising decision-making powers within a school (Gurr, et al., 2006). The literature on how school officials respond to behavioral problems is important to consider, given the present topic of cyberbullying. The following section will lay the foundation for the literature review and address the legal uncertainty, which schools must operate under when dealing with student behavior in cyber environments.

Legal Mandates, Policy Solutions, and the First Amendment

Srabstein, Berkman, and Pyntikova (2008) positioned the issue of bullying as a public health concern and examined the extent to which anti-bullying legislation reflects a link between

bullying and negative health outcomes for victims. Currently 48 states have enacted laws against bullying (National Conference of State Legislatures, n.d.). Only Montana and South Dakota have not. Although the laws vary greatly (Stuart-Cassel et al., 2011), most provide a definition of bullying, identify potential victims or groups who could be targets of bullies, and mandate that schools provide professional development for faculty and staff members (Zubrzycki, 2011).

The 96th Illinois General Assembly recently amended the School Code, revising the anti-bullying law passed in 2007. Among several changes is the prohibition of bullying "through the transmission of information from a school computer, a school computer network, or other similar electronic school equipment" (Bullying Prevention, 2010). Furthermore, the statute provides a codified definition of bullying, which shifts the focus from the observable act committed by a student, to conduct that can be predicted to cause fear, have a detrimental effect on one's mental or physical health, interfere with academic performance, or interfere with one's ability to participate in school activities (Bullying Prevention, 2010).

With the emphasis on what effect aggression will have on a victim, it is conceivable that the same behavior directed at two different students could, in one instance be considered bullying, given the predicted negative effects, and in another instance not be considered bullying, given the ability of the victim to disregard the harassment. Also, reducing these interactions to occurrences between an aggressor and a victim ignores the role bystanders play in supporting this process (Salmivalli, Lagerspetz, Björkvist, Österman, and Kaukiainen, 1996; Twemlow, Fonagy, & Sacco, 2004). Although not addressed in the legislation passed in Illinois, successful school prevention programs promote the intervention of adult and student bystanders to intercede on behalf of victims (Colorado Trust, 2008).

Clearly, anti-bullying legislation is meant to protect students from harassment so that they can benefit from educational opportunities. The amended statute tries to address the deleterious effects of bullying in prohibiting certain behaviors that limit a student's ability to participate in school. The statute does several things. First, it recognizes bullying as a problem. Second, it extends the school's zone of responsibility to include off-campus, school sponsored events and material accessed through school computer networks. Finally, it distinguishes bullying from other undesirable behaviors by defining it as intentional behavior that causes harm to a victim. Of concern is the consistency with which different school personnel will recognize incidents as bullying, given that they must infer the intent of the aggressor and predict the effect on the victim. Cyberbullying may be even more difficult to interpret than traditional forms of bullying because most incidents of cyberbullying involve written text, either in the form of direct insults and threats or indirectly through spreading rumors (Juvonen & Gross, 2008; Mishna et al., 2009). It may be more difficult to interpret intent or the effect on a victim from written material.

Written expression is a form of student speech. The ability of the courts to regulate and restrict student speech is complicated and uncertain (Quinn, 2003). "Until the Supreme Court provides clarity on the ability of schools to regulate online speech, legislators should tailor cyberbullying laws carefully to avoid running afoul of the First Amendment" (King, 2010, p. 877). Student freedom of speech in schools has been a contentious issue since 1969, when in the case of *Tinker v. Des Moines School District* (1969)*,* the Supreme Court ruled that students had the right to protest the war in Vietnam by wearing black armbands and that students do not "shed their constitutional rights to freedom of speech or expression at the schoolhouse gate" (p. 393). The decision in favor of student speech in *Tinker* hinged on the fact that the expression of protest against the war in Vietnam was not deemed disruptive and it did not infringe upon the rights of

others or the functioning of the school. Determining when the operation of a school has been substantially disrupted by student speech and if a school has appropriately disciplined a student for that speech without violating their First Amendment rights has been inconsistent in rulings from state to state (Belnap, 2011).

In the case of *Bethel School District No. 403 v. Fraser* (1986) the Supreme Court found that schools must be empowered to distinguish between appropriate and inappropriate speech and must have the ability to "disassociate itself" (p. 478) when the speech is not consistent with the values held by those schools. *Fraser* involved the suspension of a student who gave a speech at a school assembly, in which he used sexual innuendo and made sexual gestures. Since the speech was made at a school-sponsored event, the Court found the suspension did not violate the student's First Amendment rights (Quinn, 2003).

In *Hazelwood School District v. Kuhlmeier* (1988) the Supreme Court held that a high school principal, who refused to allow publication of stories about divorce and teen pregnancy in the school's newspaper, did not violate students' First Amendment rights. A distinction between the *Bethel* case and the *Hazelwood* case is the fact that, although the student's speech was punished in *Bethel*, he was not prohibited from making it. In *Hazelwood*, the principal actually restricted student speech, by censoring the content of the school newspaper. In both the *Bethel* and *Hazelwood* cases, the school was permitted to disassociate itself from speech deemed inappropriate by school standards (Quinn, 2003).

These cases illustrate successful and unsuccessful attempts to limit a student's on-campus speech. In *Morse v. Frederick* (2007) the Supreme Court found that a school could discipline a student for off-campus speech. In 2002, a student named Joseph Frederick unfurled a 14-foot banner, which read "BONG HITS 4 JESUS", across the street from his high school in Juneau,

Alaska, as the Olympic Torch Relay passed by en route to Salt Lake City, Utah. The principal had allowed students to watch the relay as part of a school approved event from both sides of the street in front of the school. Frederick's banner was visible to students at school. Even though he did not report to school that day and was technically off-campus, the Court held that he could be disciplined, because the "speech" occurred at a school-sponsored event and promoted the illegal use of drugs, against school board policy (Zirkel, 2007).

Due to the ubiquitous nature of the Internet and the availability of technology in schools the distinction between on-campus and off-campus is becoming less clear. Students are able to access content created off-campus while using school computers with Internet access. One implication of the *Morse v. Frederick* case is that under certain circumstances schools may discipline students for off-campus behavior if it affects students who are on-campus. Here, students could clearly witness the offensive speech. The legal authority of schools to intervene when offensive speech takes place in a forum, such as a social networking site, where a school has blocked access is not clear (King, 2010).

The courts have not consistently ruled in cases involving Internet speech. Quinn (2003) summarized two cases, brought by students who were disciplined for online speech, with different outcomes. In one case a student posted derogatory, vulgar statements about several teachers and a principal on a web site created at the student's house. The court ruled it was not reasonable to suspend this student, since there was no threat of disruption to the operation of the school. The court seemed to rely on the distinction between on and off-campus, not considering the fact that students could access the material created off-campus while on-campus.

In another case a student created a web site at home with graphic animation of a teacher being decapitated and morphing into Adolph Hitler. The site also solicited $20 from visitors to

help pay for a "hit man". The court ruled that the principal and teachers could reasonably have

felt threatened, that the First Amendment did not protect the student's speech, and that

disciplinary action by the school was warranted. Here the distinction the court relied on was the

nature of the content of the website, not whether or not the material was created off-campus. It is

unclear why one instance of ridicule is not subject to disciplinary action and another is. The lack

of consistency in judicial rulings leaves schools to determine if addressing inappropriate Internet

speech may lead to a legal challenge by a student for infringement of First Amendment rights.

Willard (2007) argues that school officials have a responsibility to act if there is

knowledge of online speech, which creates a hostile environment, where students may feel

intimidated, threatened, or harassed, and where there is the potential to impair "a student's ability

to participate in or benefit from an education program or activity" (Willard, 2007, p. S65). Given

the responsibility to provide a safe learning environment, the jurisdictional uncertainty may

paralyze school officials from taking action. King (2010) summarizes the problem:

> The Internet obscures the boundary between on-campus and off-campus speech,
>
> leaving schools and courts to grapple with how to treat the 'grey area' created by
>
> the vast amount of online speech created off-campus that is accessed on-campus
>
> and affects students at school. (p. 870)

The legal uncertainty under which schools must operate is problematic. There are several

relevant implications. School officials must determine under which circumstances a student may

be disciplined for what is essentially offensive speech, which is intended to cause another student

harm. The fact that the speech can be created off-campus but accessed on campus, where it may

have a negative effect on the educational environment, produces questions about the jurisdiction of a local school. At the present time these questions are unsettled. In the following section the importance of technology as a tool of communication in the lives of young people is explored.

Youth and the Internet

A report from the U.S. Department of Education (Gray et al., 2010) states that 100% of all U.S. public schools have computers for student use with Internet access. Ninety-eight percent (98%) of elementary schools and 96% of secondary schools have instructional computers with Internet access in classrooms. When comparing the technology in schools by geographic region there is virtually no difference between rural, town, suburban, and city schools. There also appears to be very little difference between schools with either a high or low percentage of students of color, nor any difference between schools with either a high or low percentage of students eligible to receive free or reduced-price lunch. The student-to-computer ratio in elementary schools is 3.2 to 1 and in secondary schools that ratio drops to 2.9 to 1. These data suggest there is no lack of opportunity for U.S. public school students to use computers and to gain Internet access while at school.

Findings from a recent report of the Pew Internet and American Life Project (Lenhart et al., 2010) illustrate the pervasiveness of the Internet in the lives of young people. Ninety-three percent (93%) of youth, 12 to 17 years of age use the Internet regularly. This percentage has remained stable since 2006. Sixty-three percent (63%) of young people go online every day. Young people's homes are wired with broadband Internet access at a rate of 76%. Broadband access is positively associated with frequency of Internet usage. Seventy-five percent (75%) of American teens have a cell phone. Teens are able to access the Internet using computers, tablet devices, cell phones, portable gaming devices, and game consoles. This information is not

surprising to anyone who parents an adolescent. More and more, young people's communication is mediated by Internet technology (Subrahmanyam, Smahel, Greenfield, 2006).

Seventy-three percent (73%) of U.S. teens interact with each other through social networking sites (Lenhart et al., 2010). Even though Internet technology is almost universally available (Gray et al., 2010), schools routinely block access to social networking sites and other objectionable material (Wells and Lewis, 2006). This strategy is understandable, given the lack of control a school has over the content of these sites. Blocking and filtering may be necessary, in part because only 31% of schools report having a full-time technology specialist who might assist teachers with technology integration (Gray et al., 2010). Even though schools are attempting to manage the availability of offensive content and websites through school networks and computers, students have reported that they are able to circumvent blocking and filtering software and gain access to objectionable materials (Agatston et al., 2007). If this is the case, it brings into question whether or not a school should discipline students for material posted on websites, which may be blocked, but which ultimately is available for students to view while at school, through school networks, and on school computers.

Gross (2004) reported that adolescents use the Internet primarily for communication, and to a lesser extant as a tool of identity exploration. Greenfield and Yan (2006) consider the Internet as a "new social environment in which universal adolescent issues such as identity, sexuality and a sense of self-worth are played out in a virtual world" (p.392). One's online identity is a virtual representation of his or her idealized self. The photos you choose to include in your profile, the number of friends you have in your network, your ability to communicate with and represent yourself as smart, funny, sensitive, knowledgeable, cool, or concerned to others, along with descriptions of your interests, and associations with groups or websites make

up an online version of yourself that you are able to shape and edit. Participation on the Internet and in virtual groups and networks can have a powerful effect on the concept of self and the formation of one's identity (Bargh & McKenna, 2004). Notely (2009) found that online social networks provide those at risk of social exclusion the opportunity to interact with others, to maintain existing relationships, and to meet new acquaintances. For those already at risk of exclusion, cyberbullying can be especially hurtful and can be further marginalizing. When our online identity is threatened, harassed or belittled it can be devastating (Raskauskas & Stoltz, 2007). Especially upsetting is the fact that cyberbullies can reach victims at home, in a place that is supposed to be safe, at any time of the day or night (Mishna et al., 2009).

With the availability of computers with Internet access in schools and classrooms and the availability of Internet and cell phone technology in the home, these tools, the personal computer and the cell phone, have become integral in the lives of young people (Rideout et al., 2010). Although it may be a minority opinion, Oppenheimer (2003) questioned whether the technological revolution in schools was in students' best interests. Of concern was not aggression in unsupervised cyber-environments, but whether or not all of the ramifications of "wiring" U.S. public schools had been considered. With the advent of the Internet as a social and commercial forum, users have reported a number of problematic online experiences (Mitchell, Becker-Blease, and Finkelhor, 2005), including social isolation, sexual exploitation, pornography and gambling addictions, as well as harassment and cyberbullying. In the following section the literatures on bullying and cyberbullying are presented. Much of the current literature on cyberbullying has built on the foundational research into traditional bullying, especially with respect to prevalence rates, risk for involvement, and effects of involvement. It is useful to

compare the two literatures and also look at studies, which have examined the overlap between bullying and cyberbullying.

Bullying

In order to understand the phenomenon of cyberbullying, it is important to review the research literature on traditional forms of bullying. In many of the current investigations of cyberbullying, it has been assumed that harassment delivered electronically through the use of the Internet or cell phones is just a new form of bullying (Beran and Li, 2005; Juvonen and Gross, 2008; Patchin and Hinduja, 2006; Slonje and Smith, 2008) and that those involved in this novel manifestation of bullying behavior possess similar types of characteristics and experience similar types of outcomes as those involved in traditional bullying (Ortega, Elipe, Mora-Merchán, Calmaestra, and Vega, 2009; Wang, Nansel, and Iannotti, 2011). In fact, it has been suggested that a significant number of students who are involved in cyberbullying are also involved in traditional bullying (Erdur-Baker, 2010; Juvonen & Gross, 2008; Raskauskas & Stoltz, 2007). To better appreciate how research into cyberbullying is being conducted, it is necessary to compare that research with the literature on traditional bullying.

What is Bullying?

Defining exactly what constitutes bullying is problematic for schools. There is not a single, universal definition (Elinoff, Chafouleas, & Sassu, 2004). School officials must rely on state or district definitions of bullying, personal experiences with bullying, and student and teacher reports of victimization. Relying on teachers to recognize and report student victimization may be problematic, in that staff may be unaware of ongoing bullying problems. Bradshaw, et al. (2007) found that school staff at elementary, middle, and secondary levels underestimated student victimization rates. Part of the problem is that many students do not

report being bullied to an adult (Unnever and Cornell, 2004). If students do report victimization, their definitions of bullying change from childhood to adolescence, with younger students interpreting all forms of aggression as bullying (Monks and Smith, 2006). Bullying may look differently for boys and girls. After third or fourth grade, boys tend to use direct aggression more frequently and girls more often use indirect or relational forms of aggression (Björkvist et al., 1992; Cairns et al., 1989; Kistner et al., 2010; and Lagerspetz et al., 1988). "Unfortunately, because relational aggressions are more covert and subtle than physical assaults, they may be far less recognizable to school personnel" (Elinoff et al., 2004, p. 891). Another problem in defining bullying is that anti-bullying laws vary greatly from state to state and many states do not even address cyberbullying in anti-bullying statutes (Mayer, 2011).

Most definitions of traditional bullying identify it as having three critical components: 1) Bullying involves intentional physical, verbal, or social behavior that is directed at another with the purpose being to cause harm or distress; 2) These behaviors are repeated over time; and 3) A relationship exists between the bully and the victim where there is an imbalance of power or strength, although that difference is not necessarily physical in nature (Olweus, 1997).

Certain interactions, such as play-fighting or wrestling between young peers may appear to constitute a form of bullying, where one person acts in an aggressive manner toward another, when in fact this may be a developmentally appropriate form of rough-and-tumble play (Pelligrini, 2006). Occasional displays of aggression in toddlers are considered normative behavior (Hay et al., 2004). Also, verbal insults (even when delivered repeatedly over time) may not necessarily constitute bullying. Peers may engage in trading verbal insults and putdowns without malicious intent (e.g., 'playing the dozens'). Farrington (1993) noted that it is problematic "to decide where teasing ends and bullying begins" (p. 385). Educators are often put

in the position of having to differentiate between harmful interactions and playful, albeit rough, instances of peer-to-peer behavior. The hypothesis that bullying and cyberbullying are developmentally normative behaviors has been explored in terms of social dominance theory (Beran & Li, 2005; Pelligrini and Long, 2002), where dominance hierarchies are negotiated in childhood and renegotiated in adolescence as a means of eventually reducing aggression and establishing a stable group dynamic. Misconceptions about bullying, in particular that it is a developmentally appropriate behavior, may lead some school authorities to feel that since it is "normal" and "typical" it is also acceptable at some level. Given the research illuminating the negative outcomes for those involved in bullying (e.g., Nansel et al., 2001) it may be more useful to frame all forms of bullying as abhorrent and aggressive acts meant to inflict harm on a victim, which is distinct from developmentally appropriate behavior and social interactions. The notion that bullying is useful in establishing a stable social structure is counterintuitive, given the lasting mal-effects on those involved.

Most current definitions of cyberbullying rely upon the definition of traditional bullying along with the caveat that the aggression is mediated by Internet or cell phone technology. Monks and Smith (2006) noted that bullying behaviors are a subset of aggressive behaviors that involve a physical, social, or psychological power differential between the bully and the victim. Bullying can take many forms and is differentiated, with respect to intensity, purpose, and duration, from developmentally appropriate types of childhood and adolescent behavior involving conflict. Traditional bullying generally involves physical or verbal behaviors that result in frightening, harassing, threatening, or in some way harming another individual (Farrington, 1993). Intent to cause physical, emotional, or psychological harm is an important component of the definition, although Guerin and Hennessy (2002) found that students believed

the perception of intent by the victim took precedence over the actual intent of the perpetrator. The definitional requirement that the harassment be delivered repeatedly over a period of time was initially considered important to differentiate bullying as a serious problem from occasional, less serious instances of aggression, but this has been questioned, as the effects of one-time bullying encounters may be equally upsetting and have lasting effects on a victim (Guerin and Hennessy, 2002; Olweus, 1993).

Olweus (1978) was initially concerned with bullying as a group process, where an individual is aggressively targeted by others over a long period of time and where that aggression is direct in nature in the form of fights and teasing. Salmivalli et al.(1996) also reported on bullying as a group process, but focused on the different roles of those involved, beyond just the bully and the victim. Other studies have noted that aggression among girls has been largely ignored or underestimated (Björkvist, 1994). Contrary to the view that boys are universally more aggressive, Björkvist et al. (1992), Crick and Grotpeter (1995), and Lagerspetz et al. (1988) noted that while boys tend to display aggression through direct physical and verbal confrontations, girls are more likely to engage in relational aggression, targeting social relationships within a peer group and manipulating friendships as a strategy to cause harm to others. Examples include excluding a victim from a group, spreading rumors or gossip, and encouraging others to ostracize the victim. Relational aggression may be subtler in nature, but can be very hurtful to victims who experience negative social and psychological outcomes (Underwood, 2003). Rivers & Smith (1994) summarized the three main types of traditional bullying behaviors as direct physical aggression, direct verbal aggression, and indirect aggression. Direct physical bullying includes behaviors such as hitting, kicking, pushing, the taking of personal possessions, and physical domination. Direct verbal bullying is defined as

issuing threats, taunting, and name-calling. Indirect bullying is essentially relational aggression, which includes spreading rumors, gossiping, making up stories about another, and excluding or ostracizing someone.

Bullying may involve very diverse types of behaviors. There are differences in how children and adolescents understand the term bullying. Teachers and other school staff may underestimate student victimization, as many students will not report being bullied by others. There are differences in the ways in which boys and girls display aggression and those differences appear to change, as students get older. Given differences in the quality and specificity with which bullying is defined in state laws, school officials are tasked with understanding all of the nuances described here in order to effectively address bullying in their schools.

Cyberbullying.

Much of our understanding of cyberbullying is based on the foundation of research into traditional bullying. The nature of cyberbullying has evolved as young people trade particular types of communication platforms, such as Internet chat rooms and instant messaging programs, for others, such as social networking sites and cell phone text messaging technology (Kowalski and Limber, 2007; Sengupta and Chaudhuri, 2011). Our understanding of cyberbullying continues to change as Internet and cell phone communication styles change. In order for schools to prevent cyberbullying and intervene on behalf of students it is important to continually refine our understanding of the role technology plays in their victimization.

A letter to the editors of the Journal of the American Academy of Child and Adolescent Psychiatry (Jerome & Segal, 2003) is one of the first calls to alarm in the literature. In the letter the authors described a brutal episode of cyberbullying, which was presented in their clinical

practice, where perpetrators created a web page and invited others to make nasty comments about the victim. Various monikers, including "digital harassment", "Internet bullying", "cyber harassment", "online victimization", and "Internet victimization", have been given to what is now commonly referred to as cyberbullying. Early reports of victimization via the Internet were primarily concerned with children being exposed to sexual material through predatory behaviors of adults (Finkelhor, Mitchell, and Wolak, 2000). Harassment and threats from peers delivered through text messages, email, or chat rooms were presented as secondary concerns. In the last ten years research into cyberbullying has diversified. Studies have looked at prevalence rates, typologies, correlates with traditional bullying, characteristics and pathologies of cyberbullies and cyber-victims, risk factors for involvement, psychological and academic effects of involvement, and the legal implications of cyberbullying. There are also several books available, as well as curricular intervention programs for use by schools and parents, with the intention of preventing victimization in cyberspace.

Cyberbullying has been defined as the repeated delivery of threats or harassment to an individual or group using electronic communication technology, primarily through cell phones or computers with Internet access, characterized by an imbalance in power, either physical, social, psychological, or technological, where the intent, whether real or perceived, is to cause harm to the victim (Mason, 2008; Patchin and Hinduja, 2006; Smith et al. 2008; Vandebosch & Van Cleemput, 2008). But given the definitional issues involved with traditional bullying, it is not surprising that there is a lack of agreement about what does and doesn't constitute cyberbullying (Vandebosch & Van Cleemput, 2009; Wolak et al., 2007).

Determining exactly what constitutes cyberbullying and when to act is a problem school officials must confront. Chat rooms, instant messaging platforms, email, social networking sites,

and cell phone text message are some of the venues where cyberbullies harass their victims (Kolwalski, Limber, & Agatston, 2008). Examples of cyberbullying include spreading rumors, sharing personal information, gossiping, name-calling, excluding, ostracizing, issuing threats, hacking and impersonation, and altering or maliciously commenting on photographs (Vandebosch and Van Cleemput, 2008). One particularly odious form of cyberbullying discussed in the literature occurred when a boy persuaded a girl to reveal secrets about herself and then threatened to expose those secrets unless the girl flashed, or removed clothing while in front of a web cam (Mishna et al., 2009).

One problem for schools is differentiating between aggressive and potentially criminal behaviors and less serious, but still problematic, Internet encounters. If schools wait for students to come forward with episodes of harassment, many instances of cyberbullying may go unreported, as students have indicated an unwillingness to report incidents of cyberbullying to adults (Mishna et al., 2009). Ybarra (2004) noted that youth suffering with depression may be more likely to perceive a situation as threatening and may report incidents of cyberbullying at a higher rate, further complicating this issue of interpretation.

Patchin and Hinduja (2006) noted that a distinct difference between bullying and cyberbullying is that bullying behaviors are primarily perpetrated at school, where cyberbullying can occur anytime of the day or night. A cyberbully is only limited by the ability of Internet and cell phone technology to reach his or her victim. Slonje and Smith (2008) noted some differences between traditional bullying and cyberbullying, including the inability of the victim to escape harassment (e.g., text messages can be sent repeatedly, at any time of day), the potential for a large audience to witness the harassment (e.g., a video clip viewed by visitors to a web site), and

the ability of the cyberbully to remain anonymous. Furthermore, a cyberbully may remain ignorant of the consequences of his or her actions.

Raskauskas & Stoltz (2007) hypothesized that a cyberbully feels a sense of detachment from the victim and because of this avoids feelings of guilt over aggressive behaviors. This sense of detachment may lead to aggression and retaliation that would not otherwise have occurred in a purely physical interaction. Mason (2008) described the effect that computer-mediated-communication (CMC) has in disinhibiting individuals as they interact in cyberspace. This disinhibition effect reduces the concern one may normally feel about how others view and judge their actions. This effect may be enhanced by a sense of anonymity and a loss of restraint in online interactions. The Internet may then become a venue for aggressive and hurtful communication, given the lack of personal accountability with CMC and the loss of inhibition typically present in face-to-face interactions.

One of the most effective strategies to stop face-to-face bullying is through the intervention of student and teacher bystanders (Colorado Trust, 2008). Cyberbullying occurs in a medium, which is difficult to supervise and where adults are rarely present to intervene. One study found that students used cell phones to communicate while in class and that they found it easy to circumvent the school's Internet blocking and filtering software (Agatston et al., 2007). Cyberbullying allows perpetrators to victimize a greater number of targets in front of a larger audience without significant risk for bystander interference (Dempsey et al., 2009). Many victims of cyberbullying are unwilling to talk to their parents because they are afraid of losing Internet privileges (Juvonen & Gross, 2008). Students usually don't report incidents of cyberbullying and when they do, they tell a friend first and a teacher or school official last (Smith et al., 2008).

Just as with traditional bullying, there are different types or levels of bystanding. Intervening on behalf of a victim, by voicing disagreement with the targeting of a particular individual, may turn the bully's malicious attention to the bystander. Twemlow et al. (2004) noted that even so-called passive onlookers are unavoidably part of the social-system, which facilitates the "victimization process" (p. 217). Since the role of the bystander is critical in either supporting or deterring bullying, schools must determine how to encourage bystanders to defend victims. Furthermore, schools must determine what culpability, if any, is attributable to bystanders who support the actions of a bully.

Although there is still much more to learn about the particulars of cyberbullying, some patterns are beginning to emerge. The definitional problem of differentiating between teasing and cyberbullying seems to depend on the intent or perceived intent of the perpetrator (Vandebosch & Van Cleemput, 2008). Further work is needed to differentiate problematic Internet experiences from actual episodes of cyberbullying. Given the evolving nature of Internet communication technology, the nature in which cyberbullying is manifested may also be expected to continually change. In order to understand the scope of the problem and to compare the incidence of traditional bullying with cyberbullying, prevalence rates for both forms of bullying are presented in the following sections.

Prevalence of bullying.

