VIOLENCE IN SCHOOLS: A REVIEW OF COMMON MANAGEMENT APPROACHES, INCLUDING CONFLICT RESOLUTION, PEER MEDIATION, VIDEO SURVEILLANCE AND THE USE OF METAL DETECTORS

by

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Several shocking incidents of school violence in North America have resulted in mass public attention. This thesis examines school violence studies in the following areas: national studies on the frequency of school violence incidents in both Canada and the United States; weapon-related victimization and weapon carrying; inner-city schools weapon-related victimization; and violent deaths and nonfatal/fatal crimes in urban, suburban, and rural schools.

A review of research indicates that minor/simple assault is the most frequently-reported type of violent incident in schools, both in Canada and the United States and, therefore, the most common school violence problem in North America. Although school-related homicides are rare events, often weapons are the cause of death, which provides justification for the use of metal detectors. This thesis examines metal detector programs in schools recommended to prevent serious violent crime, including homicide. The thesis looks at the number of schools with metal detectors in the United States, effectiveness, strengths, and limitations. Future research on the effectiveness of metal detectors in schools is needed.
Of the conflict resolution and peer-mediation programs reviewed in this thesis, evidence of programs effectively reducing school violence is slim: the majority of studies are weakened by poor conceptual elements of the research and lack of follow-up. More than half of the studies did not use a pretest/posttest design and a control group. Longitudinal-experimental studies and research reviews are recommended for future research.
DEDICATION

To my parents

Harry & Miriam
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This thesis could not have been written without the support, guidance, and help of Professor Meguido Zola. His brilliant insight, guidance, and encouragement was invaluable.
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Several shocking incidents of school violence in North America have resulted in mass public attention, including a media focus. The Columbine massacre shocked North America to a point where the name Columbine has become almost synonymous with the term school violence. The highly publicized, unforgettable event, occurred in a Littleton, Colorado high school, April 20, 1999, where two armed teenage students shot and killed 12 students and one teacher before committing suicide (Garbarino, 2001; Wanko, 2001). Eight days later, a school in Taber, Alberta, Canada experienced a shooting of two students (one fatally) (Bergman, 1999). In Victoria, British Columbia, Canada, the Reena Virk case resulted in serious public concern after a high school girl was beaten and drowned to death by her schoolmates in November 1997 (the incident did not occur on school property) (“Legal Wrangles,” 1998; Westad, 1997). Other heinous school-related murders include the Jonesboro, Arkansas killings in March 1998: Four students and one teacher were assassinated by two students, aged 11 and 13 (Garbarino). Two months after the Arkansas incident, in Springfield, Oregon, a 15-year-old student shot 24 classmates in the school cafeteria, two fatally, after killing both his parents (Garbarino). March 2001 proved that violent deaths occurring at school had not ceased: In Santee, California, a teenage student killed two students and
wounded thirteen other people (Novarro, 2001). In April 2003, a gunman with an
AK-47 rifle shot and killed a student and wounded three others at a New Orleans
high school ("Gunman kills student," 2003; "Handgun found on La. high school
shooting victim," 2003). Five suspects, ranging in age from 17 to 19, were
arrested ("Gunman kills student," 2003). In April 2003, a 14 year-old-boy shot
and killed his school principal inside a crowded junior high cafeteria and then
killed himself (Levy, 2003). In November 2003, in Vancouver, British Columbia,
Canada, a 17-year-old boy was beaten to death, on a Friday night, on the school
grounds of the high school he attended (Mickleburgh, 2003). Two teenage boys,
a 17-year-old and a 16-year-old, were charged with second-degree murder
(Mickleburgh).

School homicides, sensationalized by the media, are, however, rare
events in North American schools: "The massive media creates the impression
that schools in the United States are dangerous places where children and
teachers are no longer safe" (Kappeler, Blumberg, & Potter, 2000, p. 186).
Similarly, Burnstyn and Stevens (2001) describe the media's depiction of school
violence. They state

Television pictures of students who have killed their school fellows
with handguns; newspaper stories of a teacher disarming a student
in the classroom; and telephoned bomb threats that close down
schools for searching, while students shiver on sidewalks and in
parking lots, watching; all these foster a belief that public schools
are no longer safe. (p. 139)

The recent school shootings have resulted in a moral panic (Burns & Crawford
1999; Dolmage, 1996) that is largely fueled, not only by the incidents
themselves, but by the media's sensationalization of these tragedies. Cohen (1972) coined the phrase “moral panic” to refer to:

A condition, episode, or group of persons emerges to become defined as a threat to societal values and interests; its nature is presented in a stylized and stereotypical fashion by the mass media; the moral barricades are manned by editors, bishops, politicians and other right-thinking people; socially accredited experts pronounce their diagnoses and solutions . . . . Sometimes the object of the panic is quite novel and other times it is something which has been in existence long enough, but suddenly appears in the limelight. (p. 9)

The mass attention and hysteria surrounding school violence fits with Cohen’s definition of a moral panic.

The media sensationalizes events when a student kills his teacher or other peers at school, however, simple assaults which occur daily receive little or no attention. A review of national statistics on school violence in both Canada and the United States will demonstrate that school violence is not out of control and that simple assault is among the most prevalent violent behavior in North America, not aggravated assault and homicide.

**Methodology**

This thesis examines school violence studies in the following areas:
national studies on the frequency of school violence incidents in both Canada and the United States; weapon-related victimization and weapon carrying in Canadian and American schools; inner city schools weapon-related victimization; metal detectors in elementary versus secondary schools; urban, suburban, and
rural violent deaths and nonfatal/fatal crimes; and arguments against metal detectors in schools.