Given the lack of an operational definition of bullying (Elinoff et al., 2004; Farrington, 1993; Grief, Furlong, and Morrison, 2003), determining an exact prevalence of the behavior is problematic. Initial research by Olweus (1978) in Scandinavia found that approximately 10 - 20% of students were involved in bullying either as a bully or a victim, depending on how bullying and victimization were defined.

In a study of bullying behaviors of American youth in grades 6 through 10, Nansel et al. (2001) found that nearly 30% of students were moderately to frequently involved in bullying either as a bully, a victim, or as both a bully and a victim. These results were based on a self-report survey of a nationally representative sample of 15,686 students in public and private schools. Bullying was found to occur most often in grades 6 through 8. No significant differences were found between students from urban, suburban, town, or rural areas.

Unnever and Cornell (2004) found that 37% of middle school students, in grades 6 though 8, had been bullied. Students who felt that school officials tolerated or overlooked bullying were less likely to report victimization. Also, girls were more likely to report victimization than boys. Overall, 25% of students who were bullied did not tell anyone and 40% of victims did not tell an adult about being bullied.

Bradshaw et al. (2007) found that students reported frequent involvement in bullying, defined as being involved either as a bully or a victim twice or more within the previous month, at a rate of 40.6%. Furthermore, it was found that 70.6% of students had witnessed an episode of bullying in the past month. As with the Nansel et al. (2001) findings, middle school students were more likely than either elementary school students or high school students to report direct, physical types of bullying. Of the findings reported by Bradshaw et al. (2007), none is more troubling than the discrepancy between student self-report data and staff perceptions. Staff at all educational levels continually underestimated student victimization rates. Although this may be expected since bullies tend to operate away from adult supervision (Olweus, 1993), underestimation of the problem may negatively affect intervention and prevention efforts. Only 1% of elementary school staff reported similar rates of bullying as reported by students and only

5.1% of middle school staff and 8.9% of high school staff were able to accurately predict student rates of victimization.

Rivers and Smith (1994) investigated the prevalence of victimization by type of behavior. For all forms of bullying studied, direct physical, direct verbal, and indirect, there was a decrease in victimization from primary school (8 – 11 years) to secondary school (11 – 16 years). Boys were more likely to be physically bullied, while girls were more likely to be victimized by indirect bullying. There was very little difference between girls and boys with respect to verbal bullying at either the primary or secondary school level.

Sawyer et al. (2008) found that prevalence rates varied wildly depending on how students were questioned about victimization. When students were asked if they had been bullied in the past month, given a research-based definition, prevalence rates were much lower compared to when students were given descriptions of different types of bullying and questioned about whether the types of behaviors described had occurred. This brings into question whether prevalence rates should be based on student interpretations of bullying or behavior-based descriptions of bullying. Using behavior-based descriptions of bullying may result in a more accurate understanding of the frequency with which students are subjected to aggressive behaviors, but doing so may inflate estimates of actual bullying. Conversely, students may be more willing to admit victimization via behavior-based descriptions because doing so may be less stigmatizing than admitting one has been the victim of bullying. Establishing an exact prevalence of bullying may not be possible, given the different understandings of the term by students of different grade levels (Monks and Smith, 2006) and the different ways researchers have defined bullying to subjects. In the following section, prevalence studies of cyberbullying are presented.

Prevalence of cyberbullying.

The majority of research on cyberbullying has relied on self-report, survey data. Survey research is necessary when studying bullying, in part because bullying behaviors typically occur away from adult supervision (Farrington, 1993). It is difficult to observe displays of antisocial behavior because perpetrators will not want to be identified out of fear of disciplinary consequences. The other problem is that victims oftentimes do not come forward (Olweus, 1993). Establishing a prevalence rate for cyberbullying behaviors depends on how it is defined. Tokunaga (2010) found prevalence rates ranging from 3.3% in one sample (Slonje & Smith, 2008) to 72% in another (Juvonen & Gross, 2008). Some definitions of cyberbullying rely on traditional definitions of bullying combined with the criteria that the bullying occur through text message, email, cell phone, or picture/video clips (Slonje & Smith, 2008). Other definitions are more inclusive. Juvonen and Gross (2008) shied away from the term bullying, afraid that interpretations of the term might be too narrow. Instead, "anything that someone does that upsets or offends someone else" (p. 499) was used as a definition of "mean things". Examples given include, "name-calling, threats, sending embarrassing/private pictures, and sharing private information without permission" (p. 499). With the variety of definitions it is not surprising that prevalence rates vary considerably. Tokunaga (2010) found that, on average, prevalence rates ranged from 20-40%. Of the 25 studies included in the analysis 14 did not report on the definition of cyberbullying given to respondents. Although thus far it has proven elusive, establishing an accurate prevalence rate is crucial to understanding the extent of the problem of cyberbullying.

Wang et al. (2009) compared prevalence rates of physical, verbal, relational and cyberbullying obtained using the revised Olweus Bully/Victim Questionnaire. Prevalence rates

for involvement in bullying, as either a bully or a victim, at least once in the past month were highest for verbal (53.6%) and relational (51.4%) bullying. Students reported victimization vis-à-vis physical bullying at a rate of 20.8% and cyberbullying at a rate of 13.6%. As with traditional forms of bullying, prevalence rates of cyberbullying vary with the definition provided to students in surveys. In the following section bullying and aggression are explored, with an emphasis on developmental differences in how aggression is interpreted and manifested by students over time.

Developmental trajectory of involvement in traditional bullying.

Bullying is generally believed to occur more frequently at the middle school level than at either the elementary or the high school level (Farrington, 1993). In an analysis of self-report data from 14,465 Norwegian youth in grades 4 through 10 (Solberg et al., 2007), reports of victimization declined with age for both boys and girls, while the prevalence of bullies increased with age before tapering off at ninth grade.

Rates of victimization are relatively high among younger students. When a student first enters a school in kindergarten or first grade, the percentage of students who might be a victim is at its highest, while the percentage of students who might be a bully is at its lowest. This is because younger students are at a disadvantage in terms of physical strength and social competence compared to older students. Smith et al. (1999) reviewed twelve studies conducted in Norway, Sweden, England, Australia, and Ireland, all of which reported a decline in victimization by age. The authors hypothesized that the frequency of victimization is directly related to the presence of older students, who are physically stronger and more socially skilled.

O'Brennan et al. (2009) reported similar findings, which showed that the percentage of students who reported victimization declined from elementary school to middle school and from

middle school to high school. Furthermore, similar to Solberg et al. (2007), the percentage of students who reported being a bully or a bully-victim increased from elementary school to middle school and from middle school to high school.

Pelligrini and Long (2002) reported that, in addition to student age, school level, and specifically the transition from elementary school to middle school, occasioned a temporary increase in victimization. These findings were different from previous studies, where victimization rates steadily declined as student age increased. The authors hypothesized that the transition to a new school setting resulted in increased victimization as students formed new social groups.

Nansel et al. (2001), in a study of 15, 686 students in grades 6 through 10, found that both self-reported bullying and victimization decreased as student age increased, although there was an increase in self-reported bullying in the "sometimes" category for eighth and ninth grade students over seventh grade students. Whether or not that particular increase is related to a transition from middle school to secondary school is not clear.

Monks and Smith (2006) found that interpretations of aggressive incidents as examples of bullying changed as students increased in age. Younger students had greater difficulty distinguishing bullying from other forms of aggression, whereas older students were more likely to recognize nuances, such as a power imbalance or indirect forms of aggression. Interestingly, adults were less likely to recognize exclusion and hurtful teasing as examples of bullying compared to older students.

As students grow older they may develop the skills necessary for dealing with problematic social situations. Having the ability to successfully resolve social problems, where bullying might have occurred for younger and less socially competent students, would result in a

lower prevalence of self-reported victimization. As students get older the number who identify themselves as victims decreases, while the number of students who identify themselves as bullies increases, for a time, before stabilizing. The middle school years seem especially problematic, as a time when there are a significant number of students who self-identify as victims and when the prevalence of bullies is still increasing. When examining prevalence rates it is important to consider how bullying is defined and the school configuration in terms of grade levels along with student age. In the following section risk factors and effects related to traditional bullying are discussed.

Characteristics, risk factors, and effects associated with involvement in bullying.

Numerous studies have attempted to identify personal characteristics, which put children and youth at greater risk for involvement in bullying, with the purpose being the development of prevention and intervention strategies to reduce that involvement. Bowes et al. (2009) found that socio-environmental factors, such as school size, problematic community factors, such as vandalism and neighborhood conflict, and family factors, including witnessing domestic violence and experiencing maltreatment, were the primary factors related to involvement in bullying, either as a bully, a victim, or as both a bully and a victim, over and above a student's own behavioral profile. The study controlled for the presence of internalizing and externalizing behavior problems, which were also strongly associated with bullying behaviors, and found these other socio-environmental factors to take primacy.

Although the power imbalance between the bully and victim is typically conceived of as being physical in nature, Rodkin and Berger (2008) stated that, "Psychological power differentials continue to be a critical feature in how asymmetries between bullies and victims are conceptualized" (p.473). Surprisingly, they found that of the 23% of students who were directly

involved in bullying, there was little difference in the popularity of bullies or victims. Not surprisingly, bullies were rated as highly aggressive and as least liked among peers, challenging the notion that the psychological power differential between bullies and victims was derived from the social status or popularity of the bully. Salmivalli et al. (1996) looked at bullying as a group process involving not only tormentors and victims, but also other members of the social group who can either reinforce bullying or act in defense of victims. They found defenders to have the highest social status and victims to have the lowest. Interestingly, male bullies were rated as low status children, while female bullies were rated higher than average in both social acceptance and social rejection. This may be due to differences in how boys and girls use aggression and how peers interpret those various manifestations of aggression.

Joliffe and Farrington (2006) examined the relationship between low levels of empathy and bullying, the theory being that students who bully others have less ability to empathisize than students who do not. Male students who engaged in frequent violent bullying and female students who engaged in frequent indirect bullying had lower total scores on an empathy scale than other students.

Understanding and identifying the characteristics of bullies and victims has been further problematized by the emergence of a third category, that of the bully-victim (Solberg et al., 2007). This type of student may be the target of repeated harassment in one case and may also aggressively victimize others when a power imbalance is in their favor. O'Brennan et al. (2008) found that bullies and bully-victims were at an increased risk for aggressive-impulsive behavior and were more likely to support aggressive responses to threats. Furthermore, victims and bully-victims were at an increased risk for internalizing problems, such as anxiety and depression, and may even have felt that their being bullied was justified. Of the three categories of students,

bullies, victims, and bully-victims, the prevalence of the bully-victim was the smallest, but a student in this category may experience the most severely negative outcomes (Nansel et al., 2001).

Estévez et al. (2009) found that victims and bully-victims had lower levels of self-esteem, higher levels of depressive symptomatology, and greater feelings of loneliness than either bullies or students not involved in bullying or victimization. Furthermore, victims, bullies, and bully-victims were less satisfied with their lives, and reported higher levels of stress when compared to the group of students not involved with bullying or victimization. O'Moore and Kirkham (2001) found, similarly, that both bullies and victims had lower levels of self-esteem and greater feelings of inadequacy with respect to behavior, intellect, physical appearance and popularity than peers of the same age who were not involved with bullying. Those identified as bully-victims were found to experience the lowest levels of self-esteem. Conversely, Pollastri, Cardemill, and O'Donnell (2010) found that only those not involved with bullying had higher self-esteem than pure bullies. Of four groups of students, pure bullies, pure victims, bully-victims, and noninvolved, boys reported higher self-esteem in all groups. Over time girls experienced an increase in self-esteem in the bully and bully-victim groups, while boys did not.

Looking at the characteristics of bullies and victims is useful in identifying students or groups of students who may be at greater risk for involvement. It is unclear if characteristics such as self-esteem, social status, or internalizing or externalizing behavior problems are what put students at greater risk for involvement in bullying or if these characteristics are the result of involvement with bullying. Given that students with learning disabilities experience social, emotional and behavioral problems, Mishna (2003) explored the risk of victimization for students with exceptionalities, hypothesizing that these students are at a greater risk for

victimization than students without disabilities. Estell et al. (2009) found that students with mild disabilities, including learning disabilities, mild mental retardation, and emotional and behavioral disorders were more likely to be rated by peers as being bullies and were more likely to be rated by teachers as being both victims of bullying and perpetrators of bullying, when compared to non-disabled peers. Conversely, White and Loeber (2008) did not find that special education placement predicted involvement with bullying. They found that early aggression was the strongest predictor of bullying behavior and later delinquency. Even so, students with exceptionalities face extraordinary hurdles with regard to risk for involvement in bullying, given the deficits in social problem solving skills of students with learning disabilities and mild intellectual disabilities (Forness & Kavale, 1996) and with emotional regulation and impulse control in students with behavioral disorders (Quinn, Kavale, Mathur, Rutherford Jr., & Forness, 1999).

Nansel et al. (2001) found that youth involved in bullying experience poorer psychosocial outcomes than noninvolved peers, based on analysis of self-report data from a sample of 15,686 students in grades 6 through 10. Youth who were the victims of bullies were found to have difficulty making friends and maintaining relationships. They also experienced greater degrees of loneliness. Those who bullied others were found to use alcohol and tobacco at higher rates and had lower levels of academic achievement. Those students who reported being both a bully and a victim may be at the greatest risk, experiencing both social and emotional difficulties as well as academic and behavioral problems.

Glew et al. (2005), in an analysis of self-report data from a sample of 3,530 elementary school students, found that the 22% of the sample involved in bullying, either as a bully, a victim, or as a bully-victim were more likely to feel unsafe at school. Victims and bully-victims

were more likely to experience low academic achievement. Bullies and victims reported feeling sad most days.

Kim et al. (2005) reported that bullies, victims, and bully-victims experienced higher rates of suicidal, self-injurious behavior and suicidal ideation based on self-report data from a sample of 1,718 middle school students in Seoul, South Korea. The bully-victim experienced the highest levels of suicidal behavior. Klomek et al. (2007) found that bullying and victimization are potential risk factors for depression and suicide. Based on self-report data from a sample of 2,341 students in grades 9 through 12 from throughout the state of New York, students involved in bullying either as a victim or a bully were at a higher risk for depression, serious suicidal ideation, and suicide attempts when compared to students not involved with bullying. In a later review of 31 studies of bullying and suicide Klomek et al. (2010) indicated that involvement in bullying was a significant risk factor for suicidal ideation and suicide attempts. This was found to be especially true for female victims of bullying as well as for male victims when other conduct problems were also experienced. Involvement in bullying may put students at risk for extremely negative outcomes. Students may benefit from intervention efforts that address academic and social skill deficits as well as emotional and mental health issues.

The various studies presented in this section illustrate attempts by researchers to understand the factors, which put young people at greater risk for involvement in bullying. It is unclear whether the risk for involvement in bullying and victimization may be increased due to issues with self-esteem and social status or if involvement in bullying leads to these changes. Social-skill deficits related to inherent learning and behavioral problems may put someone at greater risk for involvement due to a lack of social competence. Exposure to antisocial and aggressive behavioral models in the family or community has been linked to the development of

other forms of antisocial behavior and aggression (Loeber & Stouthamer-Loeber, 1998; Sampson, Raudenbush, & Earls, 1997). Typically, when discussing risk, exposure to multiple factors has an additive effect (Loeber, 1990), meaning that the more risk factors one is exposed to, the greater the chance of a negative outcome. Schools have a role to play in mitigating some risk factors for students, especially with regard to preventing victimization and teaching prosocial ways to interact with peers. In the following section, the limited body of research of risk factors and effects associated with involvement in cyberbullying are explored.

Characteristics, risk factors, and effects related to involvement in cyberbullying.

Given the relatively recent emergence of the phenomenon of cyberbullying, studies on its effects are limited. Tokunaga (2010) notes that in the short amount of time that cyberbullying has been a topic of interest, it is not surprising that more complex relationships between victimization and negative effects of cyberbullying have not been looked at. A limited number of research efforts have focused on the effects of cyberbullying on various subgroups (i.e., cyberbullies, cyber-victims, cyberbully-victims, and those not involved).

Hinduja and Patchin (2008) looked at cyberbullying in terms of the additional strain victimization placed on those who were targeted. Based on a sample of 680 male and 698 female respondents under the age of 18, it was found that 30% felt angry and 34% felt frustrated after being targeted. Cyber-victims were also more likely to report participating in problematic offline behaviors, such as underage drinking, cheating at school, and truancy. Mishna et al. (2010) reported similar findings, indicating youth felt angry (16%), embarrassed (8%), sad (7%), and scared (5%) after being victimized by cyberbullies.

Conversely, Sourander et al. (2010) reported that victims feared for their personal safety, only when they were harassed by someone who was unknown, an adult, or a group of people.

Being targeted by known peers was not associated with feelings of fear. Spears, Slee, Ownes, and Johnson (2009) found that victims of cyberbullying felt helpless, that cyberbullying evoked strong feelings of fear and concerns for personal safety, and that it disrupted personal relationships. Ortega et al. (2009) reported that victims felt a range of emotions including anger, fear, sadness, and shame, although the proportion who reported not feeling bothered by being targeted by cyberbullies was much greater (43.9%) than for victims of traditional bullying (23.4%), indicating that victims of cyberbullying may be able to ignore attempts by a cyberbully to cause harm, thereby avoiding the negative effects of victimization at a greater rate than victims of traditional face-to-face bullying.

Ybarra (2004) found that victims of cyberbullying displayed depressive symptomatology at a rate of 13.4% compared to non-victims, who displayed depressive symptomatology at a rate of only 4.6%, indicating that being victimized by cyberbullies was significantly correlated with depression. Conversely, Dempsey et al. (2009) found that cyber-victimization was not associated with depression and was only weakly associated with social anxiety. In another study Ybarra et al. (2007) found that those victimized by cyberbullies, especially those frequently targeted, engaged in problematic behaviors at school, such as truancy and bringing a weapon to school and were more likely to receive punishment in the form of detention and suspension.

Cyberbullying, while still involving direct forms of aggression such as threats, intimidation, and name-calling, is much more likely to involve indirect forms of harassment such as ignoring, gossiping and spreading rumors (Hinduja & Patchin, 2007; Patchin & Hinduja, 2006). Walker (2010) hypothesized that cyberbullying is essentially relational aggression that occurs online. Wolak et al. (2007) reported that if a known peer harassed a cyber-victim, the harassment was more likely to be indirect in nature and was more likely to be made available for

others to witness. Interestingly, while 48% of cyberbullying incidents reported in one study were initiated by an anonymous perpetrator (Kolwalski & Limber, 2007), Juvonen & Gross (2008) found that 73% of their respondents were 'pretty sure' or 'totally sure' of the identity of the anonymous perpetrator involved. Ybarra et al. (2006) reported similar findings, indicating that 45% of cyber-victims knew their harasser and that those who were bullied online were more likely to have significant social problems, to bully others online, and were more likely to have been victimized in traditional contexts when compared to youth not involved with cyberbullying.

The ability to remain anonymous is one of the key distinctions between traditional bullying and cyberbullying. Hinduja & Patchin (2007) hypothesized that victims of traditional bullying may seek retaliation, given the sense of anonymity, through cyberbullying. An anonymous perpetrator, besides having the ability to avoid disciplinary consequences, may be able to instill a greater level of fear or distress in a cyber-victim (Mishna et al., 2009). Even when the identity of the perpetrator was known, youth were hesitant to report incidents at school, because they may have been using a cell phone or visiting a website in violation of school rules (Agatson et al., 2007).

Victims of cyberbullying are not the only ones affected by involvement. Several correlational studies have looked at those who perpetrated cyberbullying. Ybarra and Mitchell (2004) found that those who targeted others online also endorsed aggressive behavior, engaged in other rule-breaking behaviors, victimized peers offline, and had poorer relationships with parents than those not involved with cyberbullying. Calvete, Orue, Estévez, Villardón, and Padilla (2010) found cyberbullying to be positively correlated with proactive aggressiveness, defined as goal-oriented aggression perpetrated without emotion and with beliefs that justified violence.

The ability to empathize is thought to reduce the likelihood of engaging in behaviors meant to harm others. Cognitive empathy is defined as the ability to understand the emotions of others; affective empathy is defined as the ability to experience those emotions. Ang and Goh (2010), using the Basic Empathy Scale, found that boys and girls with low scores on both the cognitive and affective dimensions of the scale had higher scores on a scale measuring cyberbullying, suggesting that those who have less of an ability to understand or experience the emotions of others are more likely to engage in behaviors that could potentially cause harm or distress to others.

Pornari and Wood (2010) suggested that moral disengagement, defined as a process by which people justify harmful or aggressive acts directed at others, was positively associated with participation in cyber and traditional forms of aggression, indicating that those who engaged in greater levels of peer victimization were rated as having higher levels of moral disengagement. Sourander et al. (2010) found that cyberbullies and cyberbully-victims showed greater levels of hyperactivity, emotional problems, conduct problems, and problems with peers than either those students not involved with cyberbullying or with cyber-victims. Furthermore, cyberbullies and cyberbully-victims used alcohol and tobacco at higher rates when compared to cyber-victims and those not involved in cyberbullying.

Using logistic regression analysis Juvonen and Gross (2008) found that the best predictors for involvement with cyberbullying were heavy Internet use, experience with bullying at school, use of instant messaging (IM) technology, and use of a Webcam. Vandebosch and Van Cleemput (2009) found cyberbullying to increase with age and found parental supervision of Internet activities was negatively correlated to involvement with cyberbullying. Twyman et al., (2010) found that students who had email accounts, which were inaccessible to parents or who

maintained a social networking site profile were more likely to be cyberbullies or cyber-victims. Mesch (2009) also found the use of social networking sites to put students at greater risk for victimization. The increasingly pervasive nature of these sites and the ease with which information can be shared through portals such as Facebook and Twitter may be transforming the nature of cyberbullying.

Although limited in number, there is little agreement among studies, which have compared involvement in cyberbullying to involvement with traditional forms of bullying. Raskauskas & Stoltz (2007) found that involvement in traditional bullying predicted similar involvement in cyberbullying, with 85% of those who identified themselves as victims in cyberspace also self-identifying as victims of traditional bullying and 94% of cyberbullies indicating that they were bullies in traditional settings. Conversely, Ybarra et al. (2007) found that 64% of young people who were harassed online were not bullied at school, although those who were harassed both online and at school were more likely to report distress. Wang et al. (2009) reported that, among sixth through tenth grade students, boys were more likely to be cyberbullies whereas girls were more likely to be cyber-victims. Law, Shapka, Hymel, Olson, and Waterhouse (2012) found that students differentiated between the roles of bully and victim with respect to traditional bullying, but not so with cyberbullying, indicating that, with cyberbullying, the participant roles may be much more fluid. The authors hypothesized that in a cyber-setting, a victim may feel much more comfortable retaliating against aggressive behavior, given the relative safety compared to a physical environment. The willingness to retaliate and reciprocate aggressive behaviors blurs the roles of bully and victim.

Several studies have found a significant portion of the population who reported no ill effects after being targeted by cyberbullies (Mishna et al., 2010; Ortega et al., 2009). These

students may have the social competency skills to ignore or shrug off attempts by a cyberbully to affect a negative response. Cyberbullying may be more devastating to those students who are at risk for other academic, social, emotional, or behavioral problems (Didden et al. 2009; Hinduja & Patchin, 2008; Sourander et al. 2010; Ybarra, 2004; Ybarra, et al., 2006).

Indirect forms of bullying are often associated with aggression involving girls. Overall, boys are more involved in traditional forms of direct verbal and physical bullying (Olweus, 1993). Much of the current research indicates that girls, more so than boys, feel cyberbullying is a problem (Agatston et al., 2007) and that girls are at least as equally involved, if not more so, than boys in cyberbullying (Ang & Goh, 2010; Dempsey et al., 2009; Hinduja & Patchin, 2007; Mesch, 2009; Mishna et al., 2010; Ortega et al., 2009; Pornari & Wood, 2010; Wang et al., 2009; Werner, Bumpus, & Rock, 2010).

As evidenced by these studies, there does not appear to be clear and consistent risk factors or outcomes for those involved with cyberbullying. Some students may experience psychosocial difficulties as a result of being targeted online (Spears et al., 2009; Ybarra, 2004), while others may be able to slough off rude comments, choosing not to engage with cyberbullies (Ortega et al., 2009; Sourander et al, 2010). Students may be predisposed to victimization due to learning and behavioral problems and a lack of social problem solving skills (Didden et al., 2009; Ybarra et al., 2007). The research literature on school-based bullying and cyberbullying interventions are reviewed in the following sections.

Bullying intervention efforts.

Schools have a history of implementing academic and behavioral programs with little or no empirical support (Van Acker, 2006). Programs that seem conceptually sound or appear practical may have little or no effect, or worse, may actually exacerbate a problem. In an address

to the National Board for Education Sciences, John Easton, Director of the Institute of Education Sciences said:

> You know, schools are inundated with salespeople who are selling things, some of which have a good evidence base, a lot of which do not. But the tendency is to think we can solve our problems by buying programs. And I don't think that's right, and I don't think that's the way school improvement occurs (Easton, 2009, p. 5).

Ryan and Smith (2009) reviewed the evaluation procedures for 31 anti-bullying programs, including classroom based and school-wide interventions, implemented within the past ten years and found that all of the programs were being implemented without a rigorous or comprehensive evaluation component. Smith, Ananiadou, and Cowie (2003) reported that evaluating antibullying research is problematized without consistent outcome measures.

In a comprehensive review of bullying interventions, Vreeman and Carroll (2007) found that whole school multidisciplinary interventions were more successful in reducing bullying and victimization than interventions which relied on a classroom based curricula, with a limited number of sessions or lessons, or targeted social skills groups, which were conducted with students involved with bullying. A concern about targeted programs designed to address the needs of youth with antisocial behavioral problems is that they may in fact make things worse by grouping deviant students together (Dodge, Lansford, & Dishion, 2006).

Smith, Schneider, Smith, and Ananiadou (2004) in a review of research of whole school approaches, based on the work of Olweus, found that programs were implemented in a variety of

ways with inconsistent results. "The dramatic success of the Olweus program in Norway has not been replicated elsewhere" (p. 557). Of primary concern was not whether school antibullying programs based on the work of Olweus were effective, but that these programs were susceptible to failure without implementation of the intervention with fidelity to established procedures and guidelines.

In a study of teachers' perceptions of the effects of an anti-bullying program based on the work of Olweus (1993), Edmondson and Hoover (2008) reported positive changes in individual student behavior, although the nature of those changes was not specified. These results were based on the reflections of educators and are not linked to actual occurrences of bullying or aggressive behavior in schools.

A preliminary study of an intervention, which targeted the bystander and overall school climate, rather than the bully or the victim (Fonagy et al. 2009), reduced incidents of bullying and other measures of aggression compared to a treatment condition of school psychiatric consultation and a control group, which received no treatment. While the results appear promising, the program seems to rely on unconventional methods, including martial arts self-defense instruction, group dynamics exercises which target the bystander, and the development of empathy through mentalization. As with other research efforts, the results are based on the self-reports of students along with twice-yearly observations and are not tied to actual reports concerning school disciplinary infractions. In fact, teachers were required to reduce disciplinary referrals, confounding the possibility of a measure of the program's effectiveness outside of the self-report data. One interesting effect of the program was the increase in helpful bystander behavior during the second year of the study in the control group who did not receive the

intervention, indicating that the overall climate of the school had been improved by the intervention efforts targeting a specific group of students.

Baldry and Farrington (2004) found that a short-term, curriculum-based intervention which involved role-playing, videos, and discussion groups was successful in reducing bullying among older students, aged 14 to 16 years old, but actually increased bullying with younger students, aged 11 to 13 years old. Smith et al. (2004) observed that antibullying programs raise awareness of the phenomenon and may actually cause students to report bullying and victimization at a higher rate because of the increased awareness provoked by a program meant to reduce bullying.

Schools may be allocating precious resources for programs that claim to reduce bullying, but that in fact may be ineffective, or worse, may actually exacerbate the problem of bullying in schools. Without an emphasis on program evaluation our knowledge of the effectiveness of anti-bullying programs and efforts to prevent aggressive behaviors is incomplete. Without tying program effectiveness to actual occurrences of bullying and victimization or some common metric it will be difficult to assert with any degree of confidence that an intervention has been successful. Although no empirical studies of cyberbullying interventions have been reported, a number of programs have been developed recently, some based on intervention programs meant to address traditional forms of bullying. These programs are presented in the following section.

Cyberbullying interventions.

The primary method of ensuring student safety at school is through supervision. Bullies tend to act in secrecy, avoiding detection by school authorities (Farrington, 1993; Olweus, 1993). Cyber environments are ideal for bullies because they are difficult for school officials to monitor. Cyberbullies, unafraid of detection, may act with impunity. An Internet search using the terms

"cyberbullying" and "curriculum" revealed several programs designed to address cyberbullying in schools. Examples include the *CyberSmart! Cyberbullying Curriculum* (Common Sense Media, 2010), which is a free resource with grade-level student activities, available online. The *iSAFE Internet Safety Program* (i-SAFE Inc., 1998, 2009) is a subscription-based, prevention curriculum for students in grades K-12. *Cyber Bullying: A Prevention Curriculum* (Limber, Kowalski, & Agatston, 2008, 2009) is an eight-session school-wide curriculum, which provides handouts and parental information to address cyberbullying and to teach students to use technology responsibly. *Sticks and Stones* (Chase Wilson, 2009) is a film about cyberbullying, which is accompanied by resource materials for the classroom teacher. The film and materials were developed by the Bergen County Prosecutor's office in New Jersey in response to an increase in computer-related crime. *Cyberbullying: Understanding and Addressing Online Cruelty* (Anti-Defamation League, 2010) provides free online materials for teachers along with lessons for elementary, middle, and secondary school students. In general, these programs seek to educate students about the dangers of online communication while providing tips and strategies for protecting oneself.

A search of various educational and social science databases including Academic Search Premier, the Educational Resources Information Center (ERIC), Science Direct, the Social Sciences Citation Index, and the Web of Science yielded a number of peer reviewed articles concerning cyberbullying. Several articles provided advice for schools, parents, and students (e.g. Beale & Hall, 2007), although no articles were found which reported on an empirical evaluation of any of the cyberbullying programs listed above, nor of any other cyberbullying prevention programs. As with traditional anti-bullying programs, our knowledge of the effectiveness of programs designed to curb cyberbullying is incomplete. There is no lack of free

and modestly priced intervention efforts. Unfortunately, none of these programs have been empirically validated or shown to be effective in reducing the incidence of cyberbullying. In the following section a brief review of research on principal leadership and discipline is presented.

Principal Leadership and Student Discipline

Although schools as organizations contain a number of professionals who exercise decision-making authority over various aspects of the day-to-day operation of a school, the building principal is the person regarded as "the one person in a school who has the most opportunity to exercise leadership" (Gurr et al., 2006, p. 371). School leadership may include making determinations about how to respond to student misbehavior and disciplinary infractions.

Zero tolerance policies for certain forms of student misbehavior emerged in the late 1980s, emulating federal drug enforcement policies, in response to fears about increases in student drug use and violence (Skiba & Petersen, 1999). Gottfredson and Gottfredson (2001) found that principals commonly employ punitive discipline, in the form of suspension and expulsion, for infractions ranging from truancy or use of profane language to carrying a weapon. Skiba and Petersen (1999) found that students were often suspended for minor rules violations, such as disobedience or tardiness, where student safety was not a concern. Bowditch (1993) found that students who had frequent disciplinary problems experienced a feeling of alienation from a school and were more likely to eventually drop out. Noguera (1995) hypothesized that school officials may prefer the "get-tough" approach because it can send a message to students and parents, but not because the suspension or expulsion has proven successful in reducing student violence or aggression.

In general, although a significant percentage of school officials reported using manualized programs to proactively address behavior issues, Gottfredson and Gottfredson (2001)

found that principals used a narrow range of responses to address student misbehavior and that those responses were not consistent. Morrison and Skiba (2001) argued that the use of suspension and expulsion exacerbates the development of behavioral problems by removing students from supervision at school and encouraging the association with deviant peers off of school grounds.

A school principal can dramatically affect aspects of the school organization such as the culture and climate of a school (Krüger, 2009). The building principal is the one person in a school most responsible for exercising leadership (Gurr et al., 2006). Although, as previously reviewed here, there are a number of school wide approaches to bullying prevention, these types of proactive programs are not universally used in schools (Gottfredson & Gottfredson, 2001). The use of suspension and expulsion to send a message to students about undesirable behavior has not proven effective in reducing violence or aggression (Noguera, 1995; Skiba & Petersen, 1999). It will be useful to know if school officials are responding to the problem of cyberbullying with more punitive forms of discipline, such as suspension or expulsion, or if alternate approaches are selected, which are less exclusionary.

Research Problem

After considering the literature a number of questions, gaps of information, are apparent. Although incomplete, there is a theoretical linkage between traditional bullying and cyberbullying. There is some evidence that those involved in traditional forms of bullying are also involved in cyberbullying (Raskauskas and Stoltz, 2007). Researchers have looked at the venues (chat rooms, email, social networking sites, text messages) students utilize to bully one another using electronic means (Calvete et al., 2010; Kowalski & Limber, 2007). Students have been asked to name troublesome Internet and cell phone experiences (Gross, 2004; Mitchell et

al., 2005). Studies have sought to quantify what proportion of school aged youth engage in cyberbullying, have been the victims of cyberbullies, and have been both a bully and a victim in cyber environments (Juvonen & Gross, 2008; Kowalski & Limber, 2007; Slonje & Smith, 2008). What is missing from the empirical research literature are studies which seek to clarify how school officials view the problem of cyberbullying and how prevention, intervention, and disciplinary programs are being implemented in response to the threat that engaging in cyberbullying poses to victims as well as cyberbullies.

School officials, like similar types of street-level bureaucrats, enjoy relative autonomy and discretion in managing the day-to-day operations of a school (Lipsky, 1980). These officials must interpret state and school district policies in addressing problem behaviors, including all types of bullying, within their local contexts. Even though a policy may be the same through an entire state, street-level bureaucrats must differentiate the implementation of that policy, based on the needs of the clients they serve (Lipsky, 1980). Addressing bullying presents a challenge to educators. Definitions of bullying vary, as do approaches to prevention and intervention (Guerin & Hennessy, 2002; Ross & Horner, 2009). Technology usage in schools continues to evolve (Oppenheimer, 2003), as do the ways in which cyberbullies take advantage of technology to target their victims (e.g., Kowalksi & Limber, 2007; Mishna et al., 2009).

Much of the research presented seeks to raise the alarm bell so that school officials will recognize the scope and potentially devastating outcomes of cyberbullying. Several gaps in the research literature are apparent. Given the mixed results reported about the effectiveness of bullying prevention programs (Bauer, Lozano, and Rivara, 2007; Vreeman and Carroll, 2007) it is important to find out to what extent anti-cyberbullying programs are used in schools. Although this will not provide an assessment of program effectiveness it will help us understand which

programs are being implemented and what percentage of schools address bullying through a curriculum. It will also begin to establish a framework for understanding how schools are addressing cyberbullying. With new information, which helps us understand how school officials perceive cyberbullying and how schools are trying to educate students about cyberbullying, this research effort can help build an empirical literature base on the role school officials are taking in addressing cyberbullying. Since school officials are ultimately responsible for determining what is and isn't cyberbullying, it is important to understand whether there is agreement in how administrators interpret particular instances of problematic Internet communications. Along with intervention programs schools routinely use disciplinary measures as a primary method of prevention of problematic behaviors (Gottfredson & Gottfredson, 2001). Understanding which disciplinary measures school officials use to address cyberbullying will also be useful.

Interestingly, of all of the research articles identified during the literature search, not a single study looked at cyberbullying from the perspective of those who must implement state legal mandates and provide safe educational environments to students. It is important to understand how those who work with students and must manage the school organization understand the issue and are confronting the problem of cyberbullying.

III. Methods

Research Design

To better understand how schools are responding to cyberbullying a representative random sample of regular public school officials (N = 2,011) from the Midwestern region of the United States (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin) were invited to participate in a mixed-mode survey called the School Survey of Cyberbullying (SSOC). The survey data provide a snapshot of how

school officials have confronted the issue of cyberbullying and allow for comparisons between respondents based on gender and school grade level.

The survey was comprised of 53 questions and had four sections including, school and respondent characteristics, policies and practices in administering technology, a section where respondents indicate the degree to whether or not they thought a described incident constituted cyberbullying, and a section where respondents provided a typical disciplinary response to different incidents of cyberbullying.

The SSOC was a mixed-mode instrument, meaning respondents were given a choice of either completing the survey via a web-based survey site or completing a paper-and-pencil survey and then mailing it back to the principal investigator. Sample subjects were contacted first through a letter of introduction, delivered by the U.S. Postal Service (USPS) first and then by email. Next the survey was sent out, first by email and then the following week by the USPS. A reminder email was sent out approximately two weeks after the USPS mailing. Finally, a thank-you card was sent out by the USPS, with another reminder to complete the survey. An emailed version of the thank you card was also sent at the same time.

Sample

A sample of (N = 2,257) public schools in the Midwestern United States was drawn from the National Center for Education Statistics (NCES) Common Core of Data (CCD) Public Elementary/Secondary School Universe Survey: School Year 2008 - 09 (2011). This database contains information submitted annually to the NCES by state education agencies. The stated purpose of the CCD is to provide a listing of all schools and agencies, which provide free public elementary and secondary education. The 2008 - 09 data set contains information on approximately 104,000 schools in the United States, Puerto Rico, and other territories, including

Department of Defense schools and schools under the Bureau of Indian Education. Cases (school listings) were eliminated from the data set if they did not meet certain criteria. Schools not located in the Midwestern United States, were eliminated, as were schools not listed as operational at the time of data collection.

The edited dataset of operational schools in the Midwest contained 26,545 cases, or approximately 25.6% of the schools in the entire CCD 2008 - 09 dataset. A random sample (N = 2,257) of schools was selected from this population (see TABLE I. SAMPLE STATE INFORMATION).

TABLE I. SAMPLE STATE INFORMATION

State	Frequency	Percentage %
Iowa	142	6.3
Illinois	359	15.9
Indiana	176	7.8
Kansas	125	5.5
Michigan	338	15.0
Minnesota	196	8.7
Missouri	204	9.0
North Dakota	45	2.0
Nebraska	94	4.2
Ohio	318	14.1
South Dakota	65	2.9
Wisconsin	195	8.6
Total	**2,257**	**100.0**

One sample t-tests (critical t-value = 1.96, p = .05) were used to compare sample school data to the population data on 28 different variables, including total number of students eligible for free or reduced price lunch, total number of students at each grade level (pk – 12), total number of students by race and gender at each grade level, and the calculated pupil to teacher ratio. No significant differences in means between the sample and the population were found.

After the initial sample (N = 2,257) of elementary, middle, secondary, and other schools was identified (see TABLE II. SAMPLE SCHOOL LEVEL), the principal investigator, along with three research assistants, began the process of identifying the building principal and email address for each school. This information was not contained within the CCD.

TABLE II. SAMPLE SCHOOL LEVEL

School Level	Frequency	Percentage %
Primary (low grade: PK – 3rd, high grade: PK – 8th)	1192	52.8
Middle (low grade : 4th – 7th, high grade: 4th – 9th)	405	17.9
Secondary (low grade: 7th – 12th, high grade: 12th only)	519	23
Other (any configuration not falling within the above three categories)	141	6.2
Total	**2257**	**100%**

A number of sources were used to identify building principal information, including data available from state departments of education websites, individual school websites, and in the case of Wisconsin, a printed directory. While identifying the building principal, mailing addresses obtained through the dataset were also verified. In identifying building principals it was discovered that 239 cases from the sample were invalid, either because the school had closed, because the original school identified in the sampling procedure had been consolidated with other schools, or because the record represented an administrative unit and not an actual school with students. Charter schools, which were included in the sample, seemed to cease operation more frequently than traditional public schools. It also seemed more difficult to obtain information from charter school websites. Very often a website for a particular charter school would not contain any information about faculty or staff, and addresses provided through charter school websites were for the corporate headquarters, as opposed to actual school addresses.

After eliminating the 239 invalid cases from the sample, the final sample of 2,011 operational public schools in the Midwestern United States were assigned a five-digit code number. These code numbers contained information on school level and school locale, based on the based on the urban-centric locale assignment system (Chen, 2010). Sample subjects were first contacted with a pre-notice letter (see APPENDIX A. PRE-NOTICE LETTER). Pre-notice letters have been recommended to increase survey response rates (Dillman, Smyth, & Christian 2009). The purpose of the pre-notice letter was to alert building principals to the arrival of the survey to be delivered by the USPS, to provide contact information for the principal investigator, and to provide potential respondents with a web address to complete the survey electronically. Pre-notice letters were mailed in May 2011.

One week after the mailing of the pre-notice letter, building principals were contacted by email. The email contained a cover letter (see APPENDIX B. COVER LETTER.), along with a five-digit code individualized for each school, and a hyperlink to the electronic survey. Survey respondents who completed the electronic survey before mailing of the paper-and-pencil survey were removed from the mailing list to avoid duplicate responses.

One week after emails were sent to building principals, the paper-and-pencil survey was sent by USPS to those sample subjects who had not yet responded to survey invitations contained within the pre-notice letter or the email cover letter. The paper-and-pencil survey mailing contained a cover letter and the survey instrument.

Two weeks after the survey instrument mailing, those building principals who had not yet responded were again contacted with a reminder email, which contained a hyperlink to the survey instrument. Shortly after the second email was sent, a thank you card (see APPENDIX C. THANK YOU CARD.) was sent with another reminder to complete the survey. A final email reminding sample subjects to complete the survey was sent shortly after the thank you card mailing.

Participants

A total of 460 respondents completed the School Survey on Cyberbullying (SSOC; See Appendix D. SCHOOL SURVEY ON CYBERBULLYING). Based on the sample of 2,011 schools, this response rate is 22.87%. Forty-six pieces of mail were returned because addresses were no longer valid and 279 emails were also returned as undeliverable. Removing these schools and school officials from the sample effectively reduced the viable sample size to 1,686, which in turn increased the response rate to 27.28%. Of the 460 completed surveys, 336 (73%)

respondents completed the electronic version and 125 (27%) respondents completed the paper-and-pencil survey.

Eighty-five point seven percent (85.7%) of respondents were building principals. Assistant principals accounted for 5.2% of respondents. School counselors made up 3.5% of respondents. The remaining 5% of respondents included school social workers and other school faculty and staff (see TABLE III. RESPONDENT JOB CHARACTERISTICS.). Female subjects represented 44.5% of the valid responses. On average respondents had served in their current roles for 6.53 years, although almost 60% of respondents have served in their current roles for five or fewer years and almost 30% of respondents have served in their current roles for two or fewer years.

TABLE III. RESPONDENT JOB CHARACTERISTICS.

Role	Frequency	Percentage (%)
Principal	394	85.7
Assistant Principal	24	5.2
Disciplinarian	3	0.7
School Counselor	16	3.5
Other (school social workers, other school faculty and staff)	24	5.2
Total	**460**	**100%**

Elementary school officials comprised 37.5% (n = 173) of all respondents. Based on CCD guidelines (Chen, 2010), an elementary school is any school with a low grade of pre-kindergarten though grade three and a high grade between pre-kindergarten and grade eight.

Middle school officials comprised 21% (n = 97) of all respondents. A middle school is any

school with a low grade of grade four through grade seven and a high grade of grade four

through grade nine. Secondary school officials comprised 29.3% (n = 135) of all respondents.

Secondary school is any school with a low grade of grade seven through grade twelve and a high

grade of grade twelve only. Other school officials comprised 11.5% (53) of all respondents. A

school in the other category either does not fit into one of the above listed configurations or is

ungraded (see TABLE IV. RESPONDENT SCHOOL INFORMATION). Eighty-five percent

(85%) of the schools in the "other" category had a low grade of either pre-kindergarten,

kindergarten, or first grade and 98.1% of the schools in this category had a high of twelfth grade.

Thirty-three point nine percent (33.9%) of schools in the "other" category were from Iowa,

Nebraska, and South Dakota, while overall only 11.5% of the respondent schools came from

these states.

TABLE IV. RESPONDENT SCHOOL INFORMATION.

School Level	Frequency	Percentage %
Primary (low: PK – 3rd, high: PK – 8th)	173	37.6
Middle (low: 4th – 7th, high: 4th – 9th)	97	21.1
Secondary (low: 7th – 12th, high: 12th only)	135	29.3
Other (any configuration not falling within the above three categories)	53	11.5
Missing	2	.4
Total	**460**	**100%**

There are several notable differences between the sample population and respondents to the SSOC. The sample, which reflects both the populations of Midwest and national public schools, contains 6.2% of schools classified as other (the national population contains 7.9% and the Midwest population contains 6.7% of schools classified as "other"). The category of other schools represents 11.5% of respondents. Elementary schools represent 52.8% of the sample (52.8% of the national population and 53.3% of the Midwest population), but only 37.8% of respondents. Middle schools represent 21% of respondents, but only 18.4% of the sample (16.4% of the national population and 16.6% of the Midwest population). Secondary schools represent 29.3% of respondents, but only 22.8% of the sample (19.9% of the national population and 23.4% of the Midwest population). A chi-square test revealed that differences between the sample and the respondents in terms of school level, were significant, $\chi^2 = 41.033$, df = 3, p < .001, Cramer's V = .123. Potential reasons for the differences between the sample and the respondents will be explored in the discussion section.

Measures

Demographic variables.

Section one of the survey asked respondents to report personal information such as role in the school, years of experience, and gender. Information on school characteristics was also solicited, including information about school level, school size, percentage of students eligible for free or reduced price lunch, and percentage of students of color.

Methods of prevention and intervention.

Section two of the survey asked respondents for information on school policies and practices related to the management of technology, antibullying interventions, communication

with parents, and the reported occurrences of bullying and cell phone violations. Research question one is addressed by information gathered from this section of the survey.

Interpretation of incidents as cyberbullying.

Section three of the survey asked respondents indicate a level of agreement as to whether an incident represented an example of cyberbullying. Twelve vignettes were presented which were constructed with different bullies (male, female, groups of students), different victims (male, female, groups of students, teacher/school official), different forms of technology (email, text message, social networking site), and different forms of harassment. The vignettes were meant to represent examples and non-examples of cyberbullying, based on various descriptions obtained from the research literature. Research question two is addressed by information gathered from this section of the survey.

Disciplinary response choice to incidents of cyberbullying.

Section four of the survey asked respondents to provide a typical disciplinary response to various examples of cyberbullying. As with section three of the survey, vignettes were constructed with different bully characteristics, different victim characteristics, different forms of technology, and different forms of harassment. All vignettes were meant to represent examples of cyberbullying. Research question three is addressed by information gathered from this section of the survey.

IV. Results

The results of the survey have been broken down into three sections for the three research questions. Each section is focused on an analysis of an individual research question, which were presented in the introduction of this thesis. In section one, in response to research question one, data were analyzed to explore prevention and intervention methods used by school officials to

address cyberbullying and to see if significant differences, based on school level and other variables of interest, could be found. In section two, in response to research question two, data were analyzed to determine whether a unidimensional construct of cyberbullying could be supported, how school officials defined cyberbullying based on interpretations of vignettes, and whether significant differences, based on school level and other variables of interest, could be found in response to different vignettes portraying problematic Internet and cell phone interactions. In section three, in response to research question three, data were analyzed to see if separate latent classes or subgroups of respondents could be identified and also if there were significant differences, based on school level and other variables of interest, could be found in providing a typical disciplinary response to various incidents of cyberbullying.

Research Question One: Methods to Prevent Cyberbullying

Results of responses to questions about the management of technology and policies and practices to prevent cyberbullying in schools are presented in TABLE V. RESEARCH QUESTION ONE: METHODS OF PREVENTION AND INTERVENTION. Important findings include the fact that 44.3% of respondents indicated that they do not have a staff member dedicated to technology support and instruction. Also, 63.9% of respondents indicated that they do not use a specific curriculum in their schools to prevent bullying or cyberbullying. Finally, 69.8% of respondents indicated that they have found students attempting to circumvent filtering or blocking software meant to protect students from inappropriate content available on the Internet. It is also critical to note that school officials indicated, on average, that 3.9 instances of bullying had occurred in the past month in their school and 1.3 instances of cyberbullying had occurred in the past month. Interestingly, 24.2% of respondents indicated that there had been no

instances of bullying and 50.2% of respondents indicated that there had been no instances of

cyberbullying in their school in the past month.

TABLE V. RESEARCH QUESTION ONE:
METHODS OF PREVENTION AND INTERVENTION

Survey Question	N	% Yes	% No
10. Does the school have a separate student computer laboratory?	454	91.6	8.4
11. Do computers in the school's computer laboratory have Internet access?	447	97.8	2.2
12. Do most classrooms have a computer with Internet access available for student use?	454	78	22
13. Are students provided an email account through the school or school district?	454	31.5	68.5
14. Is there a full-time staff member at the school whose only responsibilities are technology support and/or instructional use of technology?	454	55.7	44.3
16. Are students blocked from visiting social networking sites, such as Facebook, when using school computers?	449	95.3	4.7
17. Are students allowed to access outside email accounts from school computers?	452	22.3	77.7
18. Have school personnel found students attempting to get around the school's blocking or filtering software by using proxy websites or other forbidden methods?	454	69.8	30.2
19. Are students taught appropriate Internet usage in your school's technology program?	454	94.1	5.9
20. Does your school use a curriculum, which specifically addresses bullying, including cyberbullying?	451	36.1	63.9
22. Does your school allow students to possess cell phones while on campus?	453	69.5	30.5
23. Are there areas of the school (locker rooms, rest rooms, classrooms, etc.) where student possession of cell phones is restricted or prohibited?	442	83	17
24. Does your school have specific rules prohibiting student cell phone use at school?	449	97.8	2.2
26. Has your school communicated with parents either in writing or during formal meetings about policies regarding student cell phone possession and use at school?	451	97.6	2.4
29. Has your school communicated with parents either in writing or during formal meetings about school policies regarding bullying, including cyberbullying.	442	90.5	9.5

Data were also analyzed to explore relationships between school level and methods to address cyberbullying to see if statistically significant differences exist between groups of respondents from primary, elementary, and secondary schools. Additionally, the variable respondent gender was also analyzed to see if significant differences could be found in methods used to prevent cyberbullying.

TABLE VI. RESEARCH QUESTION ONE: DIFFERENCES BY SCHOOL LEVEL contains the questions from section two of the survey, the number of respondents from each school level, the number of either yes or no responses to the survey questions, the expected number of those responses, and the test statistics. The Pearson Chi-Square statistic (χ^2) is reported, along with the degrees of freedom (df), and the p-value. The possibility that chance explains those differences must be equal to or less than 5% (p-value ≤ 0.05). Effect-size is only reported when $p \leq 0.05$. If a table has only four cells (two variables by two variables) the Phi statistic (Φ) is reported. If a table has more than four cells, Cramer's V (Φ_c) is reported. Effect-size scores may range between 0 and 1, with scores closer to 0 indicating a weaker relationship and scores closer to 1 indicating a stronger relationship (Connolly, 2007). In the following section significant differences on survey items between elementary, secondary, and other school respondents are summarized.

Variable: School level.

There were sixteen questions, which produced nominal data that were analyzed from section two of the survey in response to research question one. Research question one asked about the procedures school officials employ to manage technology and prevent cyberbullying. Significant differences were found in the responses from elementary, middle, and secondary school officials on seven out of the sixteen questions.