This thesis examines common approaches to managing violence in schools. These include conflict resolution, peer mediation, and the use of metal detector programs. The discussion of metal detectors includes research concerning the effectiveness, the number of schools with metal detectors in the United States, limitations, positive points, and recommended locations of metal detectors in schools. A brief discussion of video surveillance is also introduced.

This thesis reviews Canadian evaluation studies of conflict resolution and peer mediation programs. In an effort to limit the scope of this thesis and focus on Canadian content when available, only Canadian conflict resolution studies will be evaluated. Published evaluation reports of conflict resolution and peer mediation programs in Canada are used as the source of data. A review of evaluation research on conflict resolution and peer mediation programs in Canada is a valuable contribution to the field of school violence prevention in order to address whether these programs are effective and worthwhile. Are these programs effective at reducing school violence? Do these programs have a positive impact on students such as attitudinal and behavioral changes concerning violence? Are the studies methodologically flawed in ways that limit study findings? This thesis argues that, of the conflict resolution and peer mediation programs reviewed in this thesis, evidence of the programs effectively reducing school violence is slim.
The conflict resolution and peer mediation evaluation studies examined in this thesis were located using the following databases: Digital Disserations, ERIC, MICROLOG (Canadian government publications), and PsycINFO. The remaining reports were located by contacting Research Services at the Toronto Board of Education.

In addition to the aforementioned databases used to locate conflict resolution and peer mediation studies in this thesis, much of the research for this thesis was obtained from general subject searches from the Simon Fraser University library database and the following academic databases: ERIC, Criminal Justice Abstracts, and the National Criminal Justice Reference Service. ERIC has been chosen as a database because it is common in the Faculty of Education and Criminal Justice Abstracts and the National Criminal Justice Reference Service are common databases of criminology. Additional research was obtained through the following Internet World Wide Websites: Centers for Disease Control (www.cdc.gov/), National Center for Education Statistics (NCES) (http://nces.ed.gov), Statistics Canada (http://www.statisticscanada.com), University of Michigan (http://www.icpsr.umich.edu/SAMHDA), and the U.S. Department of Justice, Office of Justice Programs (http://www.ojp.usdoj.gov/bjs/).

Reports were also located by referencing the bibliography of other scholarly works (e.g., Brantingham, Mu, & Verma, 1995; Burns & Crawford, 2000; Day, Golench, MacDougall, & Beals-Gonalzes, 1995; Fattah, 1991;
Gomes, Bertrand, Paetsch, & Hornick, 1999) or by contacting individuals at various organizations (e.g., Calgary Police Service, Centers for Disease Control and Prevention, Metropolitan Life Insurance Co., PRIDE Surveys, and Statistics Canada).

Newspaper articles for this thesis were located using the Canadian Business and Current Affairs database, Canadian Newsstand database, USA Today, the Vancouver Sun, and The Globe and Mail.

All percentages reported have been rounded to the nearest whole number.

Defining School Violence

The term school violence is defined, in this thesis, according to the Statistics Canada definition of violent incidents: “Violent incidents involve offences that deal with the application, or threat of application, of force to a person. These include homicide, attempted murder, various forms of sexual and non-sexual assault, robbery, and abduction” (Statistics Canada, 2003, p. 78). The following forms of assault are included in Statistics Canada’s definition of violent incidents: common assault/minor assault (Assault level 1) and major assault (Assault levels 2 and 3) (Janhevich, 1997; Stevenson, Tufts, Hendrick, & Kowalski, 1998). Common assault is “the Criminal Code category assault (level 1). This is the least serious form of assault and includes pushing, slapping, punching, and face-to-face verbal threats” (Stevenson et al., p. 67). Major
assault is defined as "more serious forms of assault under the Criminal Code, i.e. assault with a weapon or causing bodily harm (level 2) and aggravated assault (level 3)" (Stevenson et al., p. 68). Section 268(1) of the Criminal Code provides that "every one commits aggravated assault who wounds, maims, disfigures, or endangers the life of the complainant" (Criminal Code, R.S.C. 1985, c. C-46).

In this thesis, the term school includes institutions that have educational programs for students either at the primary or secondary level, or both. Universities and colleges are not examined because of a necessity to limit the focus of this thesis and also because violence in grade schools has been of mass media and societal concern, not universities and colleges.

School-based Violence Prevention Programs

general social skills and anger management training and programs designed to prevent bullying, racism (e.g., prejudice and discrimination), hate crime, gang activity, dating violence, relationship abuse, alcohol and drug abuse (Barrios, Baer, Bennett, Bergan, Bryn, Callaway, Davis, Downs, Dressler, Ho, Karp, Mathews-Younes, MacMurray, O'Brien, Overpeck, Reed, Small, & Tuma, 2000; Children's Safety Network Adolescent Violence Prevention Resource Center, 1995; US Department of Education & the US Department of Justice, 2000; US General Accounting Office, 1995). The ideology of conflict resolution and mediation programs is summarized by Croft (1995). She states:

The philosophy behind conflict resolution and mediation programs is one which does not focus upon blame, punishment, or who wins/loses. Rather, participants are encouraged to find areas of agreement, common ground which can lead to solutions wherein both sides come out as winners. (1995, p. 103)