TABLE VI. RESEARCH QUESTION ONE:
DIFFERENCES BY SCHOOL LEVEL

Survey Question	Elementary	Middle	Secondary	Other	Test Stats
10. Does the school have a separate student computer laboratory?	n = 172 Yes – 153 Expected – 157.6	n = 96 Yes – 93 Expected – 88	n = 134 Yes – 124 Expected – 122.8	n = 52 Yes – 46 Expected – 47.6	χ^2 = 5.875 df = 3 p = .118
11. Do computers in the school's computer laboratory have Internet access?	n = 170 Yes – 163 Expected – 166.2	n = 94 Yes – 93 Expected – 91.9	n = 133 Yes – 131 Expected - 130	n = 50 Yes – 50 Expected – 48.9	χ^2 = 4.812 df = 3 p = .186
12. Do most classrooms have a computer with Internet access available for student use?	n = 172 Yes – 152 Expected – 134.1	n = 96 Yes – 72 Expected – 74.9	n = 134 Yes – 89 Expected – 104.5	n = 52 Yes – 41 Expected – 40.5	χ^2 = 21.765 df = 3 p < .001 *** Φ_c = .219
13. Are students provided an email account through the school or school district?	n = 171 No – 132 Expected – 117.1	n = 96 No – 66 Expected – 65.8	n = 135 No – 83 Expected – 92.5	n = 52 No – 30 Expected – 35.6	χ^2 = 11.889 df = 3 p = .008 *** Φ_c = .162
14. Is there a full-time staff member at the school whose only responsibilities are technology support and/or instructional use of technology?	n = 171 Yes – 71 Expected – 95.3	n = 96 Yes – 60 Expected – 53.5	n = 135 Yes – 92 Expected – 75.2	n = 52 Yes – 30 Expected - 29	χ^2 = 24.297 df = 3 p < .001 *** Φ_c = .231
15. Does a school staff member have the ability to access and monitor student email communication that occurs through the school or district email system?	n = 50 Yes – 19 Expected - 27	n = 22 Yes – 15 Expected – 11.9	n = 37 Yes – 25 Expected - 20	n = 13 Yes – 7 Expected - 7	χ^2 = 10.533 df = 3 p = .104
16. Are students blocked from visiting social networking sites, such as Facebook, when using school computers?	n = 168 Yes – 161 Expected – 160.1	n = 94 Yes – 93 Expected – 89.6	n = 135 Yes – 124 Expected – 128.7	n = 52 Yes – 50 Expected – 49.6	χ^2 = 6.580 df = 3 p = .087
17. Are students allowed to access outside email accounts from school computers?	n = 169 No – 147 Expected – 131.2	n = 96 No – 68 Expected – 74.5	n = 135 No – 97 Expected – 104.8	n = 52 No – 39 Expected – 40.4	χ^2 = 13.879 df = 3 p = .003 *** Φ_c = .175
18. Have school personnel found students attempting to get around the school's blocking or filtering software by using proxy websites or other forbidden methods?	n = 171 Yes – 63 Expected – 119.4	n = 96 Yes – 81 Expected - 67	n = 135 Yes – 129 Expected – 94.3	n = 52 Yes – 44 Expected – 36.3	χ^2 = 145.752 df = 3 p < .001 *** Φ_c = .567
19. Are students taught appropriate Internet usage in your school's technology program?	n = 171 Yes – 161 Expected – 160.8	n = 96 Yes – 92 Expected – 90.3	n = 135 Yes – 125 Expected - 127	n = 52 Yes – 49 Expected – 48.9	χ^2 = 1.065 df = 3 p = .786
20. Does your school use a curriculum, which specifically addresses bullying, including cyberbullying?	n = 170 No – 101 Expected – 108.6	n = 95 No – 52 Expected – 60.7	n = 134 No – 101 Expected – 85.6	n = 52 No – 34 Expected – 33.2	χ^2 = 12.632 df = 3 p = .006 *** Φ_c = .167
22. Does your school allow students to possess cell telephones while on campus?	n = 171 Yes – 87 Expected – 118.9	n = 95 Yes – 76 Expected – 66.1	n = 135 Yes – 116 Expected – 93.9	n = 52 Yes – 36 Expected – 36.2	χ^2 = 50.137 df = 3 p < .001 *** Φ_c = .333
23. Are there areas of the school (locker rooms, rest rooms, classrooms, etc.) where student possession of cell phones is restricted or prohibited?	n = 163 Yes – 136 Expected – 135.3	n = 95 Yes – 82 Expected – 78.9	n = 134 Yes – 106 Expected – 111.3	n = 50 Yes – 43 Expected – 41.5	χ^2 = 2.526 df = 3 p = .471
24. Does your school have specific rules prohibiting student cell phone use at school?	n = 169 Yes – 167 Expected – 165.2	n = 94 Yes – 94 Expected – 91.9	n = 135 Yes – 128 Expected - 132	n = 51 Yes – 50 Expected – 49.9	χ^2 = 8.428 df = 3 p = .038 *** Φ_c = .137
26. Has your school communicated with parents either in writing or during formal meetings about policies regarding student cell phone possession and use at school?	n = 170 Yes – 166 Expected – 165.9	n = 95 Yes – 93 Expected – 92.7	n = 134 Yes – 131 Expected – 130.7	n = 52 Yes – 50 Expected – 50.7	χ^2 = .505 df = 3 p = .918
29. Has your school communicated with parents either in writing or during formal meetings about school policies regarding bullying, including cyberbullying.	n = 165 Yes – 148 Expected – 149.3	n = 94 Yes – 89 Expected – 85.1	n = 132 Yes – 119 Expected – 119.5	n = 51 Yes – 44 Expected – 46.2	χ^2 = 3.112 df = 3 p = .375

Elementary school officials were much more likely to report the availability of student computers with Internet access in classrooms compared to secondary school officials. Elementary and middle school officials were also more likely to report using an anti-bullying curriculum compared to secondary school officials.

Secondary school officials were more likely to report that students were provided with an email account by the school or district and, along with middle school officials, were also more likely to report having a full-time staff member dedicated to technology instruction compared to elementary school officials. Middle and secondary officials were also more likely to report that students were allowed to access outside email accounts and were more likely to report that students were allowed to possess cell phone while on campus compared to elementary school officials. Middle and secondary school officials were also more likely to report having found students attempting to circumvent blocking or filtering software to access Internet content meant to be kept out of the school.

There was little or no difference in responses from school officials in terms of whether or not their school had a computer laboratory or if Internet access was available to computers in the laboratory. There also was no difference in responses from school officials about communicating the school's anti-bullying policy to parents.

Variable: Respondent gender.

Data also were analyzed to see if there were significant differences in responses based on the gender of the respondent. Sixty-two point two percent (62.2%) of elementary school officials reported they were female, compared to 45.5% of middle school officials, 25.2% of secondary school officials, and 35.3% of other school officials. Differences in the gender of respondents based on school level were significant, with $\chi^2 = 43.988$, df = 3, and p < .001. Cramer's V =

.311. More elementary school officials and fewer secondary school officials reported their

gender as female than was expected. See TABLE VII. SCHOOL LEVEL AND RESPONDENT

GENDER and TABLE VIII. RESEARCH QUESTION ONE: DIFFERENCES BY

RESPONDENT GENDER for reported gender, expected gender, and test statistics.

TABLE VII. SCHOOL LEVEL AND RESPONDENT GENDER

Survey Question	Elementary	Middle	Secondary	Other	Test Statistics
4. What is your gender?	n = 172 Female – 107 Expected – 76.7	n = 97 Female – 44 Expected – 43.3	n = 135 Female – 34 Expected – 60.2	n = 51 Female – 18 Expected – 22.8	χ^2 = 43.988 df = 3 p < .001 Φ_c = .311

TABLE VIII. RESEARCH QUESTION ONE:
DIFFERENCES BY RESPONDENT GENDER

Survey Question	Female	Male	Test Statistics
14. Is there a full-time staff member at the school whose only responsibilities are technology support and/or instructional use of technology?	n = 200 Yes – 95 Expected – 111.8	n = 251 Yes – 157 Expected – 140.2	χ^2 = 10.262 df = 1 p = .001 *** Φ = .151
18. Have school personnel found students attempting to get around the school's blocking or filtering software by using proxy websites or other forbidden methods?	n = 200 Yes – 117 Expected – 140.1	n = 251 Yes – 199 Expected – 175.9	χ^2 = 22.923 df = 1 p < .001 *** Φ = .225
22. Does your school allow students to possess cell telephones while on campus?	n = 200 Yes – 122 Expected – 138.7	n = 250 Yes – 190 Expected – 173.3	χ^2 = 11.758 df = 1 p = .001 *** Φ = .162

There were also specific survey items, which produced responses with significant

differences based on respondent gender. Of the sixteen questions from section two of the survey

significant differences were found based on the gender of the respondent on three out of the

sixteen questions. The three items, which produced results with significant differences based on

respondent gender, were also the three items with the lowest p-value when looking at differences

based on school level. The differences based on respondent gender may reflect the fact that there were significant differences in the gender of respondents at each of the three school levels.

Male school officials were more likely to report having a full-time staff member dedicated to technology use and instruction, were more likely to report having found students circumvent blocking or filtering software, and were more likely to report allowing students to possess cell phones while on campus. These findings most likely reflect differences in the way technology is managed at elementary schools compared to middle and secondary schools rather than differences between male and female school officials. No other significant differences were detected in an analysis of responses to section II of the SSOC based on respondent gender.

Research Question Two: Interpretation of Incidents as Cyberbullying

Respondents were presented with twelve vignettes in section three of the survey. They were asked to rate whether or not they agreed that the incident in the vignette was an example of cyberbullying. Respondents rated the incidents on a four-point scale, ranging from "strongly disagree" to "strongly agree" with the choices "somewhat disagree" and "somewhat agree" in between. First, a Rasch analysis of this section of the survey is presented, followed by an analysis of differences to responses based on school level and gender.

 Rasch analysis.

The Rasch rating scale model (RSM) was used to analyze data obtained from responses of section three of the SSOC with WINSTEPS software (Linacre and Wright, 2011). The RSM is appropriate for analyzing these data because the items share a common scoring model and difficulty thresholds do not vary from item to item (Andrich, 1978; Wright & Masters, 1982). In determining whether or not a unidimensional construct of cyberbullying could be established based on respondent ratings of incidents, the category structure was first examined (see

APPENDIX E. RASCH SUMMARY OF CATEGORY STRUCTURE). Wolfe and Smith (2007)

recommend four criteria be met in evaluating category structure. Each category has at least 10

observations, the shape of the rating scale distribution is smooth and unimodal (see APPENDIX

F. RASCH CATEGORY PROBABILITIES), the average measures are ordered and increase in

value, and the unweighted mean-square fit statistics are less than 2.0.

The twelve items of the "Is this Cyberbullying?" section were analyzed for usefulness

and fit to the Rasch model by examining the mean-square fit statistics (Wright and Masters,

1982). The mean standardized fit statistic was .00 and the standard deviation of that statistic was

1.02 indicating a good overall fit to the model. Cronbach's Alpha (KR-20), an assessment of

internal consistency, equaled .90, indicating strong reliability. The good overall fit indicates that

the survey items represent a unidimensional construct, although specific instances of item and

person misfit were examined.

Individual items were examined to ensure none exceeded the 2.0 outfit mean-square

statistic threshold (see APPENDIX G. RASCH ITEM MISFIT ORDER) suggested by Linacre

(2002). Mean-square fit statistics have an expected value of 1.0. When the value of a mean-

square fit statistic is less than 1.0 it indicates that responses are more predictable. When the value

is greater than 1.0 responses are more unpredictable. Mean-square fit statistics between .0 and

1.5 are considered productive for measurement. All items produced infit and outfit statistics in

this range, except for question 31, which produced an outfit mean-square statistic of 1.57, which

is considered unproductive for the construction of measurement, but not degrading (Linacre,

2002). Standardized fit statistics were also examined (ZSTD on APPENDIX G. RASCH ITEM

MISFIT ORDER). If data fit the model perfectly, a standardized z-score would equal 0.0. A

standardized z-score of less than 0.0 means data are more predictable. A standardized z-score of

more than 0.0 means data are less predictable. A z-score between -1.9 and 1.9 is indicative of data which have reasonable predictability (Linacre, 2002). Looking just at the outfit z-score, which is more sensitive to outlier data, eight of the twelve items fall within the acceptable range. Two items, questions 31 and 36, produced z-scores greater than 1.9, which indicates data were unpredictable. Two items, questions 40 and 41, produced z-scores with a value less than -1.9, indicating data were too predictable.

Person misfit is to be expected, as not all individuals will respond to survey items in the same way. Indeed, 35 of the 460 respondents strongly agreed that every instance presented in section three of the survey was an example of cyberbullying. Three individuals strongly disagreed that each of the incidents represented cyberbullying. These responses are considered extreme, in that there is no variation in response patterns. Wolfe and Smith (2007) suggest using a cut off value of 2.0 for the standardized unweighted fit statistics in evaluating person misfit. Respondents whose standardized fit values (z-scores) were 2.0 or greater were removed and the data set was reanalyzed. The revised item misfit order is presented in APPENDIX H. RASCH REVISED ITEM MISFIT ORDER.

All item infit and outfit mean-square fit statistics of the revised data set now fall within the range suggested by Linacre (2002) of 0.5 to 1.5, indicating the items are productive for measurement. Looking at the outfit standardized z-scores of the revised data set, three items fall outside of the suggested parameters of -1.9 to 1.9. Items 36, 37, and 31 all had a standardized z-score greater than 1.9, indicating responses to these items were unpredictable. Items 40 and 41 each had a standardized z-score less than -1.9, indicating responses to these items were too predictable.

A person-item map (presented in APPENDIX I. RASCH PERSON-ITEM MAP) is a probabilistic model that allows for the placement of respondents and survey items on the same metric, which in Rasch analysis is a logit scale. Logit, a contraction of Log-Odds Unit, is the unit of measurement used in Rasch analysis, which produces an equal interval scale (Wright, 1993). The logit scale, located on the far left side of the person-item map, has an average item calibration centered at zero for the twelve items of section three of the survey. In a test of achievement the mean of zero would represent the midpoint of a test, where the probability of success or failure in responding to the item correctly is equal. Items that appear higher on the person-item map, above zero logits, would have a lower probability of being answered successfully. Items that appear below zero logits would have a higher probability of being answered successfully. Since this is not a test of achievement, but a test of whether or not an incident is an example of cyberbullying, survey items, which appear above the mean of 0.0 logits, toward the top of the map, were easier for respondents to endorse as an incident of cyberbullying. Survey items, which appear below the mean of 0.0 logits, listed toward the bottom of the map, were harder for respondents to endorse as episodes of cyberbullying. A visual inspection of the person-tem map reveals spacing between items at the mean line and an equal number of survey items fall above and below the mean of 0.0 logits. The zero logit or mean line is the location on the person-item map where it would be equally difficult for a respondent to either endorse an incident as an example of cyberbullying or not. Respondents are indicated on the left side of the map with "#" and "." symbols. Survey items are represented on the right side of the map. Survey items are identified by question number, bully, victim, media, and a very brief description of the incident.

The top two items on the list, which were easiest for respondents to endorse as episodes of cyberbullying, both involved students targeting teachers via social networking sites. The bottom two items, which were hardest for respondents to endorse as episodes of cyberbullying, were also interesting in that one involved trading mutual threats and the other involved a male student repeatedly trying to make contact with a female student via a social networking site. Respondents, represented on the left side of the map, are grouped toward the top of the map, meaning that, on average, respondents more often than not rated items as episodes of cyberbullying, even items that were not meant to be examples of cyberbullying.

If we treat the average item difficulty of 0.0 logits as a threshold, then items, which fall below the mean, do not meet the threshold as incidents of cyberbullying, based on ratings from school officials. Items, which fall above the average item calibration line, do meet the threshold as incidents of cyberbullying. An analysis of the six items above the threshold and the six items below the threshold reveal some interesting patterns. Items, which are above the mean line, can be characterized as containing direct threats or calls to action on the part of others. For instance, in item 32 a female student asks others to exclude another student. Items, which fall below the line, can be characterized as containing insults or unwanted requests for attention. For instance, items 31 and 36 contain requests for online communication from other students. There are a number of contradictions within the person-item map. Item 41, in which a female student makes insulting comments about the photograph of a male student, is located above the mean line. Item 38, in which a male student makes insulting comments about the photograph of a male student falls below the line. Item 40, in which a female student issues a threat, is located above the mean line. Item 37, in which two male students trade threats falls below the mean line. The

implications of the locations of items on the variable map will be further explored in the discussion section of this thesis.

Category frequencies are presented in Figure 2. Response Category Selection with specific Rasch statistics presented in APPENDIX J. RASCH CATEGORY FREQUENCIES. The easiest to endorse item, question 35, had 93% of respondents indicate that they strongly agreed and 5% of respondents indicate that they somewhat agreed the incident represented cyberbullying. The hardest to endorse item, question 31, had 19% of respondents indicate that they strongly agreed and 41% of respondents indicate that they somewhat agreed the incident represented cyberbullying, meaning 60% of respondents agreed to some degree that the incident was an example of cyberbullying.

FIGURE 2. RESPONSE CATEGORY SELECTION
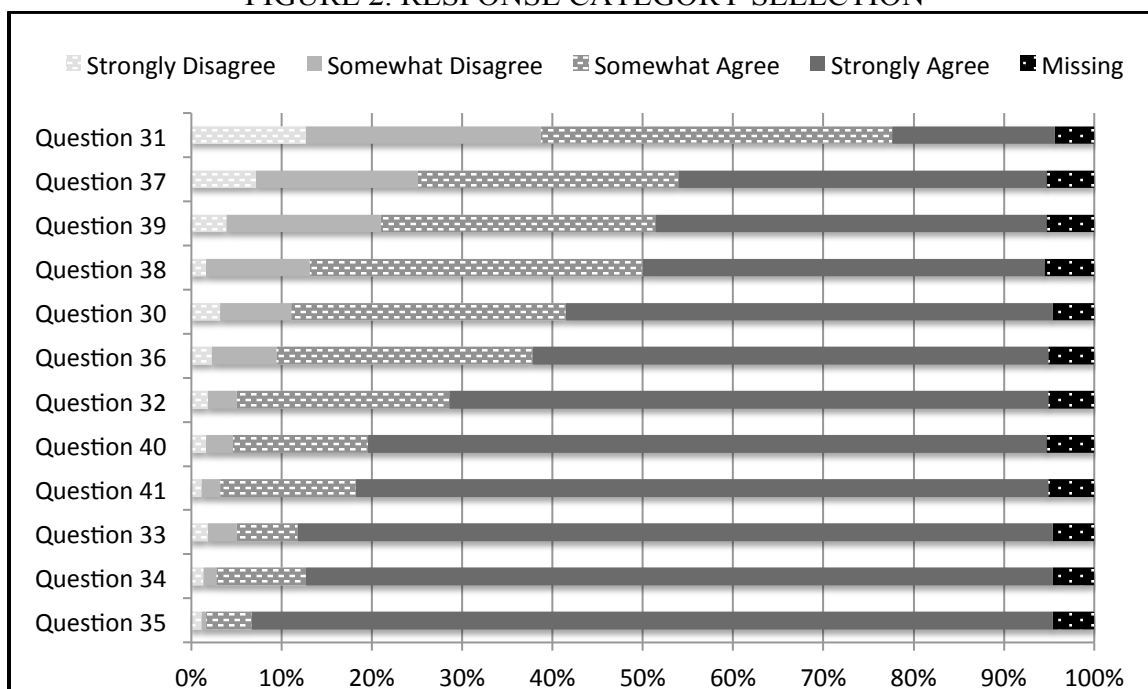
"Unidimensionality is a qualitative, rather than quantitative concept" (Wright and Linacre, 1989, p. 859). Assessing scales for unidimensionality has changed over the years. In analyzing data with a Rasch model, a unidimensional measurement system is constructed, whether or not the data are unidimensional. Besides looking at fit statistics for departures from unidimensionality, principal component analysis can also be used to determine whether or not a measure is unidimensional (Wolfe and Smith, 2007).

The principal components analysis (presented in APPENDIX K. RASCH PRINCIPAL COMPONENTS ANALYSIS) shows that the Rasch model accounted for 53.5% of the variance (50.9% of the variance before removal of misfitting persons). In comparison, the first factor extracted from the residuals accounted for only 6.5% of the overall variance (8.2% before the removal of misfitting persons). In a run of simulated data, based on the revised data set, the Rasch model accounted for 59.9% of the variance and the first factor extracted from the residuals accounted for only 4.5% of the variance. These results indicate that the measure can be considered unidimensional, and furthermore, since removal of persons with unpredictable responses lessened the overall variance, it can be assumed that departures from unidimensionality are related to person misfit as opposed to item misfit.

Variable: School level.

Data obtained from section three of the survey were further analyzed to determine if there were significant differences in responses from elementary, middle, secondary, and other school officials in rating the degree to which they believed an incident represented cyberbullying. The Kruskal-Wallis one-way analysis of variance test was used to determine if the differences based on school level were statistically significant. Unfortunately, The Kruskal-Wallis one-way analysis of variance test does not provide an effect-size statistic. To obtain an effect-size statistic

the Mann-Whitney U test, which allows one to compare ordinal data with two sets of nominal data, will be used to obtain a Z score, which can then be used to obtain an indication of effect-size. TABLE IX. RESEARCH QUESTION TWO: DIFFERENCES BY SCHOOL LEVEL contains questions from section three of the survey, the mean ranks statistic of respondents at each school level, the test statistics, and the effect-size statistics.

The first test statistic presented is the mean ranks statistic for respondents from elementary, middle, secondary, and other schools. A relatively lower mean ranks statistic indicates that a particular group of respondents rated an incident as less representative of cyberbullying compared to other groups. This statistic is useful for gaining a sense of the average differences in responses, based on school level. The second set of test statistics presented are the Kruskal-Wallis H statistic, the degrees of freedom (df), and the p-value or probability that the differences can be attributed to mere chance. The final statistics presented are the Mann-Whitney U, the p-value, and the Z score, as well as the effect-size (r). Since four variables are being compared, in order to maintain a confidence level of 95%, the p-value for the Mann-Whitney U statistic must be less than .0125 (4 x .0125 = .05). This will allow for identification of significant differences between specific groups based on school level.

Significant differences were found in the responses to the incidents based on the respondent's school level in four out of the twelve vignettes. In general, on each of the twelve vignettes, elementary school officials were more likely to provide a rating of somewhat or strongly agree, indicating a greater belief that the incident represented an example of cyberbullying, compared to middle or secondary school officials. The four vignettes, which produced responses with significant differences, represented a range of incidents. In three of the incidents a male student was the bully. A female student was the victim in three of the incidents.

The victimization portrayed took the form of unwanted contact, sexually explicit messages, criticism, and a direct threat. These types of behaviors were also present in vignettes, which did not produce responses with significant differences.

Since significant differences were found between school levels in terms of respondent gender, a separate analysis was conducted, where respondent gender was made a control variable. Only item 41, which asked respondents the extent to which they agreed or disagreed that an episode in which a female student photographed and then made fun of a male student with his shirt off on a social networking site was an example of cyberbullying, produced responses, where differences were significant for female respondents based on school level, $\chi^2 =$ 19.899, df = 9, p = .019, and Cramer's v = .185. Fewer female respondents at the secondary level selected "strongly agree" than expected and more female respondents at the elementary level selected "strongly agree" than expected. Also, more female respondents at the secondary level selected "somewhat agree" than expected.

Variable: Respondent gender.

Data from Section three, "Is this cyberbullying?" were also analyzed to see if significant differences were found based on the gender of the respondent (see TABLE X. RESEARCH QUESTION TWO: DIFFERENCES BY RESPONDENT GENDER for a summary of all statistics). Since the nominal category gender has only two variables, the statistics reported will be the Mann-Whitney U, the Z score, and the p-value. When differences are significant the effect-size (r) is also reported. Differences were significant on eight of the twelve survey items of section three of the survey between male and female respondents rating whether or not they agreed that an incident was an example of cyberbullying.

TABLE IX. RESEARCH QUESTION TWO:
DIFFERENCES BY SCHOOL LEVEL

Survey Question	Mean Ranks	Test Stats	Effect-Size
30. A female student sends an email to a female friend disclosing personal and potentially embarrassing information. After having an argument, the recipient forwards the email with the sensitive information to others. The student who originally sent the email says she is embarrassed and complains to a school official.	Elem - 232.08 Mid - 215.78 Sec- 215.18 Other - 205.67	H = 3.049 df = 3 p = .384	
31. A male student repeatedly sends requests to a female student, asking to be added as a friend on a social networking site. The female student complains to school officials that the male student is harassing her.	Elem - 237.55 Mid - 176.70 Sec - 237.87 Other - 204.58	H = 18.916 df = 3 p < .001 ***	**Elementary - Middle** Mann-Whitney U = 5,507 p < .001 ***, Z = 3.891, r = .243 **Middle – Secondary** Mann-Whitney U = 4,475.5 p < .001 ***, Z = 3.709, r = .247
32. A female student sends an email to several friends reporting that another female student has been flirting with her boyfriend. Within this email she insults the student's intelligence and appearance, encouraging her friends to exclude the student from their lunch group.	Elem - 225.55 Mid - 217.98 Sec - 222.72 Other - 194.42	H = 3.835 df = 3 p = .280	
33. A male student is found using another male student's email account to send sexually explicit messages to female students.	Elem - 238.99 Mid - 211.29 Sec - 213.53 Other - 196.37	H = 15.419 df = 3 p = .001 ***	**Elementary - Middle** Mann-Whitney U = 6,645 p = .003 ***, Z = 2.937, r = .184 **Elementary - Secondary** Mann-Whitney U = 9,586.5 p = .003 ***, Z = 2.978, r = .173 **Elementary - Other** Mann-Whitney U = 3,330.5 p < .001 ***, Z = 3.774, r = .258
34. A male student creates a web page on a social networking site, which contains negative comments and questions a male teacher's sexuality. The site includes photos of the teacher.	Elem - 227.32 Mid - 215.35 Sec - 217.97 Other - 214.42	H = 2.031 df = 3 p = .566	
35. A female student creates a web page on a social networking site that targets a particular teacher and contains threats of violence, "I want to see you die!" and uses violent imagery (Images of flames and blood).	Elem - 228.85 Mid - 213.04 Sec - 213.83 Other - 224.53	H = 5.434 df = 3 p = .143	
36. A female student repeatedly sends unwanted email communications (up to 15 a day) to another female student. The student, after asking the other student to stop, has complained to the school.	Elem - 226.51 Mid - 214.24 Sec - 222.94 Other - 202.04	H = 2.273 df = 3 p = .518	
37. Two male students trade threats, "I'm gonna kick ur ass!" and "I'd like to see you try wuss" via cell phone text message.	Elem - 233.09 Mid - 204.93 Sec - 218.20 Other - 205.96	H = 4.161 df = 3 p = .245	
38. A male student forwards a photograph of another male student, taken at a school dance, through the school email system to several friends with the caption, "Look at this fool Dance!" The student in the photo says he is embarrassed and complains to a teacher.	Elem - 223.40 Mid - 221.63 Sec - 213.72 Other - 205.25	H = 1.257 df = 3 p = .739	
39. A group of male and female students have contributed to a web page on a social networking site, which criticizes the school's principal and several teachers using derogatory and explicit language.	Elem - 240.34 Mid - 196.84 Sec - 210.17 Other - 217.35	H = 9.233 df = 3 p = .026 ***	**Elementary - Middle** Mann-Whitney U = 6,072 p = .005 ***, Z = 2.779, r = .174
40. A female student sends another female student a text message during school hours. The text message contains the following: "U better watch ur ass bitch".	Elem - 237.26 Mid - 210.84 Sec - 211.77 Other - 198.36	H = 10.8567 df = 3 p = .013 ***	**Elementary - Secondary** Mann-Whitney U = 9,423 p = .011 ***, Z = 2.551, r = .149 **Elementary - Other** Mann-Whitney U = 3,411 p = .004 ***, Z = 2.908, r = .199
41. A female student posts a photograph of a male student with his shirt off, taken at a school event (he was changing his basketball uniform), to her social networking page. She has altered the photograph, adding the caption "who could love this scrawny lil' boy?" Several other students have posted negative comments about the student in the photo. The male student has complained to the school.	Elem - 232.30 Mid - 209.18 Sec - 216.25 Other - 209.80	H = 5.490 df = 3 p = .139	

TABLE X. RESEARCH QUESTION TWO:
DIFFERENCES BY RESPONDENT GENDER

Survey Question	Mean Ranks	Test Statistics
30. A female student sends an email to a female friend disclosing personal and potentially embarrassing information. After having an argument, the recipient forwards the email with the sensitive information to others. The student who originally sent the email says she is embarrassed and complains to a school official.	Female (n = 195) - 229.42 Male (n = 242) - 210.61	Mann-Whitney U = 21,563.5 Z = 1.741 p = .082
31. A male student repeatedly sends requests to a female student, asking to be added as a friend on a social networking site. The female student complains to school officials that the male student is harassing her.	Female (n = 195) – 230.47 Male (n = 243) - 210.70	Mann-Whitney U = 21,554 Z = 1.705 p = .088
32. A female student sends an email to several friends reporting that another female student has been flirting with her boyfriend. Within this email she insults the student's intelligence and appearance, encouraging her friends to exclude the student from their lunch group.	Female (n = 193) – 234.94 Male (n = 242) – 204.49	Mann-Whitney U = 20,083 Z = 3.133 p = .002 *** r = .150
33. A male student is found using another male student's email account to send sexually explicit messages to female students.	Female (n = 195) – 226.79 Male (n = 242) – 212.73	Mann-Whitney U = 22,076.5 Z = 1.824 p = .068
34. A male student creates a web page on a social networking site, which contains negative comments and questions a male teacher's sexuality. The site includes photos of the teacher.	Female (n = 194) – 228.48 Male (n = 243) – 211.43	Mann-Whitney U = 21,732.5 Z = 2.253 p = .024 *** r = .108
35. A female student creates a web page on a social networking site that targets a particular teacher and contains threats of violence, "I want to see you die!" and uses violent imagery (Images of flames and blood).	Female (n = 195) – 228.20 Male (n = 242) – 211.59	Mann-Whitney U = 21,801 Z = 2.646 p = .008 *** r = .127
36. A female student repeatedly sends unwanted email communications (up to 15 a day) to another female student. The student, after asking the other student to stop, has complained to the school.	Female (n = 194) - 229.64 Male (n = 242) – 209.57	Mann-Whitney U = 21,312 Z = 1.903 p = .057
37. Two male students trade threats, "I'm gonna kick ur ass!" and "I'd like to see you try wuss" via cell phone text message.	Female (n = 193) – 241.88 Male (n = 242) – 198.95	Mann-Whitney U = 18,744 Z = 3.747 p < .001 *** r = .180
38. A male student forwards a photograph of another male student, taken at a school dance, through the school email system to several friends with the caption, "Look at this fool Dance!" The student in the photo says he is embarrassed and complains to a teacher.	Female (n = 192) - 229.71 Male (n = 240) – 205.93	Mann-Whitney U = 20,504 Z = 2.151 p = .031 *** r = .103
39. A group of male and female students have contributed to a web page on a social networking site, which criticizes the school's principal and several teachers using derogatory and explicit language.	Female (n = 193) – 247.76 Male (n = 242) – 194.27	Mann-Whitney U = 17,610 Z = 4.701 p < .001 *** r = .225
40. A female student sends another female student a text message during school hours. The text message contains the following: "U better watch ur ass bitch".	Female (n = 193) – 231.80 Male (n = 242) – 206.99	Mann-Whitney U = 20,689 Z = 2.863 p = .004 *** r = .137
41. A female student posts a photograph of a male student with his shirt off, taken at a school event (he was changing his basketball uniform), to her social networking page. She has altered the photograph, adding the caption "who could love this scrawny lil' boy?" Several other students have posted negative comments about the student in the photo. The male student has complained to the school.	Female (n = 194) – 228.46 Male (n = 242) – 210.52	Mann-Whitney U = 21,542 Z = 2.125 p = .034 *** r = .102

Significant differences were found in the ratings on eight out of twelve of the vignettes based on respondent gender. In general female respondents rated each of the incidents as more like cyberbullying than male respondents. A range of incidents produced responses where differences were significant, including vignettes where the bully was male, female or a group of students and vignettes where the victim was male, female, or a school official. The vignettes where differences were found contained threats of violence, rumor spreading, ostracism, humiliation, and criticism. As previously indicated, elementary school official respondents were more likely female and secondary school officials were more likely male. Differences based on respondent gender are most likely the result of differences in how an elementary school official perceived the aggression portrayed in the vignettes as opposed to differences based on respondent gender.

Since there were significant differences between respondents of different school levels in terms of gender, a separate analysis was conducted where school level was made the control variable. When controlling for school level, only item 39, which asked respondents the extent to which they agreed or disagreed that an episode in which a group of students contributed to a social networking site, criticizing the principal and several teachers was an example of cyberbullying produced responses where differences were significant between male and female respondents at the elementary school level, $\chi^2 = 19.046$, df = 3, p < .001, and Cramer's V = .342. Fewer male and more female respondents selected "strongly agree" than was expected and more male and fewer female respondents selected "somewhat disagree" than was expected.

Research Question Three: Disciplinary Response to Incidents of Cyberbullying

Section four of the survey asked respondents to provide a typical disciplinary response when an average student was found engaging in various incidents of cyberbullying. Respondents

were provided with eight disciplinary response choices, which were "no action", "talk to student", "parent conference", "loss of privilege", "loss of computer access", "detention", "suspension", and "expulsion". First, a latent class analysis of responses to section four of the survey is presented, followed by an analysis of differences to responses to section four of the survey based on school level and gender.

Latent class analysis.

In modeling latent classes one assumes that each set of observations belongs in only one of the potential latent classes (Magidson & Vermunt, 2004). A latent class analysis then, looks at each set of observations provided by a respondent and makes a determination about that set of responses in relation to observations provided by other respondents. In analyzing the observations of respondents a latent class analysis can determine if there should be one group or class or respondents or multiple groups of respondents, based on observations or answers provided to the survey. In determining if there were latent classes or subgroups of respondents based on section four of the survey the nominal variables role (principal, assistant principal, disciplinarian, or other), years of experience (more or less than five years), school level (elementary, middle, secondary, or other), gender, and disciplinary response choice (eight options) to cyberbullying vignettes were analyzed with Mplus software (Muthén & Muthén, 2011) using the Lo-Mendell-Rubin (LMR) likelihood ratio test of model fit. Results indicate a two-class solution is optimal (see TABLE XI. FIT INDICES FOR LATENT CLASS ANALYSIS MODELS WITH FIVE CLASSES).

Data on class membership, with class probabilities were exported to an external data file and class membership characteristics were analyzed. Approximately 60% of respondents were classified into one class and the remaining 40% of respondents were classified into a second

latent class. Class 1 contained 100% of elementary school officials, 41% of middle school

officials, 23.1% of secondary school officials, and 56.4% of other school officials. Class 2

contained no elementary school officials, 59% of middle school officials, 76.9% of secondary

school officials, and 43.6% of other school officials (see TABLE XII. COMPOSITION OF

LATENT CLASSES).

TABLE XI. FIT INDICES FOR LATENT CLASS ANALYSIS MODELS
WITH FIVE CLASSES

# of Classes	Model Fit BIC	Sample-Size Adjusted BIC	LMR HØ Log-likelihood	2x Log-likelihood Difference (χ^2)	df	Mean	Standard Deviation	LMR LRT p-value for K − 1
1	7805.943	7742.495	n/a	n/a	n/a	n/a	n/a	n/a
2	7836.552	7709.655	-3844.251	86.837	20	27.252	18.548	0.0139 ***
3	7897.724	7707.377	-3800.834	56.271	15	263.194	251.833	0.8654
4	7976.262	7722.467	-3775.464	44.436	4	264.616	263.874	0.8822
5	8060.308	7743.065	-3753.377	33.658	-11	233.319	205.978	0.9073

TABLE XII. COMPOSITION OF LATENT CLASSES

Latent Classes	Elementary	Middle	Secondary	Other	Total
1	n=135	n=32	n=24	n=22	n=213
% of School Level	100%	41%	23.1%	56.4%	
2	n=0	n=46	n=80	n=17	n=143
% of School Level	0%	59%	76.9%	43.6%	
Totals	**n=135**	**n=78**	**n=104**	**n=39**	**n=356**

Variable: School level.

Next, responses to section four were analyzed to determine if there were differences in the selection of disciplinary actions between respondents from elementary, middle, secondary, and other schools. In determining if differences are significant the Pearson Chi-Square statistic (χ^2) is considered, along with the degrees of freedom (df), and the p-value. The possibility that chance explains those differences must be equal to or less than 5% (p-value ≤ 0.05). Effect-size is also reported in the form of the Cramer's V statistic. Significant differences were found in choice of disciplinary action based on the school level of the respondent in six out of twelve vignettes (see TABLE XIII. RESEARCH QUESTION THREE: DISCIPLINARY RESPONSE CHOICE BY SCHOOL LEVEL).

Some patterns emerged in the disciplinary responses to the various incidents by school officials of different school levels. Secondary school officials chose "parent conference" as a disciplinary response choice more often than expected and "suspension" less often than expected. Middle school officials selected "suspension" more often than expected. Elementary school officials selected "parent conference" less than expected. The disciplinary response choice "suspension" was the leading selection made by all school officials for each vignette. "Parent conference" was the second or third choice of disciplinary response in 11 out of the 12 vignettes. "Student conference" was the third disciplinary response choice in six out of the twelve vignettes. The survey item, which provoked the most frequent selection of suspension (74.9%) and expulsion (13.7%) was question 51 in which a male student photographed another male student changing in a locker room and then sent the photo out via text message. The survey item for which suspension was chosen least often (31.8%) was question 50, in which a student asked her classmates to ignore and exclude another female student in the class.

TABLE XIII. RESEARCH QUESTION THREE:
DISCIPLINARY RESPONSE CHOICE BY SCHOOL LEVEL

Survey Question	Most Unexpected Elementary	Most Unexpected Middle	Most Unexpected Secondary	Test Statistics
42. A female student sends another female student a number of different cell phone text messages containing disparaging remarks, "U R Fat, SLUT!!!, Why don't U kill yourself?".	(n=146) Parent Conference Expected – 35.7 Actual – 29	(n=83) Suspension Expected – 43.6 Actual - 55	(n=114) Suspension Expected – 59.9 Actual – 54	χ^2 = 37.045 df = 21 p = .017 *** Φ_c = .178
43. A male student creates a web page on a social networking site, which ranks female students of the school based on looks and physiques using sexually explicit and derogatory language.	(n=146) Parent Conference Expected – 36.3 Actual – 28	(n=82) Suspension Expected – 42.1 Actual – 50	(n=115) Suspension Expected – 59 Actual - 49	χ^2 = 34.762 df = 21 p = .030 *** Φ_c = .173
44. A female student sends an email to a number of her classmates. In the email she insinuates that her former boyfriend might be homosexual and that he seemed more interested in her older brother than her.	(n=145) Suspension Expected – 49.5 Actual – 55	(n=80) Suspension Expected – 27.3 Actual – 36	(n=115) Suspension Expected – 39.2 Actual - 27	χ^2 = 43.609 df = 21 p = .003 *** Φ_c = .195
45. A female student is found using another student's email account, sending out messages to other students, which contain negative remarks, "You're such an idiot!" and threats, "I'm gonna destroy you".	(n=144) Suspension Expected – 64.7 Actual – 70	(n=82) Suspension Expected – 36.9 Actual – 47	(n=116) Suspension Expected – 52.2 Actual - 40	χ^2 = 25.855 df = 21 p = .212
46. A male student is found using another male student's email account to send threatening messages to teachers and students.	(n=145) Expulsion Expected – 24.7 Actual – 28	(n=82) Suspension Expected – 53.8 Actual - 60	(n=118) Suspension Expected – 77.4 Actual – 74	χ^2 = 17.473 df = 21 p = .682
47. A male student sends another male student a text message saying, "I'll be waiting for you after school. U R DEAD!"	(n=145) Expulsion Expected – 15.4 Actual – 20	(n=82) Suspension Expected – 51.3 Actual – 58	(n=116) Parent Conference Expected – 13.8 Actual - 21	χ^2 = 25.282 df = 21 p = .235
48. A male student alters and posts a photograph of a female student to his social networking page, adding a caption hinting that the female student is homosexual, "Butch?"	(n=146) Suspension Expected – 64.8 Actual – 74	(n=81) Parent Conference Expected – 22.3 Actual – 28	(n=113) Suspension Expected – 50.1 Actual - 40	χ^2 = 33.618 df = 21 p = .040 *** Φ_c = .171
49. A female student sends a photo of herself to a male student from her cell phone. The photo is sexual in nature. The male student forwards the photograph of the female student wearing a brassiere and panties to several other students from his personal email account. The female student finds out that the image has been forwarded and complains to school officials.	(n=146) Parent Conference Expected – 51.6 Actual - 42	(n=81) Parent Conference Expected – 28.6 Actual – 34	(n=112) Student Conference Expected – 8.9 Actual – 13	χ^2 = 28.501 df = 21 p = .127
50. A female student sends an email to all of the members of her homeroom. In the email she asks that everyone ignore another female member of the class. She asks her classmates to walk away from the student if she approaches and to ignore any conversations she tries to initiate.	(n=144) Parent Conference Expected – 25.8 Actual - 17	(n=82) Parent Conference Expected – 14.7 Actual – 24	(n=112) Student Conference Expected – 14.4 Actual – 21	χ^2 = 29.865 df = 21 p = .095
51. A male student uses his cell phone to take a picture of another male student while he is changing in the locker room. The student then sends the picture to several male and female friends via cell phone text message.	(n=142) Expulsion Expected – 19.5 Actual – 16	(n=81) Suspension Expected – 60.7 Actual - 63	(n=114) Expulsion Expected – 15.6 Actual – 17	χ^2 = 12.677 df = 21 p = .920
52. A female student sends a male student, with whom she previously had a relationship, an email telling him to watch his back because some friends of hers want to "kick his ass".	(n=143) Suspension Expected – 58.8 Actual – 69	(n=82) Parent Conference Expected – 16.3 Actual – 25	(n=114) Student Conference Expected – 21.8 Actual - 36	χ^2 = 36.497 df = 21 p = .019 *** Φ_c = .178
53. A male student teases another male student in a conversation on a social networking site. The student insinuates that the other student is homosexual and mocks the way he talks, acts and dresses. School officials become aware of the posting after the parent of the targeted student complains.	(n=143) Suspension Expected – 57.2 Actual –	(n=82) Parent Conference Expected – Actual –	(n=112) Parent Conference Expected – 13.9 Actual - 26	χ^2 = 37.736 df = 21 p = .014 *** Φ_c = .182

When gender was used as a control variable, significant differences were found, based on school level, on four of the twelve items of section four (See TABLE XIV. RESEARCH QUESTION THREE: DISCIPLINARY RESPONSE CHOICE BY SCHOOL LEVEL WITH GENDER AS A CONTROL VARIABLE).

TABLE XIV. RESEARCH QUESTION THREE: DISCIPLINARY RESPONSE CHOICE BY SCHOOL LEVEL WITH GENDER AS A CONTROL VARIABLE

Survey Question	Most Unexpected	Test Statistics
43. A male student creates a web page on a social networking site, which ranks female students of the school based on looks and physiques using sexually explicit and derogatory language.	Male (n = 214), Secondary Suspension Expected – 42.7 Actual - 34	χ^2 = 33.125 df = 18 p = .016 *** Φ_c = .227
44. A female student sends an email to a number of her classmates. In the email she insinuates that her former boyfriend might be homosexual and that he seemed more interested in her older brother than her.	Male (n = 216), Secondary Student Conference Expected – 13.4 Actual - 20	χ^2 = 31.536 df = 18 p = .025 *** Φ_c = .221
48. A male student alters and posts a photograph of a female student to his social networking page, adding a caption hinting that the female student is homosexual, "Butch?"	Male (n = 213), Secondary Student Conference Expected – 9.6 Actual - 17	χ^2 = 33.516 df = 21 p = .041 *** Φ_c = .229
53. A male student teases another male student in a conversation on a social networking site. The student insinuates that the other student is homosexual and mocks the way he talks, acts and dresses. School officials become aware of the posting after the parent of the targeted student complains.	Female (n = 165), Secondary Student Conference Expected – 3.2 Actual - 8	χ^2 = 34.210 df = 21 p = .034 *** Φ_c = .263

Differences in disciplinary response choice based on school level when gender was used as a control variable all occurred at the secondary level. Responses by male school officials at the secondary level produced significant differences on three of the survey items. On one item the secondary male school officials selected "suspension" as a disciplinary response choice less often than expected. On two of the survey items secondary male school officials selected "student conference" more often than expected. On one of the four items where differences were significant, secondary female school officials selected "student conference" more often than expected.

Variable: Respondent gender.

Data also were analyzed to see if there were significant differences in choice of disciplinary response, based on respondent gender (see TABLE XV. RESEARCH QUESTION THREE: DISCIPLINARY RESPONSE CHOICE BY GENDER). Differences were found in choice of disciplinary response between male and female respondents on eight out of twelve vignettes.

In general, differences between male and female respondents were based on the use of the disciplinary response choices "suspension" and "parent conference". Female respondents chose "suspension" as a disciplinary response choice more than expected and male respondents chose "suspension" less than expected. Of the eight out of twelve vignettes where differences were significant, five of the vignettes produced responses where the disciplinary response choice "suspension" was the most unexpected. Two vignettes produced differences where the disciplinary response choice "parent conference" was the most unexpected. Here female respondents chose "parent conference" less than expected and male respondents chose so more than expected. On one vignette, where differences between male and female respondents were significant, the response choice "expulsion" was most unexpected. Female respondents chose "expulsion" more than expected and male respondents chose "expulsion" less than expected.

When school level was used as a control variable, significant differences were found based on respondent gender on six out of twelve items (See TABLE XVI. RESEARCH QUESTION THREE: DISCIPLINARY RESPONSE CHOICE BY GENDER WITH SCHOOL LEVEL AS A CONTROL VARIABLE for a summary of differences by gender when school level was used as a control variable).

TABLE XV. RESEARCH QUESTION THREE:
DISCIPLINARY RESPONSE CHOICE BY GENDER

Survey Question	Most Unexpected		Test Statistics
	Female	Male	
42. A female student sends another female student a number of different cell phone text messages containing disparaging remarks, "U R Fat, SLUT!!!, Why don't U kill yourself?".	(n = 171) Parent Conference Expected – 41.8 Actual - 30	(n = 214) Parent Conference Expected – 52.2 Actual - 64	χ^2 = 21.564 df = 7 p = .003 *** Φ_c = .237
43. A male student creates a web page on a social networking site, which ranks female students of the school based on looks and physiques using sexually explicit and derogatory language.	(n = 169) Suspension Expected – 86.9 Actual - 92	(n = 214) Suspension Expected – 110.1 Actual - 105	χ^2 = 16.607 df = 7 p = .020 *** Φ_c = .208
44. A female student sends an email to a number of her classmates. In the email she insinuates that her former boyfriend might be homosexual and that he seemed more interested in her older brother than her.	(n = 165) Suspension Expected – 56.3 Actual - 69	(n = 216) Suspension Expected – 73.7 Actual - 61	χ^2 = 22.962 df = 7 p = .002 *** Φ_c = .245
45. A female student is found using another student's email account, sending out messages to other students, which contain negative remarks, "You're such an idiot!" and threats, "I'm gonna destroy you".	(n = 169) Suspension Expected – 76.1 Actual - 89	(n = 215) Suspension Expected – 96.9 Actual - 84	χ^2 = 25.497 df = 7 p = .001 *** Φ_c = .258
46. A male student is found using another male student's email account to send threatening messages to teachers and students.	(n = 169) Parent Conference Expected – 8.4 Actual - 4	(n = 215) Parent Conference Expected – 10.6 Actual - 15	χ^2 = 15.657 df = 7 p = .028 *** Φ_c = .202
47. A male student sends another male student a text message saying, "I'll be waiting for you after school. U R DEAD!"	(n = 166) Expulsion Expected – 17.3 Actual - 26	(n = 218) Expulsion Expected – 22.7 Actual - 14	χ^2 = 26.503 df = 7 p < .001 *** Φ_c = .263
48. A male student alters and posts a photograph of a female student to his social networking page, adding a caption hinting that the female student is homosexual, "Butch?"	(n = 166) Suspension Expected – 73.6 Actual - 85	(n = 213) Suspension Expected – 94.4 Actual - 83	χ^2 = 15.784 df = 7 p = .027 *** Φ_c = .204
49. A female student sends a photo of herself to a male student from her cell phone. The photo is sexual in nature. The male student forwards the photograph of the female student wearing a brassiere and panties to several other students from his personal email account. The female student finds out that the image has been forwarded and complains to school officials.	(n = 164) Parent Conference Expected – 57.9 Actual - 50	(n = 213) Parent Conference Expected – 75.1 Actual - 83	χ^2 = 13.775 df = 7 p = .055
50. A female student sends an email to all of the members of her homeroom. In the email she asks that everyone ignore another female member of the class. She asks her classmates to walk away from the student if she approaches and to ignore any conversations she tries to initiate.	(n = 164) Suspension Expected – 52.5 Actual - 65	(n = 214) Suspension Expected – 68.5 Actual - 56	χ^2 = 16.006 df = 7 p = .025 *** Φ_c = .206
51. A male student uses his cell phone to take a picture of another male student while he is changing in the locker room. The student then sends the picture to several male and female friends via cell phone text message.	(n = 162) Expulsion Expected – 22.3 Actual - 20	(n = 215) Expulsion Expected – 29.7 Actual - 32	χ^2 = 4.604 df = 7 p = .708
52. A female student sends a male student, with whom she previously had a relationship, an email telling him to watch his back because some friends of hers want to "kick his ass".	(n = 165) Parent Conference Expected – 32.6 Actual - 28	(n = 215) Parent Conference Expected – 42.4 Actual - 47	χ^2 = 7.794 df = 7 p = .351
53. A male student teases another male student in a conversation on a social networking site. The student insinuates that the other student is homosexual and mocks the way he talks, acts and dresses. School officials become aware of the posting after the parent of the targeted student complains.	(n = 165) Suspension Expected – 65.9 Actual - 75	(n = 213) Suspension Expected – 85.1 Actual - 76	χ^2 = 13.638 df = 7 p = .058

TABLE XVI. RESEARCH QUESTION THREE: DISCIPLINARY RESPONSE CHOICE BY GENDER WITH SCHOOL LEVEL AS A CONTROL VARIABLE

Survey Question	School Level of Significance	Most Unexpected		Test Statistics
		Female	**Male**	
42. A female student sends another female student a number of different cell phone text messages containing disparaging remarks, "U R Fat, SLUT!!!, Why don't U kill yourself?".	Secondary (n = 114)	(n = 28) Parent Conference Expected – 7.1 Actual - 2	(n = 86) Parent Conference Expected – 21.9 Actual - 27	χ^2 = 16.874 df = 7 p = .018 *** Φ_c = .385
46. A male student is found using another male student's email account to send threatening messages to teachers and students.	Secondary (n = 118)	(n = 28) Expulsion Expected – 4.5 Actual - 8	(n = 90) Expulsion Expected – 14.5 Actual - 11	χ^2 = 15.636 df = 7 p = .029 *** Φ_c = .364
47. A male student sends another male student a text message saying, "I'll be waiting for you after school. U R DEAD!"	Elementary (n = 144)	(n = 88) Suspension Expected – 56.2 Actual - 61	(n = 56) Suspension Expected – 35.8 Actual - 31	χ^2 = 15.480 df = 7 p = .030 *** Φ_c = .328
48. A male student alters and posts a photograph of a female student to his social networking page, adding a caption hinting that the female student is homosexual, "Butch?"	Elementary (n = 145)	(n = 89) Suspension Expected – 44.8 Actual - 50	(n = 56) Suspension Expected – 28.2 Actual - 23	χ^2 = 14.329 df = 7 p = .046 *** Φ_c = .314
50. A female student sends an email to all of the members of her homeroom. In the email she asks that everyone ignore another female member of the class. She asks her classmates to walk away from the student if she approaches and to ignore any conversations she tries to initiate.	Middle (n = 82)	(n = 36) Parent Conference Expected – 10.5 Actual – 7 Suspension Expected – 12.7 Actual – 19	(n = 46) Parent Conference Expected – 13.5 Actual – 17 Suspension Expected – 16.3 Actual – 10	χ^2 = 14.647 df = 5 p = .012 *** Φ_c = .423
51. A male student uses his cell phone to take a picture of another male student while he is changing in the locker room. The student then sends the picture to several male and female friends via cell phone text message.	Secondary (n = 114)	(n = 27) Parent Conference Expected – 1.2 Actual - 0	(n = 87) Parent Conference Expected – 3.8 Actual - 5	χ^2 = 12.852 df = 6 p = .045 *** Φ_c = .336

In general, significant differences between male and female respondents were found at all three school levels. On two items differences were found at the elementary school level between male and female respondents in the selection of "suspension" as a disciplinary response choice. Female school officials at the elementary school level selected "suspension" more often than expected and male school officials selected "suspension" less often than expected. On one item differences at the middle school level were significant between male and female school officials. Female middle school officials selected "parent conference" less often than expected and "suspension" more often than expected and male middle school officials selected "parent

conference" more often than expected and "suspension" less often than expected. On three items differences were found at the secondary level between male and female respondents. On two of the three items female secondary school officials selected "parent conference" less often than expected and male secondary school officials selected "parent conference" more often than expected. On the third item at the secondary level female respondents selected "expulsion" more often than expected and male secondary school officials selected "expulsion" less often than expected. In the following chapter these results are discussed further and the implications for policy, practice, and research are presented.