Conflict Resolution Programs

In the motion picture *The Karate Kid*, the character Mr. Miyagi, advises his revenge seeking student that revenge results in no winners: “[If] you look [at] revenge that way, [you] start by digging two grave[s]. Fighting [is] always [the] last answer to [a] problem” (Weintraub, Kamen, & Avildsen, 1984). Similar to Mr. Miyagi's wise sentiment, conflict resolution programs aim to teach students that resolving conflicts peacefully is always better than resorting to violence and aggression. The attitude of Mr. Miyagi's student is typical of our society which can be described as a super culture of conflict: just watch an action movie or a hockey game (or some recent video games) to sense this phenomenon. Movie
action heroes typically do not advocate assertive, non-violent responses to conflict. This is not to blame the media, hockey, or video games. The media and sports supply society’s demand (generally speaking): If violence did not sell, then the media would not be selling it. Conflict resolution skills, simply, are not culturally supported. Therefore, the name-calling or aggressive (sometimes violent) responses of people in this society are natural responses compared to talking things out in an assertive, respectful way. Assaults occur in schools for the same reason assaults occur everywhere else in the world: instant results. Webster (1996), a skeptic of conflict resolution programs, emphasizes the important considerations of the context of conflict resolution programs; for example, inner city versus middle-class communities, and the motivations behind disputes that are status-related. It is unlikely that a student seeking a tough social status will use conflict resolution skills: the two simply don’t mix. The following lengthy quotation is not shortened because the author of this thesis believes that Webster’s words of wisdom offer an important reality check for conflict resolution programs. Webster (1996) states:

Programs that focus primarily on social-skill deficits are likely to be futile if youths are not motivated to use the skills. There are many reasons why they would not be so motivated. Aggressive youths tend to believe that aggressive behavior increases status among their peers, particularly in the short term, and provides tangible rewards. Acting tough and maintaining a reputation as someone willing and able to commit serious acts of violence is considered a necessity within gangs and groups involving drug trafficking. Even outside of delinquent groups, there is considerable social pressure for youths, particularly males in low-income communities, not to back down when provoked. Although attitudes about violence often are discussed in conflict resolution programs, brief adult-led
curricula cannot be expected to produce sustainable attitude change, particularly because adolescents are in a developmental stage characterized by defiance of adults . . . . For most middle-class adults, arguments usually stem from disagreements and competing interests. These conflicts often can be solved through negotiation. Negotiation skills may be of little relevance in a wide variety of other situations that involve heated interpersonal exchanges, particularly for youths in low-income neighborhoods. In my observation of conflict resolution programs in crime-ridden neighborhoods, it is rare for students to bring up incidents that fit the negotiated solution model well. More often, students talk about taunts, put-downs, competition over girlfriends and boyfriends, shake-downs, gang retaliation, and attempts to assert dominance over adversaries. Fights between boys in the early and middle teens are usually about status and respect. This is not surprising when one considers the heightened concern for respect among young people living in ghetto areas who generally are disrespected by society and deprived of legitimate opportunities to acquire symbols of status. (pp. 208-209) (also in Webster, 1993, pp. 135-136).

In being consistent with this thesis' emphasis on the importance of defining terms, conflict resolution is defined as follows: "Conflict resolution refers to any reduction in the severity of conflict or mitigation of its underlying causes. It may entail de-escalation of an overt struggle or reconciliation of divergent interests" (Pruitt, 2001, p. 2532). According to The Oxford English Dictionary, the term conflict is defined as a fight: "Of interests, opinions, statements, feelings, etc.: To come into collision, to clash; to be at variance, be incompatible" (Simpson & Weiner, 1989a, p. 713). While everyone would agree that conflict refers to a dispute, "different people have different thresholds of dispute" (Brown, Soudack, Edwards, Kearns, & Harris, 1995, p. 18). The meaning of a serious conflict is subjective: it can be interpreted as a physical fight and/or a "heated
argument" (Brown et al., 1995, p. 18). This demonstrates the importance of defining the term conflict in a questionnaire, or at least differentiating between the two meanings in the questionnaire, to ensure that respondents are clear (e.g., asking a respondent if she/he was experienced conflict at school is too vague).

Conflict resolution programs are designed to help students learn nonviolent responses to deal with conflict in order to prevent school violence. Cutrona and Guerin (1994) state that "Educators must equip youth with the tools necessary to successfully manage conflict: communication skills, problem-solving, critical thinking, negotiating techniques, and peacemaking" (p. 95). Shamir (2000) wisely states that "by teaching kids skills of negotiation we give them a tool for life" (conference presentation, 2000).

However, I am not convinced that having a doctrine of rules, regulations and codes to conduct oneself is all that practical when dealing with students who are still developing their mental processes of rational thought. I believe that we all have primitive animal instincts, such as ‘fight or flight’, and accessing higher reason such as negotiation or conflict resolution may not be an option during the early years of life. “Do not try to improve human character. You are certain to fail” (Felson, 2002, p. 145).

Conflict resolution programs are intended to (1) “create a safer atmosphere at school,” (2) “reduce interpersonal violence among youth,” and (3) “contribute to broader efforts within the community to reduce violence” (Powell,
Conflict resolution is a "peace-oriented strategy used to deal with interpersonal disputes peacefully" (Terry & Gerber, 1997, p. 3). The goal of conflict resolution programs is to teach students how to resolve conflicts nonviolently. Conflict resolution programs, typically curriculum-based programs, "teach students to manage anger, control aggressive responses, understand conflict, and avoid and diffuse potentially physically violent confrontations" (Powell et al., p. 426). Conflict resolution teaches skills such as "active listening, anger management, assertiveness training, problem solving, and negotiation" (Isaac, 1991, p. 2). The goal of conflict resolution is for students to learn to achieve a win-win result when confronted with conflict so that both parties having a dispute are satisfied with the outcome of the intervention.

There are two types of conflict resolution programs: the "cadre approach" and the "total student body approach" (Johnson & Johnson, 1995, p. 21). The cadre approach involves training a small number of students to be peer mediators (Johnson & Johnson, 1995, 1996). The total student body approach involves training all students in the school to "manage conflicts constructively" and resolve conflicts peacefully (Johnson & Johnson, 1996, p. 460). Popularity of conflict resolution curricula is growing and implementation of such programs is widespread (Grossman, Neckerman, Koepsell, Liu, Asher, Beland, Frey, & Rivara, 1997; Webster, 1993).
Peer Mediation Programs

Peer mediation is “a form of conflict resolution that is based on the foundation of applied conflict resolution” (Terry & Gerber, 1997, p. 1). According to *The Oxford English Dictionary*, the term mediation is defined as “the action of mediating between parties at variance” and mediator is defined as “one who intervenes between two parties, esp. for the purpose of effecting reconciliation; one who brings about (a peace, a treaty) or settles (a dispute) by mediation” (Simpson & Weiner, 1989b, p. 545). Peer mediators are students, chosen by their peers and faculty members, to help students resolve conflicts (Terry & Gerber, 1997). In peer mediation, “trained peer mediators follow prescribed procedures to assist disputants in resolving conflicts. They act as neutral third parties promoting active listening, cooperation between disputants, and creative problem solving” (Yvetta, Dagnese, Halpin, Halpin, & Keiter, 1996, p. 2). The mediator’s role is to listen to each disputant’s version of what happened, state the problem in need of resolution, help the parties reach solutions to problems, evaluate these solutions, facilitate the meeting, and write a contract if parties are able to work out an agreement (Cutrona & Guerin, 1994). The mediator does not force a settlement but helps the disputants work out an agreement (Isaac, 1991).

Shamir (2000), Director of the Israel Center for Negotiation and Mediation in Haifa, Israel, argues that teaching all kids to be “negotiators” is far more important than teaching a select few to be mediators (conference presentation,
Shamir is critical of peer mediation programs that do not teach all students negotiation skills. Shamir states:

Children should be able to resolve their conflicts without a third party. If we provide them with tools of principled negotiation, they will do it properly. Introducing mediation without negotiation sends an underlying, uneducational message to the children, "You go ahead and fight, and a mediator will help you resolve this conflict." Instead of giving them the responsibility to resolve their conflicts, we hand this responsibility to a third party. By creating a cadre of mediators, we create at school an "elite group" that in time becomes unacceptable and ineffective. (personal communication, December 10, 2000)

Shamir emphasizes that teaching students negotiation skills should precede the implementation of a peer mediation program. Shamir argues that "after all the students learn negotiation skills, the student community will recognize, and choose these children who will be accepted as mediators in conflicts that the children could not resolve by themselves, and need a third party's help" (personal communication, December 10, 2000).

Shamir states that peer mediators are useful when children cannot resolve conflicts by themselves. Shamir asserts that, ideally, schools should have programs to teach all students negotiation skills in addition to mediation programs. Other authors emphasize the importance of training all students in conflict resolution (Johnson & Johnson, 1995; Lantieri, DeJong, & Dutrey, 1996). As Johnson and Johnson (1995) state, "All students, not a select few, need to learn how to manage conflicts. Everyone- students, faculty, and staff- must use conflict resolution procedures" (p. 12).
**Evaluation**

To date, few reviews of school-based violence prevention programs in North America have focused specifically on conflict resolution and peer mediation programs, with the exception of Lam (1988, 1989), Johnson and Johnson (1996), and Powell, Muir-McClain, and Halasyamani (1995, 1996). These studies synthesized primarily American research. There have been no such reviews of conflict resolution and peer mediation programs in Canada.

Other reviews of school-based violence prevention programs include a variety of prevention programs. For example, Day et al. (1995) reviewed school-based violence prevention policies and programs in Canada and summarized the results of program evaluation studies. Drug Strategies (1998) presents a guide on violence prevention programs in the United States: a comprehensive review of prevention literature on violence, juvenile delinquency, and substance abuse. The Drug Strategies report is based on a review of the curriculum for each program but does not discuss in detail the results of evaluations conducted on the programs by other researchers. For example, the results of one program, Peacebuilders, is summarized in one sentence as “preliminary post-test results of rigorous ongoing CDC [Centers for Disease Control] evaluation shows significant reductions in fighting-related injury visits to school nurse by students” (Drug Strategies, p. 26). The Collaborative for Academic, Social, and Emotional Learning (CASEL) (2003) developed a guide for educators on social and emotional learning programs, in the United States, that includes a review of
program evaluations (including some peer mediation and conflict resolution programs).

**Reduction in Violent Incidents**

Evaluations of school-based violence prevention programs, such as conflict resolution and peer mediation programs, are typically assessed by student self-report surveys. Rates of violent incidents/conflict or students' attitudes toward violence/conflict are typically measured after program implementation. It is ideal to use the same group of students as subjects for both a pretest, that is, before program implementation, and posttest, after program implementation, for comparison. This helps determine rates of change (if any) in students' attitudes or self reports of violent behavior after program implementation. It is also ideal to use a control group. Of the studies reviewed in this thesis, four of nine used both a pretest/posttest design and a control group (e.g., Cochrane & Saroyan, 1997; Pendharkar, 1994; Stevahn, Johnson, Johnson, Green & Laginski, 1997; Stevahn, Johnson, Johnson, Laginski, & O'Coin, 1996). It is not always possible for the researcher to use a pretest/posttest comparison group and a control group, within the same school, if the program has already been implemented before the researcher begins the study.
Some surveys include students' responses to hypothetical conflict situations/vignettes (e.g., Stevahn et al., 1996, 1997). Only a few studies are designed to collect data regarding both student responses to hypothetical situations and self-reports of violence (e.g., Bynum, Davidson, Cox, & Curtis, 1999; DuRant, Treiber, Getts, McCloud, Linder, & Woods, 1996). Examples of studies that measure students' attitudes toward conflict (including physical acts) using hypothetical situations are as follows: Johnson, Johnson, & Dudley, (1992), Johnson, Johnson, Dudley, & Acikgoz (1994), Kinasewitz (1996), Stevahn et al. (1996, 1997). The problem with using hypothetical conflict situations to measure students' attitudes toward violence is that responses may not indicate behavior in real life situations. Situational factors, such as alcohol, drugs, and bystanders (groups of friends), can affect one's reaction to conflict. As Corrado (1996) states:

Most violent behavior occurs in the context of group dynamics, often with alcohol or drugs involved. Even planned acts of violence, like simmering disputes that end up as a fight between two adolescents or two groups, can escalate or spin out of control in ways that were not originally intended. A robbery can unpredictably and suddenly turn into a murder case. (p. A23)

Vitaro and Pelletier (1991) assessed children's "social problem-solving skills" in hypothetical and actual conflict situations (p. 505). One hundred fourteen students in Grade 1 and 2 participated in the study. Based on their study findings, Vitaro and Pelletier state:
The nonclinically maladjusted young children possess the knowledge necessary to behave 'normally' with respect to their age norms when faced with hypothetical social dilemmas in a neutral social setting. However, they may lack the capability to enact these solutions when directly faced with real emotion-arousing problem situations . . . . (p. 513)

Although the Grade 1 and 2 students are young and undeveloped, which is likely a factor in their reaction to conflict in real life situations, Vitaro and Pelletier's study, nevertheless, highlights that hypothetical situations do not equate real life situations where emotions are involved. This is an important factor to consider when interpreting results of surveys that measure behavior using hypothetical vignettes. A better way of determining students' attitudes may be to ask them if they have been involved in violent behavior at school.

When interpreting results from conflict resolution studies it is important to keep in mind the following warning by Pendharker (1994). He states that "students may report attitudes about conflict that are different from their behavior . . . . a self-report style of questionnaire that may not be an accurate indicator of student behavior" (1994, p. 34). Similarly, Sommer and Sommer (1997) assert that attitudinal scales are weak at predicting behavior and that "words on the printed page bear little resemblance to the actual situation" (p. 157).

In referring to the effectiveness of conflict resolution programs in schools, one anonymous person interviewed stated the following:
They [students] know they're supposed to talk out their problems. They know they're supposed to walk away from it. They know... all the things that they have been taught all the way through school and through their childhood, but they don't care at that point, when they're angry enough. So, OK, maybe we need to have more anger workshops... They do know better, they just choose not to use it. (cited in Greene, 2001, p. 222)

The above quote emphasizes that knowing the difference between right and wrong does not necessarily mean that one chooses to do the right thing.

**Lack of Empirical Evidence to Support Efficacy (Weak Research)**

Some authors allege that the evidence is thin in support of conflict resolution and peer mediation programs (Bynum et al., 1999; Cutrona & Guerin, 1994; DuRant et al., 1996; Lantieri, DeJong, & Dutrey, 1996; Stevahn et al., 1997; Webster, 1993, 1996). Webster (1993) asserts that there is a lack of evidence to support many school-based social programs in general.

**Lack of Research on Programs**

Many authors point out that there is a lack of evaluation research on conflict resolution and peer mediation programs (Burstyn & Stevens, 2001; Bynum et al., 1999; Cochrane & Saroyan, 1997; Cutrona & Guerin, 1994; Deutsch, 1993; Farrell & Meyer, 1997; Johnson et al., 1992, 1994; Johnson, Johnson, Mitchell, Cotton, Harris, & Louison, 1996; Lam, 1988, 1989; Powell et al., 1995, Powell, Dahlberg et al., 1996; Powell, Muir-McClain et al., 1996; Rozmus, 1997; Stevahn et al., 1997; Tolson, McDonald, & Moriarity, 1992).
Long-term effects of the programs, longitudinal research, is an area of neglect in the field of research on conflict resolution and peer mediation programs. "Longitudinal surveys involve repeated measures of the same people" (Blumstein, Cohen, & Farrington, 1988b, p. 67), in other words, longitudinal research "looks at the same group over time" (Palys, 1997, p. 417) unlike cross-sectional research which "like a snapshot, provides a glimpse of a sample of people at one point in time" (Palys, 1997, p. 417). There is no evidence that conflict resolution programs result in long-term changes in violent behavior or risk of victimization (Webster, 1993, 1996). Few evaluations of school-based interventions include long-term follow up, making it impossible to determine the impact the program had on reducing delinquent behavior over time (McCord, Widom, & Cromwell, 2001).

**Quality of Studies**

Van Slyck and Stern (1991) assert that many studies on conflict resolution have been characterized by a "lack of methodological rigor" and, at best, are "limited evaluation efforts" (p. 267). They criticize Lam's (1989) review of peer mediation programs:

The lack of appropriate control groups (i.e., no comparison of students who are trained as peer mediator with those who are not trained); the failure to control for pretreatment differences (i.e., failure to ensure that the two groups of students compared are equivalent on important variables); the ignoring of possible placebo effects (i.e., failure to examine the impact of simply receiving attention); the failure to use standardized, reliable, and valid quantitative instruments (i.e., those measures with established
norms that yield consistent results and measure what they intend to; and over-reliance on unvalidated, qualitative data (i.e., open-ended impressions of the program's impact). (Van Slyck & Stern, 1991, p. 267)

They note that an additional problem with the studies reviewed by Lam (1989) is the inconsistency of both definitions and operationalization of "areas of impact" (p. 267). Van Slyck and Stern conclude that these methodological flaws "limit the validity and generalizability of findings on peer mediation and its impact" (p. 267).