V. Discussion

The ultimate goals of this study were to understand how school officials approached the prevention of cyberbullying, interpreted examples of aggression mediated by Internet and cell phone technology, and responded disciplinarily to incidents of cyberbullying. School officials must exercise leadership within a school organization in response to student displays of aggression. Given the current national interest in the topic of cyberbullying and a principal's personal understanding of cyberbullying, experiences with students and an understanding of the school organization may influence school officials to approach prevention and intervention in different ways. Of particular interest are differences in responses between groups of officials, based on school level and gender. Past research has reported that student understandings of bullying and aggression differ depending on grade and age levels (Monks and Smith, 2006) and that students and researchers may hold different definitions of bullying (Guerin and Hennessey, 2002). Furthermore, past studies have also reported that children hold different beliefs about aggression depending on their gender (Crick, Bigbee, and Howes, 1996) and that boys and girls may display aggression in different ways (Björkvist et al., 1992; Crick and Grotpeter, 1995;

Kistner et al., 2010; Lagerspetz et al., 1988). These differences in the way bullying is understood and in the way aggression is manifested, depending on student age, grade level, and gender may have an effect on how school officials approach prevention and intervention, interpret aggression as bullying, and determine the best approach to discipline students for cyberbullying.

Summary of Findings

Research question one.

1. What are some of the methods used in schools to prevent cyberbullying and are there differences between responses from elementary, middle, and secondary school officials?

It appears the primary intervention strategy chosen by school officials is blocking and filtering inappropriate Internet content from students. This approach was indicated by 95.3% of all respondents. Nearly 70% of respondents indicated having found students attempting to circumvent the blocking and filtering software. The majority of respondents (63.9%) indicated that they do not use an anti-bullying curriculum in their schools and 44.3% indicated that they do not have a full-time staff member dedicated to technology use and instruction.

Research question two.

2a. Will school officials' rankings of a series of vignettes meant to represent a range of incidents of cyberbullying support a unidimensional construct (cyberbullying) and if so what is the nature of the hierarchical structure of the items?

School officials' rankings do support a unidimensional construct of cyberbullying. It is interesting to note that the two incidents, which received the highest rankings from school officials as examples of cyberbullying involved student aggression directed at teachers. In a vignette where the principal was the target of student aggression school officials were less likely to endorse the incident as an example of cyberbullying. Direct

threats were more likely to receive higher rankings as examples of cyberbullying, while

unwanted contact was less likely to receive endorsement as an example off

cyberbullying.

2b. Are there differences in how school personnel from elementary, middle, and secondary schools interpret whether or not an incident constitutes cyberbullying?

There were differences in how officials of schools of different levels interpreted incidents

of cyber-aggression. In general, elementary school officials were more likely to endorse

vignettes as examples of cyberbullying compared to middle and secondary school officials.

Differences were found in school officials' rankings of incidents on four out of the twelve

vignettes based on respondent school level. Differences were also found in school officials'

rankings of vignettes based on respondent gender. Female respondents were more likely to

endorse the vignettes as examples of cyberbullying. Differences were found in school officials'

rankings of incidents on eight out of twelve vignettes based on respondent gender.

Research question three.

3a. Based on disciplinary response choices provided by school officials to a series of vignettes depicting incidents of cyberbullying, are there identifiable latent classes or subgroups of respondents?

A latent class analysis of disciplinary response choice data revealed that two

latent classes of respondents could be identified, indicating a relationship between the

way school officials administer discipline and school level.

3b. Are there differences between personnel from elementary, middle, and secondary schools in their selection of a typical disciplinary response to various incidents of cyberbullying?

Differences were found in school officials' selection of a typical disciplinary response choice on six out of twelve cyberbullying incidents based on their school level. In general, elementary and middle school officials selected suspension more often than expected and secondary school officials selected student and parent conference more often than expected. Differences were also found in school officials' selection of a typical disciplinary response choice on eight out of twelve cyberbullying incidents based on respondent gender. In general, female respondents selected suspension and expulsion more often than expected and male respondents selected parent conference more often than expected.

Differences Between Sample and Respondents

The most striking discrepancy between the sample selected from the CCD and the population of respondents to the SSOC is the category of "other" respondents. These responses are from school officials whose schools do not fit into either the elementary, middle, or secondary categories. The majority of school officials represented in this category work at schools which serve students either in pre-kindergarten, kindergarten, or first grade through twelfth grade. Although there are only 53 responses in the category "other", this subgroup comprises 11.5% of all respondents, compared to representing only 7.9% of all Midwestern schools and 6.2% of schools in the sample. It is unclear why this type of school is overrepresented among survey respondents. This anomaly might be explained by the fact that schools in rural areas, which may be more likely to employ a pre-k through 12 model, are also schools which rely on technology to a greater degree and therefore a survey which addresses cyberbullying may have garnered more attention from school leaders of these types of schools. This group of respondents is problematic because it is unclear how to interpret differences in responses when compared to other groups of respondents based on school level.

Another important difference between the sample and the resulting pool of respondents is that elementary schools represented 52.8% of the sample, but only 37.5% of the respondents to the SSOC. There may be less interest in a survey on cyberbullying at the elementary school level compared to the middle and secondary school levels because elementary school officials may not view cyberbullying as relevant to the extent that middle and secondary school officials do.

Research Question One: School Policies and Practices

Section two of the survey asked respondents to provide information on school policies and practices related to the administration of technology. Responses to these survey items were analyzed in response to research question one to see if differences could be found based on the school level of the school. As one might expect, technology is made available to students of different grade levels in different ways. The differences are discussed below, as are the implications of those differences.

Approximately 92% of all school officials reported that their schools have a separate computer laboratory and 98% reported that the computers in those laboratories have access to the Internet. Furthermore, 78% of schools had computers with Internet access available for student use in classrooms. There are significant differences between elementary, middle and secondary schools. Elementary school officials were more likely to report having computers in classrooms with Internet access. Middle and secondary school officials were more likely to report having a staff member dedicated to technology support and/or instruction. These discrepancies suggest that technology is administered differently, depending on the level of the school. It is apparent that students do not lack opportunities to use computers with Internet access while at school. Of particular concern is the fact that approximately 97% of middle school officials report having separate computer laboratories and 99% report that those computers have Internet access, and yet

only 63% of middle school officials report having someone on staff whose responsibilities include technology support and instruction. Schools may be making technology available to students without having staff that can provide technological supervision, support, and expertise.

Social networking sites.

On average, 95% of schools block access to social networking sites and 78% of schools disallow students from accessing outside email accounts. In order to receive discounts on technology, schools must use blocking and filtering software to restrict student access to inappropriate material (Wells and Lewis, 2006). As students get older they may have greater ability to circumvent blocking and filtering software programs (Agatston et al., 2007). Eighty-four percent (84%) of middle school officials and 96% of secondary school officials report having found students attempting to get around software meant to block or filter Internet content, while only 37% of elementary school officials have found students doing so. Older students may have more technological savvy and therefore may have more ability to access content school officials are attempting to keep out of schools. Although the majority of school officials (94.1%) report that teaching appropriate Internet usage is part of their school's technology program, roughly the same percentage report blocking access to social networking sites. It would seem that school officials would prefer to restrict access to popular social networking sites, rather than use these sites to teach appropriate usage. Sengupta and Chaudhuri (2011) found no empirical support for the notion that social networking sites increase the risk of experiencing cyberbullying. If schools are blocking these sites in an effort to protect students from cyberbullying their efforts may be misguided. Lenhart et al. (2010) reported that 73% of teens use social networking sites such as Facebook. Access to sites such as Facebook may be blocked so that the school is not responsible for objectionable content posted to a website off-campus, but

available to students on campus. The problem is that this content is already available to the student who is able to circumvent the blocking and filtering software. Another problem is that even if the content is not available on campus, the effects of cyberbullying via blocked or filtered websites may still be manifested on campus. The student who is bullied off campus does not escape the effects of the bullying at school, especially if they share classrooms, lunchrooms, or playgrounds with those who have either witnessed or perpetrated the online bullying (Hinduja and Patchin, 2007; Hinduja and Patchin, 2008; Juvonen and Gross, 2008; Patchin and Hinduja, 2010; Sourander et al., 2010; Vandebosch and Van Cleemput, 2009; Ybarra et al., 2006). Morgan (2010) has recommended using social networking sites to help teach students who struggle with social skills, as teachers can serve as behavioral models for appropriate online interactions.

Bullying and cyberbullying reports.

Tokunaga (2010), in a review of cyberbullying literature, found that 20 – 40% of students reported victimization by cyberbullies. Given the relatively low number of bullying and cyberbullying incidents reported here, school officials might be unaware of the scope or severity of the problem. Twenty-four point three percent (24.3%) of school officials reported that there had not been any instances of bullying in their school in the past month and 50.6% reported that there had not been any instances of cyberbullying in the past month. On average, bullying was reported to have occurred 3.8 times at each school in the past month and cyberbullying was reported to have occurred 1.3 times. Either school officials are unaware of instances of bullying, which are occurring on their campuses or they have chosen to underreport actual instances of bullying here. It would seem, given recent studies on victimization, which indicate that approximately 30% of students are moderately to frequently involved in bullying (Nansel et al.,

2001), that school officials are ignorant of the extent to which bullying affects students. These findings are consistent with past research, which indicated that faculty and staff at all grade levels underestimate student victimization (Bradshaw et al., 2007).

Curricular interventions.

While it may be assumed that cyberbullying is more of a problem as students get older and have more technological experience, it appears that elementary and middle school officials more often employ a curriculum to address all types of bullying (41% of elementary and 45% of middle school officials, compared to 25% of secondary school officials report using a specific curriculum). Most schools report using no curriculum (overall 64% say they do not), which may be a function of a misunderstanding of what the term 'curriculum' actually means. A number of respondents who completed paper and pencil surveys first responded 'yes' to the question and then, when they were unable to provide a name for the curriculum changed their response to 'no'. The term curriculum may mean a "manualized" or stand-alone program to many school officials, although 9% (n = 43) of respondents indicated they had created a curriculum 'in house'. The most popular "manualized" program identified by school officials was the Olweus Bullying Program (n = 21; 4.6%) followed by Second Step (n = 14; 3%), i-Safe (n = 9; 2%) and Positive Behavior Interventions and Supports (PBIS; n = 9; 2%).

These findings reflect different approaches to intervention and prevention. Some school officials indicate using programs, which reflect a whole-school approach (Olweus and PBIS), while other school officials report using targeted curricular interventions (Second Step). While whole-school approaches have proven moderately successful in some cases (Vreeman and Carroll, 2007), the Olweus program is susceptible to differential implementation, which may

reduce its effectiveness (Smith et al., 2004) and furthermore it has had mixed results depending on student gender, age, race, and ethnicity (Bauer et al., 2007).

Student cell phone policies.

Another survey item, which produced significantly different results, asked respondents to indicate if students were allowed to possess cell phones while on campus. Only 49% of elementary school officials reported that students were allowed to possess cell phones, while 80% of middle school officials and 86% of secondary school officials indicated students were allowed to have cell phones while on campus. Lenhart et al. (2010) reported that 58% of 12-year-olds and 75% of teenagers have a cell phone. Although 98% of school officials reported having specific rules prohibiting student cell phone use at school, students were found using cell phones inappropriately on average 7.7 times per school in the past month. Frankly, this number seems very low, especially since 26% of school officials reported no inappropriate use of cell phones in the past month and one school official reported 700 instances of inappropriate cell phone use. This discrepancy indicates that inappropriate cell phone use varies greatly from school to school or, more likely, administrator reporting of inappropriate cell phone use is what varies.

Differences in policies and practices based on respondent gender.

There were several differences in school policies and practices based on respondent gender. The most important difference was the gender of the respondent by school level. The majority of elementary school officials were women (62.2%), while the majority of middle (54.6%) and secondary school officials (74.8%) were men. Differences in responses about school policies and practices based on gender are more likely the result of these school level differences, than actual administrative or philosophical differences due to respondent gender. For example, item 14 asked respondents if a full-time staff member was dedicated to technology support and

instruction. Differences based on gender were significant (χ^2 = 10.226, df = 1, and p = .001. Phi = .151), but these differences were more likely due to how technology is administered in elementary schools, which were more likely to have a female respondent, compared to middle and secondary schools, which were more likely to have male respondents.

Research Question Two: Interpretation of Incidents as Cyberbullying

Section three of the survey asked respondents whether or not they believed an incident represented a case of cyberbullying. Cyberbullying has been defined as behavior intended to cause harm to another, which is delivered repeatedly over time, where a power imbalance exists between the bully and the victim, and where the harassment is delivered using Internet or cell phone technology (Mishna et al, 2009; Patchin & Hinduja, 2006; Slonje and Smith, 2008; Vandebosch & Van Cleemput, 2008). If the respondent thought that the incident was an example of cyberbullying they could provide a rating of "somewhat agree" or "strongly agree". If the respondent did not think the incident represented an example of cyberbullying they could provide a rating of "somewhat disagree" or "strongly disagree". In response to research question two, these responses were first analyzed using the Rasch rating scale model. Next, the responses were analyzed to see if significant differences could be found based on the respondent's school level or gender.

Rasch analysis.

The Rasch analysis of section three of the survey revealed that a unidimensional construct of cyberbullying could be established, although a number of respondents provided responses that were either extreme or problematic in terms of predictability. Thirty-five respondents (7.6%) provided a rating of "strongly agree" to each of the twelve vignettes of section three. Three respondents provided a rating of "strongly disagree" to each vignette. These

responses are considered overly predictable. The ratings by these respondents are not useful because there is no indication that they were able to differentiate between the various scenarios. Another 27 respondents (5.9%) were removed from the Rasch analysis because their responses were flagged as extremely unpredictable.

Extremely predictable scores, ratings without variability, could be the result of a number of factors. Respondents could have rated the incidents without reading the prompts in order to finish the survey more quickly. If this were the case, one might expect an equal number of ratings of "strongly disagree" and "strongly agree". However, this was not the case. Instead, the overwhelming majority of those providing extreme responses provided all vignettes with a rating of "strongly agree". It seems more plausible that a significant number of the respondents providing extremely predictable answers might view any act of aggression that is mediated through Internet or cell phone technology as an act of cyberbullying. This was not the intention in creating the vignettes. Vignettes were meant to represent both examples and non-examples of cyberbullying.

The unpredictable scores, which were also flagged and removed, may be the result of an unclear understanding on the part of respondents of what cyberbullying is and what it is not. Since cyberbullying is a relatively new phenomenon, reconciling differences between physical, verbal, and relational forms of aggression and aggression mediated through technology may be problematic. Administrators may struggle in determining exactly what cyberbullying is supposed to look like, the result being unpredictable responses to the various scenarios.

The analysis of the person-item map allows one to examine which incidents were more often rated as indicative of cyberbullying and which incidents were less so. Interestingly, the two highest rated incidents, questions 34 and 35, involved aggression directed at teachers. The

incident that involved direct threats against a teacher was rated the highest overall. The second highest rated incident involved negative comments directed toward a male teacher and the questioning of his sexuality. Interestingly, in a scenario in which the principal was the primary target of student aggression (question 39), respondents rated the incident less like cyberbullying and it appeared third from the bottom on the person-item map. School officials may feel compelled to protect teachers and so incidents in which the teacher was the target were rated highly, while the incident in which the principal was the target was not.

A visual inspection of the person-item map (located in the appendices) allows one to examine the items that fall above and below the mean line. Items above the mean line, which is calibrated at 0.0 logits, could be said to surpass the threshold, based on respondents' ratings, as examples of cyberbullying. Items below the mean line do not meet this threshold. The difference between items above and below the mean line is that items above the line typically involve direct threats or calls for others to exclude or ostracize another student. Items below the mean line typically involve unwanted contact or insults. There are contradictory examples from the item-map as well. Item thirty-seven involves direct threats, but it falls below the mean line. Item thirty-four involves insults, but it was ranked above the mean line. The person-item map allows for a incidents of cyber-aggression to be viewed as a continuum, with items toward the top of the map ranked highest as examples of cyberbullying, items towards the bottom of the map ranked lowest as examples of cyberbullying, and the mean line at 0.0 logits as a threshold exemplifying the difference between incidents that school officials' rankings indicate are examples of cyberbullying and incidents that are not.

It should be noted that every incident presented in section three of the survey was more often than not rated as an episode of cyberbullying. Even the bottom incident on the person-item

map, question 31, in which a male student sends repeated requests via a social networking site to a female student, resulted in 60% of respondents indicating they could "somewhat agree" or "strongly agree" that the incident represented cyberbullying. This was not the intent in constructing the survey. Some incidents were meant to be representative of cyberbullying, based on bullying and cyberbullying research literature, but some incidents were intended to represent the distinction between problematic Internet experiences or other forms of aggression and bullying. One clear non-example, presented in item 37, involved two male students trading threats. This was meant to be an example of mutual aggression, which is not the same as bullying (Guerin and Hennessy, 2002; Olweus, 1993). There is no indication that one student is victimizing the other and yet 73% of respondents indicated they believed the scenario was representative of cyberbullying to some degree. The same circumstances that resulted in extreme and unpredictable scores may also explain the inability of administrators to distinguish between what is and what is not cyberbullying. The mere fact that aggressive behavior is coupled with technology may result in a school administrator identifying the behavior as cyberbullying. The other features of bullying which distinguish it from aggression, the physical, psychological, or social power imbalance, the repeated occurrences, and the intent to cause harm, may be less important, than the fact that technology is used in perpetrating aggression.

Differences based on school level.

Significant differences were found in responses to section three of the survey between officials from schools of different levels. Elementary school officials provided higher ratings, as indicated by mean ranks statistics, to every vignette of section three of the survey, except one, than either middle or secondary school officials. This indicates that, on average, elementary school officials found the incidents to be more representative of cyberbullying than either middle

or secondary school officials. Interestingly, middle school officials rated the incidents as less like cyberbullying compared to elementary or secondary school officials on ten out of the twelve items. These differences between mean ranks statistics of officials of different school levels were significant on four out of the twelve items. Item 31, depicting a female student repeatedly asking to be added as a friend on a social networking site, was intended to be another non-example of cyberbullying. It produced responses where differences were significant between elementary and middle school officials and middle school and secondary officials. Middle school officials rated it lowest, as indicated by mean ranks statistics among officials of different school levels. Item 39, which depicted students who created a web page to criticize the principal and teachers, was also meant to be a non-example of cyberbullying. Again, middle school officials rated it lowest among officials of different school levels. Differences were significant between elementary and middle school officials, with elementary school officials rating the incident higher as an example of cyberbullying. In these two examples middle school officials were better able to recognize that the incidents did not represent cyberbullying when compared to elementary and secondary school officials, although the majority of all school officials more likely than not indicated the vignettes represented examples of cyberbullying.

The fact that elementary school officials tended to rate incidents higher, indicating stronger agreement that the various scenarios were representative of cyberbullying is perhaps not surprising. A number of these incidents are sexually explicit and contain aggressive, threatening language, whether or not they represent examples of cyberbullying. These incidents may not be typical of the language or behavior that elementary school officials must confront, so the reaction that these vignettes provoke may be stronger. The language and context may not be as unfamiliar to the middle school official and so their reaction to the incidents may be tempered by the

understanding that some of the language or actions described, while unpleasant or inappropriate, may not rise to the level of cyberbullying. What is most interesting is that responses from secondary school officials often fall between those of elementary and middle school officials. Based on mean ranks statistics, secondary school officials rated every incident as more like cyberbullying than middle school officials. One might have expected secondary school officials to have even lower mean ranks statistics than middle school officials, because behavior described in the scenarios would be less shocking, but the reaction by secondary school officials was generally stronger than middle school officials and to one incident, it was even stronger than elementary school officials.

Differences based on respondent gender.

Responses to section three were also analyzed to see if significant differences could be found between male and female respondents. Significant differences were found on eight of the twelve items. Mean ranks statistics indicated that on average female respondents rated each item higher, or more like cyberbullying, than male respondents. There does not appear to be a pattern that would predict when differences between male and female respondents would be significant and when they would not. Incidents where differences were significant include both non-examples and examples of cyberbullying (item 37 is a non-example and item 41 is an example). Incidents where there was no significant difference also included non-examples and examples (item 36 is a non-example and item 33 is an example). Item 39, where the principal and teachers are criticized via a social networking site, again produced responses where differences were found to be significant. Based on mean ranks statistics, female respondents, on average, rated the incident higher than male respondents, resulting in the largest effect size, r = .225, of any incident from section three.

Differences based on school level with gender as a control variable.

Since there were significant differences in respondent gender, based on school level (elementary – majority female, middle and secondary – majority male), it is difficult to say whether differences in responses to section three of the survey were due to the school level or the gender of the respondent. A separate analysis was conducted to see if significant differences could be found between schools of different levels when controlling for gender and between male and female respondents when controlling for school level.

When controlling for respondent gender, only item 41, in which a male student is photographed by a female student and is then teased as the picture is posted on a social networking site, produced responses where differences were significant based on school level. Although differences were significant, a visual analysis of the cross-tabs table does not reveal a pattern between expected responses and actual responses that would explain the difference.

Differences based on gender with school level as a control variable.

When school level was used as a control variable, only item 39, in which the school principal and several teachers were criticized on a social networking site, produced responses where differences were significant between male and female respondents. Sixty-four percent (64%) of female elementary school officials provided a rating of "strongly agree" when asked if the incident represented an example of cyberbullying, compared to 31% of male elementary school respondents. Three survey items depicted scenarios in which school officials were the targets of harassment (items 34, 35, and 39). Only item 39 included the principal. The other two incidents depicted harassment directed toward an individual teacher. It is unclear why female elementary school officials would be significantly more likely to endorse an incident where the principal was the target of harassment as an example of cyberbullying compared to male

elementary school officials. Some school officials may interpret all aggression mediated by Internet or cell phone technology as cyberbullying.

Interpretations of the various incidents produced differences based on school level and gender. There were no clear patterns that would provide an explanation to those differences. Male school officials recognized more subtle forms of relational aggression between female students as examples of cyberbullying and elementary school officials recognized incidents, which involved behaviors more typical of older students as examples of cyberbullying. There are two main findings, based on how school officials rated the various incidents. First, school officials have a difficult time distinguishing between what is and is not cyberbullying. The majority of ratings to all of the incidents in section three were "somewhat agree" or "strongly agree". Secondly, aggression directed at teachers will provoke school officials to overwhelmingly recognize that aggression as cyberbullying, whether or nor it qualifies as such according to the research-based definition. School officials may feel compelled to protect teachers from any type of aggression perpetrated by students. Overwhelmingly labeling the incident as an example of cyberbullying may be an indication that aggression directed at teachers is most abhorrent to school officials.

Research Question Three: Disciplinary Response Choice

Section four of the survey asked respondents to provide a typical disciplinary response, given an incident of cyberbullying. Eight disciplinary options were presented ranging from "no action" to "expulsion". All incidents were meant to represent clear-cut cases of cyberbullying. Some incidents included direct threats, others involved humiliating or disparaging remarks, others included gossip and rumor spreading, and still others involved ostracism or exclusion. Respondents reported being uncomfortable with being asked to select only one disciplinary

response. Some paper and pencil surveys were returned with multiple choices selected, even though the instructions asked respondents to limit their disciplinary response choice to the one that would be most typical given the involvement of an average student. In response to research question three, a latent class analysis was first conducted and then responses were investigated for differences based on school level and respondent gender.

Latent class analysis.

First, data were analyzed to see if subgroups of respondents could be identified through a latent class analysis of the responses. Interestingly, the two-class solution proved optimal, which may indicate that school level plays a strong role in predicting disciplinary response choice. Latent class group one was comprised of all of the elementary school official respondents, a majority of other school official respondents, and a minority of middle and secondary school official respondents. Latent class group two was comprised of 76.9% of the secondary school official respondents, a majority of middle school official respondents, a minority of other school official respondents, and no elementary school official respondents. The major difference between the two classes is the assignment of all elementary school officials to one group and the assignment of more than three-quarters of secondary school officials to the second group. Middle and other school officials were assigned based on responses that could be said to resemble either the responses of elementary or secondary school officials.

Differences based on school level.

Next, the responses were analyzed to see if significant differences could be found based on the respondent's school level and gender. Eight of the twelve items from section four produced responses where differences were significant based on the level of the school of the respondent. It should be noted that the response category "Suspension" was selected as the most

popular choice for every example of cyberbullying described in section four of the survey. Skiba and Peterson (1999) reported that school officials have adopted "Zero Tolerance" policies to address school violence, but often overuse suspension, even for minor infractions. This may be a way educators communicate the seriousness of an infraction, in order to prevent others from acting in a similar manner. To give an indication of the range of the selection of "Suspension" by respondents, consider the following two examples: Item 51 asked school officials to provide a typical disciplinary response to situation where one student photographed another student changing in the school's locker room and then forwarded that photograph to other students. Suspension was chosen as the likely typical response by 74.9% of respondents. Item 50 asked school officials for a disciplinary response to an incident in which a female student asked classmates to ignore a particular student. "Suspension" was selected by 31.8% of school officials. In both cases, as with all of the examples of cyberbullying, "Suspension" was the most popular of the eight disciplinary response choices. On average, "Suspension" was selected as the disciplinary response choice, across the twelve vignettes, almost 49% of the time. The next highest average response choice was parent conference at 20.1% followed by student conference at approximately 8.7% and detention at 7.4%.

In general the differences by school level usually followed a familiar pattern. Secondary school officials were more willing to select the disciplinary response choice "Student Conference" than either elementary or middle school officials. Secondary school officials may feel more comfortable sitting down with students and discussing behavioral problems first, before more punitive actions are taken. Elementary and middle school officials may not feel that a student conference is appropriate, given that many of the incidents involved serious and aggressive behaviors.