None of the program evaluations reviewed in this thesis are longitudinal in nature. Only one study reviewed offered a delayed postmeasure, administered to subjects 7 months after the original posttest (a retention test) (Stevahn et al., 1997). The long-term effect of the program on reduction of violence in schools is not being measured. Longitudinal studies are necessary to address the long-term effects of conflict resolution and peer mediation programs. If the research enterprise is to offer worthwhile research on the impact and effectiveness of conflict resolution programs in the future, researchers must produce longitudinal studies which are far more revealing than one-shot studies. There needs to be ongoing evaluations of conflict resolution and peer mediation programs which offer more than just one "snap shot" (Palys, 1997, p. 417) of the program at one point in time. As Webster (1993) states, "While plenty of resources are being devoted to delivering adolescent conflict resolution programs, no one has been willing to invest in long-term evaluations that will tell us whether those resources are being well spent" (p. 137). Ten years later, there is still a lack of long-term
follow-up for conflict resolution programs. Hopefully, future research will have more to offer in this regard. There are plans of evaluation for one conflict resolution program, the Resolving Conflict Creatively Program (RCCP), to begin a 6-year follow-up study to examine the effects of the program (e.g., to determine whether the program reduces children's future aggressive and violent behavior in adolescence) (Aber, Brown, & Jones, 2003).

A famous longitudinal study in criminology, the Cambridge-Somerville Youth Study, found, in a 30 year follow-up of treatment effects, that the treatment program (a counseling program) not only failed, but was also harmful. The treatment group "turned out worse" than the control group measured by criminal behavior, death, disease, occupational status, and job satisfaction (Farrington, 1992; McCord, 1978; McCord, 1990; McCord, 1992, p. 202). This study demonstrates that longitudinal studies are useful not only to evaluate effectiveness, but also to detect harmful effects, and that well-intended programs can be counterproductive.

Dark Figure of Crime

Another limitation of gathering data on school violence lies in the dark figure of crime. The "dark figure" of crime, that is, "the vast number of unrecorded crimes and criminals" (Coleman & Moynihan, 1996, p. 3) limits our knowledge of the true extent of crimes committed at school. Crime statistics are often underreported (Solicitor General Canada, 1984; Sommer & Sommer,
Police statistics, often incomplete because of crimes unreported by victims or witnesses, are also incomplete due to discretionary practices of the police in recording of events, for example, police informally "screening out" some incidents from being recorded as crimes (Solicitor General Canada, 1984). The Solicitor General Canada states:

Criminologists have long been aware that police statistics cannot measure the true extent and distribution of crime in society, however conscientiously or reliably the data have been collected. Although police statistics may reflect actual rates of some crimes such as homicide, we have learned from a variety of studies that such statistics represent only a small, but unknown fraction of other crimes. (1984, pp. 1-2)

Statistics of school violence should be interpreted with caution because, besides school homicides that always result in a police report (and mass media attention), lesser serious offences may be underreported either by survey respondents (e.g., students) in victimization surveys or by school officials (e.g., school principals) to the police.

**Limitations of Survey Design**

Much of the research reports reviewed in this thesis is based on survey data. There are limitations to the survey design (Gottfredson & Gottfredson, 1980) such as respondents "concealment and fabrication" (Coleman & Moynihan, 1996, p. 79): in other words, lying. For a topic as sensitive as school violence, anonymous questionnaires are recommended to guarantee confidentiality and hopefully encourage truthful responses. There is also the
problem of telescoping, that is, “misplacing events in time . . . . an event may be remembered as having occurred more recently than it actually occurred, or it may be remembered as having occurred earlier than it actually did” (Gottfredson & Hindelang, 1977, p. 206). For example, when respondents mistakenly report a victimization incident as having taken place in the six months before the interview when it actually occurred outside of the six-month reference period. Telescoping results in artificially inflated rates for the reference year (Gottfredson & Hindelang, 1977; Skogan, 1976). Another problem is memory fade, “the tendency for events to be forgotten” (Palys, 1997, p. 226). Respondents often have difficulty remembering victimization incidents that are not recent (Skogan, 1975).

Most surveys are generally weak in terms of validity (Maxfield & Babbie, 1995). Champion (1993) points out several disadvantages of survey designs. He states:

1. Surveys are superficial reflections of population sentiments.
2. Surveys, particularly political surveys, are unstable reflections of population characteristics.
3. Researchers have little or no control over individual responses in surveys.
4. Statements about populations from which samples are drawn are tentative. (Champion, 1993, p. 65)

Survey questionnaires are dependent on literacy of respondents (Palys, 1997). Questionnaires must be worded clearly and the vocabulary must be understood by respondents (Palys, 1997). For school violence research, the level of education of student respondents should be considered when developing
a questionnaire. Subjective interpretations by respondents of terms used in the questionnaires is a problem in survey research:

Although the magnitude of bias in these surveys from differential interpretations of questions has not been empirically assessed, there is undoubtedly much variation in the meaning of particular words and phrases to members of different demographic groups... Regardless of how refined the objective meaning is that researchers attach to these terms, they remain prone to varied subjective interpretations by respondents. (Mosher, Miethe, & Phillips, 2002, p. 157)

(See page 37 of this thesis for examples of subjective interpretation of terms used in questionnaires).

The next chapter discusses national studies of school violence rates in order to determine the extent of school violence in North America.
CHAPTER TWO

NATIONAL STUDIES OF SCHOOL VIOLENCE RATES

This chapter will examine national government studies of school violence rates in Canada and the United States. Weapon-related violence in both of these countries will be reviewed using national studies. Primary studies of weapon-related violence in Canada will also be examined. For example, weapon-related victimization and weapon-carrying in Canada and the United States; school-associated violent deaths in the United States; inner-city school weapon-related victimization in the United States; and recommendations of the location of metal detectors (e.g., type and location of schools) based on the risk of violent death and nonfatal serious violent crimes.