Middle school officials selected "Suspension" more frequently than either elementary or secondary school officials, although, as previously stated, it was the top disciplinary choice at all school levels. On average, secondary school officials chose "Suspension" less than elementary school officials. The fact that suspension was the most popular choice for all of the vignettes and across all school levels is surprising, although perhaps it should not be. "It is interesting to note that the word *discipline* comes from the same Latin root as the word *disciple*: *discipere*, to teach or comprehend" (Skiba and Peterson, 2000, p. 342). School officials may interpret the word discipline as a synonym for punishment, rather than as a form of education. Gottfredson and Gottfredson (2001) reported that student suspension is frequently used to address nonviolent offenses and that "the large percentage of schools reporting the 'automatic' suspension or expulsion of students is surprising" (p. 336). Removing a student from school may have been selected most by school officials for any number of reasons, including the desire to teach the offending student a lesson, to protect other students at the school, or to send a message to parents about the seriousness of the infraction. Given the fact that the school officials report that bullying and cyberbullying are relatively rare occurrences, it may not be surprising that suspension was selected so often. If school officials saw cyberbullying as a more prevalent problem, suspension may not have been such an easy choice. Since over half of the respondents reported that there had been no instances of cyberbullying in the past month, perhaps it was easier to choose suspension as an "automatic" choice.

In general, there was more variation in the selection of disciplinary response choices by secondary school officials. Elementary school officials were much more willing to select "Detention" and "Expulsion" as typical disciplinary responses compared to middle and secondary school officials. "Parent Conference" was a popular selection at all school levels,

although the proportion of middle and secondary school officials who selected it was usually greater than the proportion of elementary school officials.

Differences based on school level with gender as a control variable.

Since gender differences between officials of different school levels are significant, with the majority of elementary school officials being female and the majority of middle and secondary school officials being male, it is a challenge to disentangle whether differences in survey responses are attributable to gender, school level, or both. When gender was used as a control variable for school level significant differences were found on four out of the twelve items. On three of the four items there were significant differences by school level for male respondents. On the fourth item there were significant differences by school level for female respondents. On three of the four items, where there were significant differences by school level when controlling for gender, homosexuality was a component of the vignette. These three were the only vignettes out of the twelve where homosexuality was a factor in the cyberbullying. The fourth item was also sexual in nature, but involved a male student ranking female students in terms of physical attractiveness. In general, elementary and middle school officials were more willing to choose "Suspension" as a disciplinary response and secondary school officials were more willing to choose "Parent Conference" or "Student Conference" as a response.

The fact that vignettes focusing on homosexuality produced significant differences by school level may not be surprising. Secondary school officials may have more experience dealing with issues of sexuality and therefore may be more willing to work with students and parents to deal with problems, rather than use suspension or other more punitive measures. What is surprising is that out of the twelve vignettes, the ones that included homosexuality as a component were less likely to produce a response of suspension. School officials in general dealt

with these situations in a less punitive manner. If one were to rank the twelve vignettes by use of suspension the three vignettes that included homosexuality would have been ranked seventh, tenth, and eleventh out of twelve. "Parent Conference" was a close second as a disciplinary response choice in all of these vignettes. It is possible that school officials are less willing to use punitive disciplinary measures such as suspension when teasing or harassment focuses on sexual preference. It is not clear if, by selecting "Parent Conference", school officials are shifting responsibility for monitoring and remediating cyberbullying related to sexual orientation away from the school and back onto parents. If the choice of "Suspension" by school officials indicated that the incident described in the vignette were more serious, then the comparatively low use of "Suspension" in vignettes, which included homosexuality would mean school officials felt the form of cyberbullying described were less serious. This is not to say that suspension should be the disciplinary response to cyberbullying, but is offered as an example of how moral evaluations by school officials may influence how cyberbullying is addressed.

Differences based on respondent gender.

When disciplinary response choice data were analyzed based on the gender of the respondent, differences were significant on eight of the twelve items of section four. The biggest discrepancy between female and male respondents on six of those eight items where differences were significant was in the use of suspension. In each of the six vignettes female respondents chose suspension as a typical disciplinary response significantly more than male respondents. This is not to say that female respondents prefer more punitive forms of discipline. With the gender differences of the three school levels it is difficult to separate the effects of gender and the effects of school level in responses.

Differences based on gender with school level as a control variable.

When school level was used as a control variable for gender, significant differences were found on six of the twelve items. Differences were found across school levels. On three items differences were at the secondary level, on two items differences were at the elementary level, and on one item differences were at the middle school level. Male respondents chose "parent conference" as a response choice more often than female respondents on each of the six items where differences were significant. Female respondents chose "suspension" more often than male respondents on five of the six items and chose "expulsion" more than male respondents on the remaining item. These results seem contrary to some studies (Oplatka and Atias, 2007), which support the notion that male principals embrace a leadership style characterized by "sanctions, power, punishment, and prohibition" (p.55) and female principals "focused on relational techniques to lesson and handle disruptive behaviors" (p. 55).

Differences in how school officials understand the problem of cyberbullying are to be expected based on school level. Younger students may have little experience with cyberbullying. Most prevalence studies have focused on middle and high school students and their experiences with cyberbullying (Agatston et al., 2007; Beran and Li, 2005; Calvete et al., 2010; Erdur-Baker, 2010; Hinduja and Patchin, 2007; Juvonen and Gross, 2008; Kowalksi and Limber, 2007; Slonje and Smith, 2008; Smith et al, 2008; Sourander et al., 2010; Werner et al., 2010).

Conclusion

Although there does not appear to be a lack of technological hardware in public schools, based on results from this survey and previous research (Gray et al., 2010), there does appear to be a lack of school staff to support the use and administration of that technology. Almost half of the respondents to the SSOC indicated that they did not have a staff member dedicated to

technology use and instruction. The primary method of prevention seems to be the use of blocking and filtering software, which is mandated by the Children's Internet Protection Act (Wells & Lewis, 2006). Most troubling is that more than half of respondents reported that there had been no instances of cyberbullying at their schools in the past month. In general, the various cyberbullying prevalence studies reported that 25 – 40% of students have been involved with cyberbullying (Tokunaga, 2010). Although there does appear to be differences in the way school officials approach prevention and intervention, these differences are more likely the result of difference in the way technology is administered at the elementary school level compare to the middle and secondary school levels.

The differences found in interpretations of incidents as examples of cyberbullying are interesting. It appears elementary school officials are more likely to endorse any example of cyber-aggression as an act of cyberbullying compared to middle and secondary school officials. Elementary school officials may have less experience dealing with student displays of cyber-aggression and so elementary school officials may be inclined to call all acts of aggression involving some form of technology an act of cyberbullying. The differences based on respondent gender are most likely a reflection of differences in how elementary school officials interpret cyber-aggression, as the majority of elementary school official respondents were female.

The differences found in the selection of disciplinary response choice were also interesting. Elementary school officials more often selected more punitive forms of discipline such as "suspension" and "expulsion". The selection of these more punitive measures at the elementary school may be an indication that school officials at the elementary level are trying to send a message about the seriousness of the offense. The fact that secondary school officials were more likely to select "student and parent conference" may be an indication that these types

of problems are more common at the secondary level. The differences in disciplinary response choice based on respondent gender are interesting. Female respondents in general were more likely to select more punitive disciplinary measures. This may be a reflection of differences based on school level, but interestingly, even female respondents at the secondary level provided more punitive responses compared to male respondents at the secondary level. This finding contradicts previous research on principal gender and discipline.

Implications

Implications for future research.

Researchers have defined bullying in such a way as to exclude less serious acts of aggression (Olweus, 1978). Given that the majority of respondents interpreted every incident as an example of cyberbullying, it seems clear that school officials are not making the same distinction between less serious problematic Internet encounters and cyberbullying. If we are to intervene on behalf of students, it is important that what makes cyberbullying distinctive from less serious forms of online aggression is clear to educators. Future research should endeavor to understand the factors, which affect how educators define and Interpret cyberbullying. Also, as studies have demonstrated a discrepancy between student and staff perceptions of bullying (Bradshaw et al., 2007), similar studies would be useful with respect to cyberbullying. Although this discrepancy can be inferred here, based on previous studies on the prevalence of cyberbullying (Tokunaga, 2010) and school official reports of victimization here, it seems apparent that school officials have severely underestimated the problem of cyberbullying in their schools.

Implications for policy makers.

Policy makers have done a good job of raising the awareness of the problems of bullying and cyberbullying. Almost every state has a law or statute, which addresses bullying in schools. Many of these laws and statutes include a provision on cyberbullying (Stuart-Cassel et al., 2011). What should be clear to policy makers is that there is not agreement, between researchers and educators, as to how cyberbullying is defined. If cyberbullying is defined broadly in public policy, then an overzealous school official could interpret every problematic encounter between students involving the Internet or a cell phone as an act of cyberbullying. If cyberbullying is defined too narrowly, then very few incidents will be seen as such. The courts have provided very little guidance to policy makers, as to where the school's responsibility begins and ends and to what lengths school officials must go to ensure student safety on campus and in cyberspace (King, 2010). This guidance is crucial, so that policy makers can provide the educational leadership an indication of how to proceed, given the evolving technological landscape in schools.

Implications for school leaders.

Educators have an opportunity to teach students about appropriate communication in a cyber-environment. Rather than completely restricting student access to social networking sites, as more than 95% of school officials reported in the School Survey on Cyberbullying, educators could use social networking sites as venues to teach appropriate online interactions. They could teach students about concepts such as disinhibition, discussed by Mason (2008), so that students might recognize their own willingness to share personal information or freely criticize others, because they might be less concerned about the effects of those types of communications in a cyber-environment. Instead school officials have chosen to block social networking sites and

eliminate the opportunity to provide students guidance about potential pitfalls and strategies to avoid or block harassment from others in online communications. In the absence of guidance from educators many students may be navigating cyberspace and encountering aggression without support and without the knowledge of how to reduce their risk for cyberbullying and the negative outcomes associated with it.

The reliance on punitive disciplinary measures as teaching tools, as indicated by the fact that suspension was the overwhelming choice for all of the cyberbullying incidents in section four of the survey, is troubling. Suspension and expulsion have not proven effective in reducing disciplinary problems within a school (Noguera, 1995). Although using suspension as a disciplinary tool may send a message to parents and students, that school officials take the problem of cyberbullying seriously, there is no evidence that it will reduce student victimization in cyberspace. Relying on suspension to teach students about cyberbullying and appropriate online communications may exacerbate the development of behavioral problems (Morrison & Skiba, 2001) and may impair the bond between student and school, making educators less effective at reaching those students who could benefit from their guidance.

Limitations

This study has been a first attempt to explore how school officials understand the problem of cyberbullying. A limitation of a study of this nature is the reliance on respondents to be honest and accurate. Officials may have felt the need to overestimate the preventative actions they have taken to address cyberbullying and they may have underestimated the prevalence of victimization in their schools. Although every precaution was taken to ensure a representative sample of school officials, elementary school officials have been underrepresented among respondents and school officials from "other" schools have been overrepresented. Caution must

be taken in generalizing the results, given the differences between the sample and the resulting

pool of respondents.

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APPENDICES

APPENDIX A. PRE-NOTICE LETTER
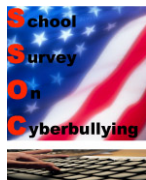
<u>School Survey on Cyberbullying</u>

May 1, 2011

Dear Principal or School Administrator,

I am writing to ask for your help with an important study, being conducted as part of my dissertation research through the University of Illinois at Chicago, to understand how schools are responding to the problem of cyberbullying. In the next few days you will receive a request to participate in this project by answering questions about how you or an appropriate and knowledgeable school official, such as an assistant principal or school disciplinarian, perceive the school's role in addressing cyberbullying. Your participation is completely voluntary. You or your school will not be identified as having been selected to participate in this survey.
I would like to make it as easy and enjoyable to complete the survey. If you would prefer to take the survey electronically you may do so by accessing the survey via the Internet using the following link:

http://www.surveymonkey.com/s/SCHOOL-SURVEY-ON-CYBERBULLYING

You will need the five-digit identification number located next to your school's name on the address label to do this. If you prefer to take the survey using a paper-and-pencil form, you can do this instead by completing the survey after you receive it in a few days and mailing it back using the postage-paid, addressed envelope provided. I am writing in advance, because many people like to know ahead of time that they will be asked to fill out a questionnaire. This research can only be successful with the participation of those with knowledge of current school practices and policies.
As a token of my appreciation for participating in the survey, you will have the chance to receive a copy of a commercially available cyberbullying prevention curriculum. When data analysis of the survey is complete, an executive summary of the results will be provided to you.
I hope you will take the approximately 15 minutes necessary to assist me with this endeavor. Most of all I hope you enjoy the opportunity to share your thoughts and opinions on this important topic schools are currently confronting. If you have any questions about this study please feel free to contact me at 708-948-7350. You can also contact me at jsnake2@uic.edu.

Best Wishes,

John B. Snakenborg
Doctoral Candidate, University of Illinois at Chicago

APPENDIX B. COVER LETTER
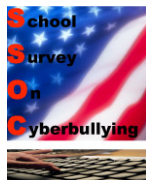
<u>School Survey on Cyberbullying</u>

May 11, 2011

Dear Principal or School Administrator,

I am writing to ask for your help in order to understand how schools are responding to the problem of cyberbullying. There are no studies, which look at this issue from the perspective of school officials. Often, the way we learn about new phenomena, such as cyberbullying, is through a survey of those with the knowledge and experience to provide valuable insight. Your school is one of the few that has been randomly selected to assist in this effort.

It would also be acceptable to have someone else, who is knowledgeable about the policies and practices of the school, such as the assistant principal or the school disciplinarian, fill out the survey. It should only take about 15 minutes to complete.

Your participation is voluntary and your responses will be kept confidential. You or your school will never be identified as having participated in the survey. The five-digit number, next to your school's name will be used to identify which schools have responded to the survey. The name of your school will be kept separate from the identification number, so that your responses will remain completely anonymous. If you have any questions about this study please feel free to contact me at 708-948-7350. You can also contact me at jsnake2@uic.edu. This research project has been reviewed and approved by the University of Illinois at Chicago Internal Review Board.

By taking a few moments to share your perspectives and your insights about the problem of cyberbullying you will be helping me a great deal, and as a token of my appreciation you will have the opportunity to win a valuable resource, a cyberbullying prevention curriculum, to help your school address the problem of bullying. When data analysis of the survey is complete, an executive summary of the results will be provided to you.

If you would prefer to take the survey electronically you may do so by accessing the survey via the Internet using the following link:

http://www.surveymonkey.com/s/SCHOOL-SURVEY-ON-CYBERBULLYING

You will need the five-digit identification number located next to your school's name to do this.

Thank You Very Much! I look forward to receiving your responses.

John B. Snakenborg
Doctoral Candidate, University of Illinois at Chicago

APPENDIX C. THANK YOU CARD

Front of Card
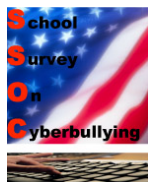
School Survey on Cyberbullying
University of Illinois at Chicago
John Snakenborg
932 N. Lombard Ave.
Oak Park, IL 60302

Ms. School Principal Smith
Washington Elementary School   *ID # 12345*
1234 Main Street.
Springfield, IL 62701

Back of Card

October 15, 2010

Dear Principal Smith

Last week a questionnaire was mailed to you because your school was randomly selected to help in a study about how schools are responding to the problem of cyberbullying.

If someone at your school has already completed and returned the survey, please accept my sincere thanks. If not please have someone with knowledge of the policies and practices of the school do so. I am especially grateful for your help with this important study.

If you did not receive a survey or it was misplaced, please call me at 708-948-7350 and I will get another one in the mail for you today. You can also contact me at jsnake2@uic.edu.

If you would prefer to take the survey electronically you may do so by accessing the survey via the Internet using the following link: http://www.surveymonkey.com/s/SCHOOL-SURVEY-ON-CYBERBULLYING. You will need the five-digit identification number located next to your school's name to do this.

Sincerely,

John B. Snakenborg
Doctoral Candidate, University of Illinois at Chicago

APPENDIX D. SCHOOL SURVEY ON CYBERBULLYING
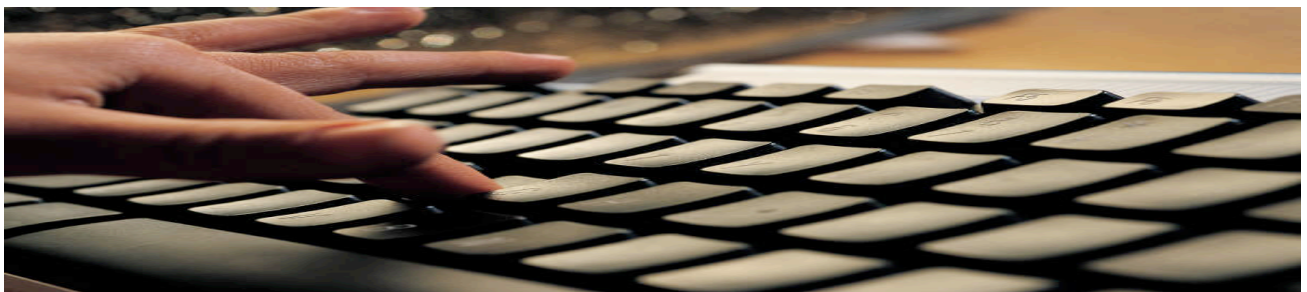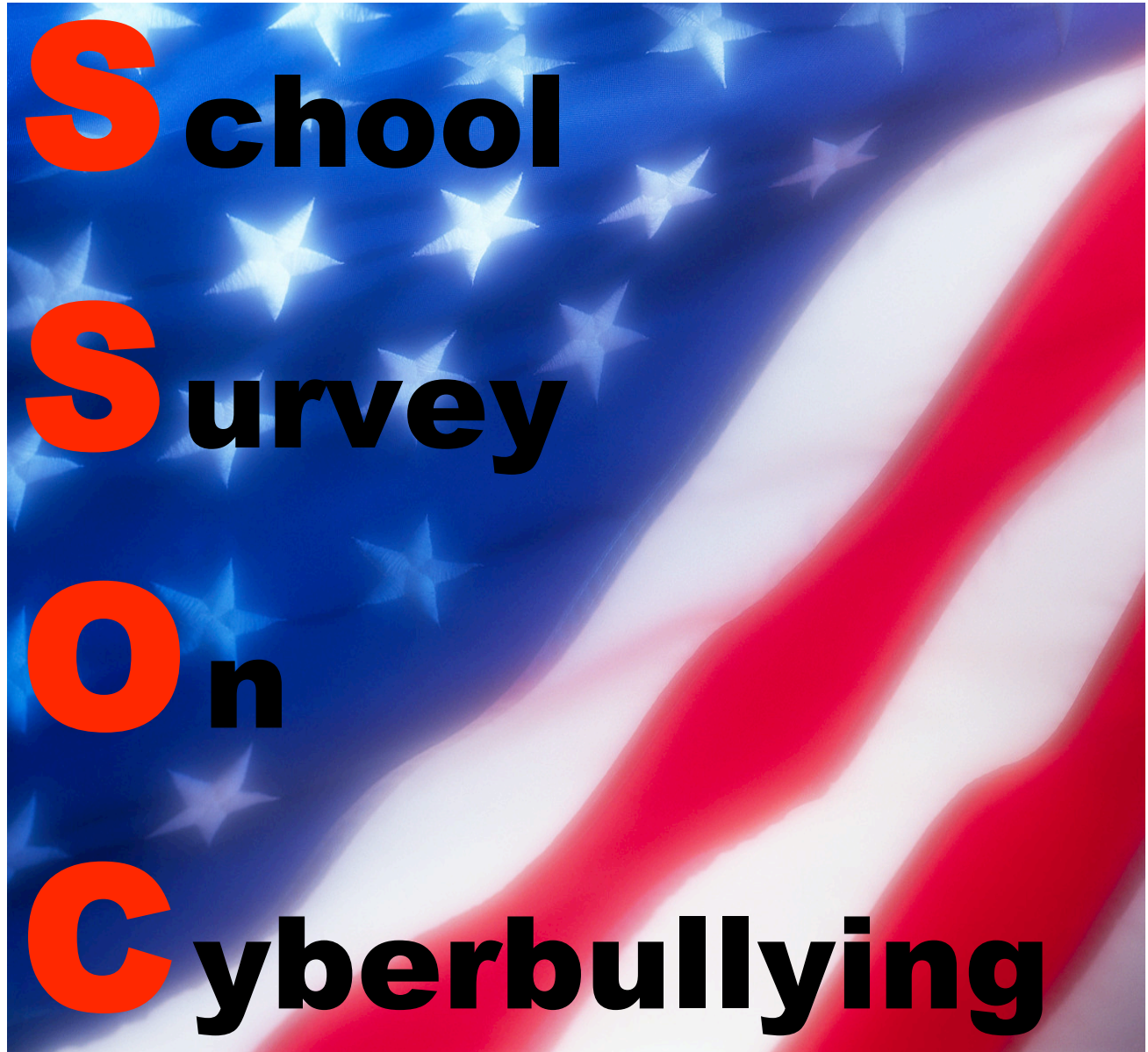
APPENDIX D. SCHOOL SURVEY ON CYBERBULLYING

Research Information and Waiver of Consent for Participation

Remember, your participation in this research project is voluntary. You or your school will not be identified as having been selected to complete this survey. Every conceivable precaution will be taken to ensure that your identity will remain confidential and your participation will remain anonymous. The only record of your participation is the original mailing list. This mailing list is kept in a password-protected folder on a password-protected computer. You are encouraged to be honest in your responses. If you have any questions about this survey, please contact the principal investigator, John Snakenborg, at 708-948-7350.

Your participation in the School Survey on Cyberbullying will help us better understand how school officials are confronting the problem of cyberbullying. It is important to find out what measures are being taken to protect students as well as when and how school officials are intervening in situations where cyber-environments are used for the purpose of bullying.

In gratitude for your participation the results of this dissertation research project will be shared with participating schools in the form of an executive summary. In addition participating schools will have the opportunity to win an anti-cyberbullying curriculum to help in the effort to reduce all types of student victimization.

Instructions for completing the survey

Please circle what you believe to be the most appropriate response to the question or statement. If a question asks for a written response, please use the space provided. Please provide only one answer per question. If you are responsible for more than one school, please respond to questions with respect to the particular school identified on the address label.

APPENDIX D. SCHOOL SURVEY ON CYBERBULLYING

Section I. School and Respondent Information

1. Please enter the 5-digit code next to your school's name on the mailing label:

    _____   _____   _____   _____   _____

2. What is your role in the school?

    Principal   Asst. Principal   Disciplinarian   Other: _____

3. How long have you served in your current role?   _____

4. What is your gender?

    Male   Female

5. What is the lowest grade level served at your school?

    Pre-K   K   1   2   3   4   5   6   7   8   9   10   11   12

6. What is the highest grade level served at your school?

    Pre-K   K   1   2   3   4   5   6   7   8   9   10   11   12

7. How many students are enrolled at the school in which you are employed?

    Less than 300   300 to 999   1,000 or more

8. What is the percentage of students eligible to receive free or reduced price lunch?

    Less than 35%   35 to 49%   50 to 74%   75% or more

9. What is the combined percentage of African American, Latino, Asian/Pacific Islander, and American Indian/Alaska Native students?

    Less than 6%   6 to 20%   21 to 49%   50% or more

Section II. School Practices and Policies

10. Does the school have a separate student computer laboratory?

    Yes   No

11. Do computers in the school's computer laboratory have Internet access?

    Yes   No

12. Do most classrooms have a computer with Internet access available for student use?

    Yes   No

APPENDIX D. SCHOOL SURVEY ON CYBERBULLYING

13. Are students provided an email account through the school or school district?

Yes   No

14. Is there a full-time staff member at the school whose only responsibilities are technology support and/or instructional use of technology?

Yes   No

15. Does a school staff member have the ability to access and monitor student email communication that occurs through the school or district email system?

Yes   No   Not Applicable

16. Are students blocked from visiting social networking sites, such as Facebook, when using school computers?

Yes   No

17. Are students allowed to access outside email accounts from school computers?

Yes   No

18. Have school personnel found students attempting to get around the school's blocking or filtering software by using proxy websites or other forbidden methods?

Yes   No

19. Are students taught appropriate Internet usage in your school's technology program?

Yes   No

20. Does your school use a curriculum, which specifically addresses bullying, including cyberbullying?

Yes   No

21. What is the name of that curriculum? _____

22. Does your school allow students to possess cell telephones while on campus?

Yes   No

23. Are there areas of the school (locker rooms, rest rooms, classrooms, etc.) where student possession of cell phones is restricted or prohibited?

Yes   No

24. Does your school have specific rules prohibiting student cell phone use at school?

Yes   No

APPENDIX D. SCHOOL SURVEY ON CYBERBULLYING

25. In the past 30 days approximately how many instances have students
    been found inappropriately using personal cell phones during school hours? _____

26. Has your school communicated with parents either in writing or during formal meetings
    about policies regarding student cell phone possession and use at school?

    Yes   No

27. In the past month approximately how many instances of
    bullying (including cyberbullying) have been reported at your school? _____

28. Of those instances of bullying that have been
    reported how many would you characterize as cyberbullying? _____

29. Has your school communicated with parents either in writing or during formal meetings
    about school policies regarding bullying, including cyberbullying.