For the studies which involved a survey of youth in schools (e.g., the Monitoring the Future Study, PRIDE Surveys, Youth Risk Behavior Survey), it is important to keep in mind that students who have dropped out, been truant on the survey day, or been sent to reform schools, jail, or alternative schools for troubled youth are being underrepresented (Junger-Tas & Marshall, 1999).
Canadian Statistics: Statistics Canada Studies

Statistics Canada began to study locations of crime (including schools) in 1988 in a survey entitled the Incident-based Uniform Crime Reporting Survey (UCR2 Survey) (Statistics Canada, 1998). The UCR2 Survey, based on crime data collected from police agencies, is not national and is not representative of Canada (Janhevich, 1997). Not all provinces participate in the survey and the survey is not representative of any specific region in Canada.

Statistics Canada reports figures on violent crimes occurring at schools in their annual publication entitled Canadian Crime Statistics. Statistics Canada's definition of school is not limited to elementary and high schools (the focus of this thesis), but also includes colleges, universities, and business schools (Statistics Canada, 2002b). The Statistics Canada figures for violence occurring in elementary and secondary schools in Canada is presumably low, however, because the overall rates for schools reported in Canadian Crime Statistics are low. The average rates (calculated by the author of this thesis) between 1994 and 2002 are as follows: homicide (0.4%), sexual assault (1, 2, 3) (3.7%), assault (1, 2, 3) (5.1%), kidnapping/hostage taking (1.1%), abduction (5.3%), robbery (1.8%), and criminal harassment (3%) (Statistics Canada, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002a, 2003).

Some Statistics Canada publications report violent youth crime on school property (Frank, 1992; Janhevich, 1997; Statistics Canada, 1993; Stevenson, Tufts, Hendrick, & Kowalski, 1998). The reported figures of youth violence are
not alarmingly high considering that the majority of incidents did not occur on school property and few serious physical injuries resulted from the reported violent incidents (Janhevich, 1997; Stevenson et al., 1998).

The UCR2 Survey from 1988 through 1991 reports the following rates of violent youth crime occurring in schools: minor assaults (15%), aggravated assaults (13%), sexual assaults (6%), and robberies (2%) (Frank, 1992). In 1992, 19% of violent incidents involving youth occurred in schools (Statistics Canada, 1993). This rate is low compared to a more recent Statistics Canada publication that reported a figure two times higher (Stevenson et al., 1998) (see page 30 of this thesis). In 1992, the following incidents involving young offenders took place in schools: minor assaults (24%), other assaults (17%), sexual assaults (15%), and robberies (10%) (Statistics Canada, 1993).

One study indicates that 22% of violent youth crime occurred on school property (Janhevich, 1997). Violent crime is defined as:

Violations against the person: violations causing or attempting to cause death (e.g., homicide), sexual assaults, assaults, violations resulting in the deprivation of freedom (e.g., abduction), robbery, extortion, criminal harassment, and other offences involving violence or the threat of violence. (Janhevich, p. 3)

The study, which analyses 1995 data from the UCR2 Survey, is limited to data reported by police departments, not including the RCMP, from five large Canadian cities: Vancouver, Edmonton, Calgary, Toronto, and Montreal. This rate of 22% is similar to the 19% rate reported by Statistics Canada (1992). Janhevich (1997) states that "given the fact that youths spend a large proportion
of their time in schools, this proportion is not alarmingly high” (p. 6). Most of the violent incidents on school property were minor assault (Assault level 1) (60%) (Janhevich, 1997, p. 8). According to Statistics Canada, minor assault, also referred to as common assault (level 1), is “the least serious form of assault and includes pushing, slapping, punching, and face-to-face verbal threats” (Trainor, 2002, p. 46).

Of all youth victims of violent school incidents, eight in ten were assaulted and one in ten was sexually assaulted (Janhevich, 1997). Janhevich concludes that “Despite the recent concern over the safety of the school environment, the overwhelming majority of all youth victims of violent crimes were victimized off school property (85%)” (p. 1).

In keeping with Statistics Canada’s aformentioned definition of school, the figures reported in the study did not pertain specifically to elementary and high schools (Janhevich, 1997) (although one may presume that violent youth crime occurred in elementary and high schools). The majority of violent incidents occurring at school, however, did not result in major physical injuries requiring “professional medical attention” (Janhevich, p. 14). Only 6% of violent incidents involved serious injury (Janhevich). Almost half (48%) of all violent incidents involved minor injuries “requiring first-aid at most” and no physical injuries were reported in 45% of all violent incidents (Janhevich, p. 14).
In 1997, 22% of victims of youth violence were victimized in schools (Stevenson, Tufts, Hendrick, Kowalski, 1998). During 1997, 9% of all youth crime occurred on school property: 38% of violent youth crime occurred at school (Stevenson et al., 1998). Violent offences is defined as “Incidents that involve unlawful acts in which the perpetrator uses or threatens to use violence against a person. These include homicide, attempted murder, sexual and non-sexual assault, robbery, and abduction” (Stevenson et al., p. 69). This reported rate of 38% is high compared to other similar studies by Statistics Canada (Janhevich, 1997; Statistics Canada, 1992). However, 67% of violent incidents in schools involved common assault: major assault accounted for 16% of violent incidents and robbery was 7% (Stevenson et al., 1998). It is important to recognize that the large proportion of minor assault figures resulted in alarmingly high rates of violent crime reported, therefore, there is no indication that serious violent crime in Canadian schools is out of control.