    Yes   No

Section III. Is This Cyberbullying?   *(circle one choice only)*

   *To what extent do you agree or disagree that the incident described in the brief
   scenario constitutes cyberbullying?*

30. A female student sends an email to a female friend disclosing personal and potentially
    embarrassing information. After having an argument, the recipient forwards the email
    with the sensitive information to others. The student who originally sent the email says
    she is embarrassed and complains to a school official.

    | Strongly | Somewhat | Somewhat | Strongly |
    | Disagree | Disagree | Agree | Agree |

31. A male student repeatedly sends requests to a female student, asking to be added as a
    friend on a social networking site. The female student complains to school officials that
    the male student is harassing her.

    | Strongly | Somewhat | Somewhat | Strongly |
    | Disagree | Disagree | Agree | Agree |

32. A female student sends an email to several friends reporting that another female student
    has been flirting with her boyfriend. Within this email she insults the student's
    intelligence and appearance, encouraging her friends to exclude the student from their
    lunch group.

    | Strongly | Somewhat | Somewhat | Strongly |
    | Disagree | Disagree | Agree | Agree |

APPENDIX D. SCHOOL SURVEY ON CYBERBULLYING

33. A male student is found using another male student's email account to send sexually explicit messages to female students.

| Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |

34. A male student creates a web page on a social networking site, which contains negative comments and questions a male teacher's sexuality. The site includes photos of the teacher.

| Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |

35. A female student creates a web page on a social networking site that targets a particular teacher and contains threats of violence, "I want to see you die!" and uses violent imagery (Images of flames and blood).

| Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |

36. A female student repeatedly sends unwanted email communications (up to 15 a day) to another female student. The student, after asking the other student to stop, has complained to the school.

| Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |

37. Two male students trade threats, "I'm gonna kick ur ass!" and "I'd like to see you try wuss" via cell phone text message.

| Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |

38. A male student forwards a photograph of another male student, taken at a school dance, through the school email system to several friends with the caption, "Look at this fool Dance!" The student in the photo says he is embarrassed and complains to a teacher.

| Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |

39. A group of male and female students have contributed to a web page on a social networking site, which criticizes the school's principal and several teachers using derogatory and explicit language.

| Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |

40. A female student sends another female student a text message during school hours. The text message contains the following: "U better watch ur ass bitch".

| Strongly Disagree | Somewhat Disagree | Somewhat Agree | Strongly Agree |

APPENDIX D. SCHOOL SURVEY ON CYBERBULLYING

41. A female student posts a photograph of a male student with his shirt off, taken at a school event (he was changing his basketball uniform), to her social networking page. She has altered the photograph, adding the caption "who could love this scrawny lil' boy?" Several other students have posted negative comments about the student in the photo. The male student has complained to the school.

Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree

Section IV. Disciplinary Response   *(circle one choice only)*

If an average student were found engaging in the behavior described in the following scenarios, what would the typical disciplinary response be?

42. A female student sends another female student a number of different cell phone text messages containing disparaging remarks, "U R Fat, SLUT!!!, Why don't U kill yourself?".

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

43. A male student creates a web page on a social networking site, which ranks female students of the school based on looks and physiques using sexually explicit and derogatory language.

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

44. A female student sends an email to a number of her classmates. In the email she insinuates that her former boyfriend might be homosexual and that he seemed more interested in her older brother than her.

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

45. A female student is found using another student's email account, sending out messages to other students, which contain negative remarks, "You're such an idiot!" and threats, "I'm gonna destroy you".

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

46. A male student is found using another male student's email account to send threatening messages to teachers and students.

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

47. A male student sends another male student a text message saying, "I'll be waiting for you after school. U R DEAD!"

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

APPENDIX D. SCHOOL SURVEY ON CYBERBULLYING

48. A male student alters and posts a photograph of a female student to his social networking page, adding a caption hinting that the female student is homosexual, "Butch?"

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

49. A female student sends a photo of herself to a male student from her cell phone. The photo is sexual in nature. The male student forwards the photograph of the female student wearing a brassiere and panties to several other students from his personal email account. The female student finds out that the image has been forwarded and complains to school officials.

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

50. A female student sends an email to all of the members of her homeroom. In the email she asks that everyone ignore another female member of the class. She asks her classmates to walk away from the student if she approaches and to ignore any conversations she tries to initiate.

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

51. A male student uses his cell phone to take a picture of another male student while he is changing in the locker room. The student then sends the picture to several male and female friends via cell phone text message.

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

52. A female student sends a male student, with whom she previously had a relationship, an email telling him to watch his back because some friends of hers want to "kick his ass".

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

53. A male student teases another male student in a conversation on a social networking site. The student insinuates that the other student is homosexual and mocks the way he talks, acts and dresses. School officials become aware of the posting after the parent of the targeted student complains.

No Action	Student Conference	Parent Conference	Loss of Privilege	Loss of Computer Access	Detention	Suspension	Expulsion

Thank you for completing the survey. Your input is extremely valuable.

APPENDIX E. RASCH SUMMARY OF CATEGORY STRUCTURE

```
-------------------------------------------------------------------
|CATEGORY   OBSERVED|OBSVD SAMPLE|INFIT OUTFIT||STRUCTURE|CATEGORY|
|LABEL SCORE COUNT %|AVRGE EXPECT|  MNSQ  MNSQ||CALIBRATN| MEASURE|
|-------------------+------------+------------++---------+--------|
|  1   1    220   5|  -.88 -1.17|  1.31  1.64||   NONE  |( -2.43)| 1 strongly disagree
|  2   2    483  10|   .28   .30|   .99  1.10||  -1.12  |  -.72  | 2 somewhat disagree
|  3   3   1201  25|  1.26  1.42|   .95   .66||   -.06  |   .70  | 3 somewhat agree
|  4   4   2912  60|  2.80  2.76|  1.04  1.10||   1.18  |(  2.46)| 4 Strongly agree
|-------------------+------------+------------++---------+--------|
|MISSING     32   1|  2.09      |            ||         |        |
-------------------------------------------------------------------
OBSERVED AVERAGE is mean of measures in category. It is not a parameter estimate.


-------------------------------------------------------------------------
|CATEGORY    STRUCTURE  |   SCORE-TO-MEASURE  | 50% CUM.| COHERENCE|ESTIM|
| LABEL    MEASURE  S.E.|  AT CAT. ----ZONE----|PROBABLTY| M->C C->M|DISCR|
|-----------------------+---------------------+---------+----------+-----|
|   1       NONE        |( -2.43) -INF  -1.64|         |  70%  25%|     | 1 strongly disagree
|   2      -1.12    .09 |   -.72 -1.64   -.02|  -1.38  |  38%  30%|  .67| 2 somewhat disagree
|   3       -.06    .05 |    .70  -.02   1.65|   -.03  |  45%  55%|  .88| 3 somewhat agree
|   4       1.18    .04 |(  2.46)  1.65  +INF|   1.41  |  83%  83%| 1.12| 4 Strongly agree
-------------------------------------------------------------------------
M->C = Does Measure imply Category?
C->M = Does Category imply Measure?
```

APPENDIX F. RASCH CATEGORY PROBABILITIES

```
P     -+---------+---------+---------+---------+---------+---------+-
R  1.0 +                                                            +
O      |                                                            |
B      |                                                            |
A      |111                                                      444|
B   .8 +   111                                                 444  +
I      |     11                                              44      |
L      |       111                                         44        |
I      |         1                                       44          |
T   .6 +          11                                    44           +
Y      |            11                                44             |
    .5 +             11                             4                +
O      |               1 2222222        3333333333*4                |
F   .4 +              222*1       22233          4 333               +
       |             222      1    333222     44       333           |
R      |            222       11 33      22  44          333         |
E      |           222         3*1          **             33        |
S   .2 +     222             33    11    44  22              3333     +
P      |2222            333         11 44      222               333 |
O      |            3333            44*11         2222              |
N      |         333333       444444      111111       2222222      |
S   .0 +********44444444444444                111111111111111********+
E      -+---------+---------+---------+---------+---------+---------+-
       -3        -2        -1         0         1         2         3
            SCHOOL OFFICIAL Is This Cyberbullying? MEASURE
```

                    1 = strongly disagree
                    2 = somewhat disagree
                     3 = somewhat agree
                     4 = Strongly agree

APPENDIX G. RASCH ITEM MISFIT ORDER

```
-------------------------------------------------------------------------------
|ENTRY   RAW              MODEL|   INFIT  |  OUTFIT  |PTMEA|EXACT MATCH|  Is This       |
|NUMBER  SCORE  COUNT  MEASURE  S.E. |MNSQ  ZSTD|MNSQ  ZSTD|CORR.| OBS%  EXP%| Cyberbullying? |
|------------------------------------+----------+----------+-----+----------+----------------|
|     2   1022    403    1.98    .07|1.11   1.7|1.57   6.1|A .61| 47.4  47.3| Question 31    |
|     4   1489    402    -.76    .11|1.49   4.1|1.08    .6|B .57| 80.1  77.3| Question 33    |
|     6   1542    402   -1.56    .14|1.41   2.7| .79   -.9|C .56| 91.3  87.3| Question 35    |
|     7   1379    402     .18    .08|1.36   4.1|1.28   2.5|D .53| 55.7  62.4| Question 36    |
|     8   1194    401    1.19    .07|1.03    .4|1.15   1.8|E .67| 50.4  51.5| Question 37    |
|     5   1513    402   -1.07    .12|1.10    .9| .69  -1.9|F .61| 86.1  81.6| Question 34    |
|    10   1227    401    1.03    .07|1.02    .4|1.05    .6|f .65| 53.1  52.2| Question 39    |
|     3   1439    400    -.32    .09| .98   -.2| .87  -1.0|e .61| 71.3  71.5| Question 32    |
|     1   1350    402     .38    .08| .97   -.4| .94   -.6|d .64| 59.0  59.2| Question 30    |
|    11   1482    401    -.73    .11| .92   -.8| .69  -2.2|c .63| 80.0  76.8| Question 40    |
|     9   1299    398     .60    .08| .79  -3.0| .86  -1.5|b .68| 63.1  55.7| Question 38    |
|    12   1501    402    -.91    .11| .74  -2.6| .54  -3.3|a .66| 84.3  79.2| Question 41    |
|------------------------------------+----------+----------+-----+----------+----------------|
| MEAN  1369.8  401.3     .00    .09|1.08    .6| .96    .0|     | 68.5  66.8|                |
| S.D.   151.9    1.3    1.02    .02| .23   2.2| .27   2.4|     | 14.9  13.1|                |
-------------------------------------------------------------------------------
```

APPENDIX H. RASCH REVISED ITEM MISFIT ORDER

ENTRY NUMBER	RAW SCORE	COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTMEA CORR.	EXACT OBS%	MATCH EXP%	Is This Cyberbullying?
7	1294	375	.35	.09	1.32	3.7	1.24	2.2	A .56	57.3	64.7	Question 36
8	1131	374	1.45	.08	1.12	1.6	1.29	3.4	B .67	50.3	53.7	Question 37
4	1432	376	-1.24	.14	1.22	1.7	.74	-1.3	C .59	86.7	84.4	Question 33
2	957	377	2.48	.07	1.16	2.3	1.19	2.1	D .64	47.2	51.0	Question 31
10	1174	374	1.19	.08	1.11	1.5	1.11	1.4	E .65	55.1	56.1	Question 39
1	1271	376	.56	.09	1.08	1.0	1.04	.4	F .63	59.6	62.0	Question 30
3	1351	374	-.21	.10	.99	-.1	.89	-.8	f .62	71.1	72.0	Question 32
11	1393	374	-.74	.12	.90	-.9	.69	-2.0	e .64	82.1	78.7	Question 40
5	1440	376	-1.41	.15	.89	-.8	.65	-1.6	d .61	88.6	85.9	Question 34
9	1220	373	.86	.08	.76	-3.5	.89	-1.2	c .70	64.9	58.9	Question 38
6	1472	376	-2.33	.20	.82	-1.0	.49	-1.6	b .58	93.6	93.0	Question 35
12	1411	375	-.95	.13	.70	-3.0	.52	-3.1	a .67	86.1	81.2	Question 41
MEAN	1295.5	375.0	.00	.11	1.01	.2	.90	-.2		70.2	70.1	
S.D.	147.0	1.2	1.33	.04	.18	2.0	.27	1.9		15.9	13.6	

APPENDIX I. RASCH PERSON-ITEM MAP

```
SCHOOL OFFICIALS - MAP - Is This Cyberbullying?
            <more>||<frequ>
  5     .########  ++
        .#########  ||        Bully-Victim        Media          Description of Incident
                    ||
                    ||
                    ||
                    ||
  4      ########  ++
                  S||
                    ||
        .#########  ||
                    ||
                    ||
  3     .#########  ++
              .     ||
        #########  ||T
              . M  ||
        .########  ||    Q35  female-teacher      SNS            threat of violence
        .########  ||
  2                 ++
         ######   ||
          .####   ||
          .####   ||
                  ||S  Q34  male-teacher          SNS            rumor, photo, insult
              ## S||    Q33  male-males, females  email          impersonation, sex explicit
  1         .##   ++    Q41  female-male          SNS            photo, insult
          .###    ||
              .    ||    Q40  female-female        cell/text      threat of violence
           .#     ||
           .#     ||
            .     ||    Q32  female-female        email          rumor, insult, ostracism
  0 ··············.  ++M ·······································································
           . T||
                  ||    Q36  female-female        email          unwanted contact
          .#     ||    Q30  female-female        email          reveal personal info
                  ||
                  ||    Q38  male-male            email          photo, insult
 -1                 ++
                  ||    Q39  grp-princ/teachers   SNS            insult
                  ||S
                  ||    Q37  male-male            cell/text      mutual threat of violence
                  ||
                  ||
 -2                 ++
                  ||
                  ||
                  ||    Q31  male-female          SNS            unwanted contact
                  ||T
                  ||
 -3          .  ++
                  ||
                  ||
                  ||
 -4                 ++
                  ||
                  ||                              SNS = Social Networking Site
           .     ||
                  ||
 -5          .  ++
          <less>||<rare>
EACH '#' IS 4.
```

APPENDIX J. RASCH CATEGORY FREQUENCIES

ENTRY NUMBER	DATA CODE	SCORE VALUE	DATA COUNT	%	AVERAGE MEASURE	S.E. MEAN	OUTF MNSQ	PTMEA CORR.	Is This Cyberbullying?	
6 b	1	1	5	1	−5.17	.59	.9	−.49	Question 35	1 strongly disagree
	2	2	2	0	−1.77	1.24	.3	−.18		2 somewhat disagree
	3	3	22	5	.91	.20	.5	−.25		3 somewhat agree
	4	4	385	93	2.99	.07	.9	.48		4 Strongly agree
	MISSING ***		20	5*	3.02			.01		
5 d	1	1	6	1	−4.81	.60	.4	−.52	Question 34	1 strongly disagree
	2	2	6	1	.47	.41	1.1	−.16		2 somewhat disagree
	3	3	43	10	1.24	.14	.6	−.29		3 somewhat agree
	4	4	359	87	3.10	.08	.9	.50		4 Strongly agree
	MISSING ***		20	5*	4.78			.06		
4 C	1	1	8	2	−3.74	.83	1.8	−.51	Question 33	1 strongly disagree
	2	2	14	3	.53	.17	.8	−.24		2 somewhat disagree
	3	3	29	7	1.59	.16	.8	−.18		3 somewhat agree
	4	4	363	88	3.09	.08	1.0	.49		4 Strongly agree
	MISSING ***		20	5*	1.84			−.03		
12 a	1	1	5	1	−5.17	.59	.2	−.49	Question 41	1 strongly disagree
	2	2	9	2	−.12	.42	.5	−.24		2 somewhat disagree
	3	3	65	16	1.25	.10	.5	−.37		3 somewhat agree
	4	4	333	81	3.24	.08	.8	.57		4 Strongly agree
	MISSING ***		22	5*	4.09	.73		.06		
11 e	1	1	7	2	−4.05	.91	1.2	−.50	Question 40	1 strongly disagree
	2	2	13	3	.60	.28	1.0	−.22		2 somewhat disagree
	3	3	65	16	1.46	.10	.5	−.31		3 somewhat agree
	4	4	326	79	3.24	.08	.9	.54		4 Strongly agree
	MISSING ***		23	5*	4.26	.55		.08		
3 f	1	1	8	2	−3.54	.95	1.0	−.50	Question 32	1 strongly disagree
	2	2	14	3	1.04	.21	.9	−.18		2 somewhat disagree
	3	3	102	25	1.85	.10	.8	−.30		3 somewhat agree
	4	4	288	70	3.36	.09	1.0	.50		4 Strongly agree
	MISSING ***		22	5*	1.44	.52		−.06		
7 A	1	1	10	2	−2.34	1.01	1.3	−.45	Question 36	1 strongly disagree
	2	2	31	8	1.38	.22	1.4	−.22		2 somewhat disagree
	3	3	123	30	2.23	.08	1.1	−.19		3 somewhat agree
	4	4	248	60	3.39	.10	1.3	.44		4 Strongly agree
	MISSING ***		22	5*	4.09	.73		.06		
1 F	1	1	14	3	−1.56	.79	1.1	−.45	Question 30	1 strongly disagree
	2	2	34	8	1.28	.20	1.1	−.25		2 somewhat disagree
	3	3	132	32	2.15	.09	1.0	−.23		3 somewhat agree
	4	4	234	57	3.58	.09	1.0	.52		4 Strongly agree
	MISSING ***		20	5*	2.23			−.01		
9 c	1	1	7	2	−3.09	1.25	.7	−.43	Question 38	1 strongly disagree
	2	2	50	12	1.10	.15	.8	−.35		2 somewhat disagree
	3	3	160	39	2.17	.08	1.2	−.26		3 somewhat agree
	4	4	193	47	3.88	.10	.8	.60		4 Strongly agree
	MISSING ***		24	6*	3.19	.71		.03		
10 E	1	1	17	4	−.65	.76	1.4	−.40	Question 39	1 strongly disagree
	2	2	74	18	1.57	.13	1.2	−.31		2 somewhat disagree
	3	3	132	32	2.24	.09	1.0	−.20		3 somewhat agree
	4	4	188	46	3.88	.10	.9	.58		4 Strongly agree
	MISSING ***		23	5*	3.68	.66		.05		
8 B	1	1	31	8	.03	.43	1.1	−.44	Question 37	1 strongly disagree
	2	2	78	19	1.61	.13	1.9	−.31		2 somewhat disagree
	3	3	125	30	2.45	.08	.8	−.11		3 somewhat agree
	4	4	177	43	3.95	.10	1.0	.59		4 Strongly agree
	MISSING ***		23	5*	3.67	.67		.05		
2 D	1	1	55	13	.82	.30	1.2	−.43	Question 31	1 strongly disagree
	2	2	113	27	2.10	.09	1.0	−.23		2 somewhat disagree
	3	3	169	41	2.95	.09	1.5	.09		3 somewhat agree
	4	4	78	19	4.69	.17	1.3	.52		4 Strongly agree
	MISSING ***		19	4*				.00		

APPENDIX K. RASCH PRINCIPAL COMPONENTS ANALYSIS

```
CONTRAST 1 FROM PRINCIPAL COMPONENT ANALYSIS OF
      Table of STANDARDIZED RESIDUAL variance (in Eigenvalue units)
Total raw variance in observations     =          25.8 100.0%         100.0%
  Raw variance explained by measures   =          13.8  53.5%          55.6%
    Raw variance explained by persons  =           6.7  26.0%          27.0%
    Raw Variance explained by items    =           7.1  27.5%          28.6%
  Raw unexplained variance (total)     =          12.0  46.5% 100.0%   44.4%
   Unexplained variance in 1st contrast =          1.7   6.5%  14.1%
```

```
STANDARDIZED RESIDUAL LOADINGS FOR Is This Cyberbullying? (SORTED BY ENTRY)
-------------------------------------------------------------------------------
|CON-    |       |        INFIT OUTFIT| ENTRY                                  |
| TRAST|LOADING|MEASURE  MNSQ MNSQ |NUMBER Is This Cybe                         |
|------+-------+------------------+-----------------------------------------------|
|  1   |  .07  |   .56 1.08 1.04  |1  Q30 female female email mistake          |
|  1   |  .68  |  2.48 1.16 1.19  |2  Q31 male female SNS unwanted contact     |
|  1   |  .09  |  -.21  .99  .89  |3  Q32 female female email rumor, insult, ostracism |
|  1   | -.32  | -1.24 1.22  .74  |4  Q33 male male, females email impersonation, unwan|
|  1   | -.58  | -1.41  .89  .65  |5  Q34 male school official/teacher SNS rumor, photo|
|  1   | -.51  | -2.33  .82  .49  |6  Q35 female school official/teacher SNS threat of |
|  1   |  .48  |   .35 1.32 1.24  |7  Q36 female female email unwanted contact |
|  1   | -.02  |  1.45 1.12 1.29  |8  Q37 male male cell phone/text message mutual thre|
|  1   | -.22  |   .86  .76  .89  |9  Q38 male male email  photo, insult       |
|  1   | -.19  |  1.19 1.11 1.11  |10 Q39 group school official/teacher SNS insult |
|  1   | -.22  |  -.74  .90  .69  |11 Q40 female female cell phone/text message threat |
|  1   | -.39  |  -.95  .70  .52  |12 Q41 female male SNS  photo, insult        |
-------------------------------------------------------------------------------
```

APPENDIX L: IRB RESEARCH PROTOCOL EXEMPTION

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Exemption Granted

October 1, 2010

John Snakenborg, MA
Special Education
3444 EPASW
1040 W Harrison, M/C 147
Chicago, IL 60607
Phone: (708) 948-7350

**RE: Research Protocol # 2010-0766
          "Understanding How Schools Respond to Cyberbullying"**

Dear Mr. Snakenborg:

Please note that Dr. Richard Van Acker's current Investigator Training Period will expire on December 31, 2010 unless he completes Investigator Continuing Education: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/2-2-2/ce_requirements.shtml

---

Your Claim of Exemption was reviewed on October 1, 2010 and it was determined that your research protocol meets the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b)]. You may now begin your research.

Exemption Period: October 1, 2010 – September 30, 2013
Sponsor: None
Performance Site(s): UIC
Subject Population: Adult subjects only
Number of Subjects: Not to exceed 2000

The specific exemption category under 45 CFR 46.101(b) is:

APPENDIX : IRB RESEARCH PROTOCOL EXEMPTION

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

1. <u>Amendments</u> You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.

2. <u>Record Keeping</u> You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.

3. <u>Final Report</u> When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).

4. <u>Information for Human Subjects</u> UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. <u>When appropriate</u>, the following information must be provided to all research subjects participating in exempt studies:

    a. The researchers affiliation; UIC, JBVMAC or other institutions,
    b. The purpose of the research,
    c. The extent of the subject's involvement and an explanation of the procedures to be followed,
    d. Whether the information being collected will be used for any purposes other than the proposed research,
    e. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
    f. Description of any reasonable foreseeable risks,
    g. Description of anticipated benefit,

APPENDIX : IRB RESEARCH PROTOCOL EXEMPTION

     h. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
     i. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
     j. A statement that the UIC IRB/OPRS or JBVMAC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→Use your research protocol number (listed above) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, B.S., C.I.P.
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

Enclosure(s): None

cc: James V. Kahn, Special Education, M/C 147
      Richard Van Acker, Special Education, M/C 147

December 2011

Curriculum Vita

John Snakenborg

Education

Ph.D., Special Education, University of Illinois at Chicago, Expected Spring, 2012

M.Ed., Special Education, Roosevelt University, Chicago, IL, 2004

B.A., Film, San Francisco State University, Cum Laude, 1992

Related Employment History

2010 – Present   Visiting Instructor, Dominican University, River Forest, IL

- SPED 649 Psychology & Characteristics of Students with Disabilities
- SPED 659 Managing Challenging Behavior
- SPED 522 Characteristics & the Special Education Process
- SPED 646/SPED 705 Clinical Internship & Seminar in Special Education
- SPED 702 Seminar in Special Education
- SPED 703 Clinical Practice in Special Education

2009 – 2010   Graduate Assistant, University of Illinois at Chicago

- SPED 467 Social & Emotional Development & Disabilities
- SPED 410 Survey of the Characteristics of Exceptional Learners

2003 - 2010   Special Education Teacher, Chicago Public Schools

Jacqueline Vaughn Occupational High School

- Classroom teacher – Subjects taught include Mathematics, Business English, Topics in Literature, and Public Speaking

John Spry Community School

- Teacher in a self-contained cross-categorical classroom, in a resource setting, and in inclusive settings co-teaching with general educators

Publications

Snakenborg, J.B., Van Acker, R., & Gable, R. (2011). Cyberbullying: Prevention and intervention to protect our children and youth. *Preventing School Failure, 55,* 88-95.

Conference Presentations

Snakenborg, J. B., Van Acker, R. (2007, October). *Aggressive/violent behaviors of youth at the secondary school level*. Presentation at the 7th Biennial International Conference of Children and Youth with Behavioral Disorders, Dallas, TX.

Snakenborg, J. B. (2007, November). *Academic and social interventions for youth in correctional settings.* Presentation at the 31st Annual Conference of the Teacher Educators for Children with Behavioral Disorders, Tempe, AZ.

Snakenborg, J. B. (2008, November). *Education in the most restrictive setting: What works in juvenile corrections.* Presentation at the 31st Annual Conference of the Teacher Education Division/Council for Exceptional Children, Dallas, TX.

Snakenborg, J.B. (2010, November). *The new bullies: Legal mandates and the promotion of a safe school environment for all.* Presentation at the International Child & Adolescent Conference XV of the Behavioral Institute for Children and Adolescents, Minneapolis, MN.

Snakenborg, J.B. (2011, September). *How Schools Respond to Cyberbullying.* Presentation at the 9th Biennial International Conference on Children and Youth with Behavioral Disorders, New Orleans, LA.

Professional Service

Snakenborg, J.B. (2010, November). *Promoting a safe positive environment for all.* Staff development presentation for Chicago Youth Centers, Chicago, IL.

Professional Qualifications

- Special Education Teacher – Standard Certificate, State of Illinois
- Certificate Endorsement: Learning Behavioral Specialist I
- Mentor/Cooperating teacher to numerous preservice teacher candidates
- University Field Supervisor

Professional Memberships

- Council for Exceptional Children
- Council for Children with Behavioral Disorders
- Teacher Education Division
- CEC Division for Research

- Division on Career Development and Transition
- Division for Learning Disabilities
- Division on Developmental Disabilities
- Division for Early Childhood
- Division for Culturally and Linguistically Diverse Exceptional Learners

Research Interests

- Bullying, aggression, and antisocial behavior
- Post-secondary transition of youth with disabilities
- Training and mentorship of special education teachers
- Correctional education
- Transition opportunities for youth in foster care
- Efficacy of small special schools and the continuum of special education placements
- Efficacy of special education
- Relationship between learning and behavior problems in children and youth
- Relationship between student behavior and teacher behavior
- Educator beliefs and attitudes
- Special education policy