Only a small percentage of violent incidents occurring on school property resulted in serious physical injuries: “Less than 5% of victims reported major physical injuries (requiring medical attention), more than half of victims (52%) reported minor injuries (not requiring medical attention), and 44% reported no injuries” (Stevenson et al., 1998, p. 22). Based on these figures (nearly identical to Janhevich, 1997), one may presume that only a small percentage of elementary/high school students suffered major injuries.
Stevenson et al.'s (1998) study is based on Statistics Canada's UCR2 data which is not nationally representative (Stevenson et al.). In 1997, data was collected from 179 police agencies in six provinces (New Brunswick, Quebec, Ontario, Saskatchewan, Alberta, and British Columbia) (Stevenson et al., 1998).

The above Statistics Canada studies do not indicate that school violence in Canada is a serious problem both in terms of frequency of serious violent incidents and severity of injuries reported. In the most recent studies of violent youth crime in schools (Janhevich, 1997; Stevenson et al., 1998), minor assault is the most frequently reported type of violent incident.

**American Statistics: National Government Studies**

National Crime Victimization Survey

The U.S. Bureau of the Census each year conducts the National Crime Victimization Survey (NCVS) for the U.S. Department of Justice, Bureau of Justice Statistics which report rates of school violence. DeVoe et al. (2003) report that, based on data from the National Crime Victimization Survey (from 1992 through 2001), students aged 12 to 18 were safer at school than away from school, that is, less likely to be victims of nonfatal serious violent crime (rape, sexual assault, robbery, and aggravated assault) when at school compared to away from school. At school "includes inside the school building, on school property, or on the way to or from school" (DeVoe et al., 2002, p. 7). The NCVS findings indicate that in 2001, students, in this age group, were victims of about 161,000 nonfatal serious violent crimes at school and about 290,000 away from school (DeVoe et al., 2003).

NCVS data indicates that, from 1992 through 2000, students were approximately two or three times more likely to be the victim of a nonfatal serious violent crime away from school compared to at school (1.8 times in the year 2001). However, the rates of nonfatal violent crime (violent crimes include serious violent crimes and simple assault in the definition) at school and away from school, from 1992 through 2000, are more similar compared to the latter (rates at school are lower compared to away from school) (DeVoe et al., 2002).
In 2001, no difference could be detected in the rate of violent victimization at school and away from school: Students were victims of about 764,000 nonfatal violent crimes at school and about 758,000 away from school in 2001 (DeVoe et al., 2003).

The NCVS approximate rates for nonfatal violent crimes at school and away from school from 1992 through 2001 are as follows: 1.1 million (at school) compared to 1.7 million (away from school) in 1992, 1.4 million compared to 1.7 million in 1993, 1.4 million compared to 1.7 million in 1994, 1.3 million compared to 1.5 million in 1995, 1.1 million compared to 1.4 million in 1996, 1.1 million compared to 1.6 million in 1997, 1.2 million compared to 1.3 million in 1998, 884,000 compared to 1.1 million in 1999, 700,000 compared to 921,000 in 2000, and 764,000 compared to 758,000 in 2001 (DeVoe et al., 2003).

The NCVS approximate rates for nonfatal serious violent crimes at school and away from school from 1992 through 2001 are as follows: 245,000 (at school) compared to 750,000 (away from school) in 1992, 307,000 compared to 850,000 in 1993, 322,000 compared to 833,000 in 1994, 223,000 compared to 559,000 in 1995, 225,000 compared to 671,000 in 1996, 202,000 compared to 636,000 in 1997, 253,000 compared to 550,000 in 1998, 186,000 compared to 476,000 in 1999, 128,000 compared to 373,000 in 2000, and 161,000 compared to 290,000 in 2001 (De Voe et al., 2003).
The NCVS rates of the number of nonfatal violent crimes against students, aged 12 through 18, occurring at school compared to away from school per 1,000 students, from 1992 through 2001, are as follows: 48 (at school) compared to 71 (away from school) in 1992, 59 compared to 70 in 1993, 56 compared to 69 in 1994, 50 compared to 58 in 1995, 43 compared to 55 in 1996, 40 compared to 59 in 1997, 43 compared to 48 in 1998, 33 compared to 39 in 1999, 26 compared to 34 in 2000, and 28 compared to 28 (identical rates) in 2001 (DeVoe et al., 2003). During the period between 1992 through 2000, the reported rates away from school are higher, but still not drastically different (e.g., not two times higher) compared to rates at school (DeVoe et al., 2002).

The NCVS rates for nonfatal serious violent crimes against students aged 12 through 18 occurring at school compared to away from school per 1,000 students, from 1992 through 2000, are as follows: 10 (at school) compared to 32 (away from school) in 1992, 12 compared to 35 in 1993, 13 compared to 33 in 1994, 9 compared to 23, in 1995, 9 compared to 26 in 1996, 8 compared to 24 in 1997, 9 compared to 21 in 1998, 7 compared to 18 in 1999, 5 compared to 14 in 2000, and 6 compared to 11 in 2001 (DeVoe et al., 2003). The reported rates away from school are between two to three times higher, depending on the year (1.8 times in 2001), compared to rates at school.

The NCVS data indicates that students aged 12 through 18 are not as likely to be victimized at school compared to away from school (with the exception of the latest 2001 data that indicates no difference could be detected
in the violent victimization rate for students at school and away from school) (DeVoe et al., 2003). Based on this data, it would appear that simple assault is the most frequent type of violent behavior among American students, therefore, the most common school violence problem in America. The only difference between the definition of nonfatal serious violent crime and nonfatal violent crime is that simple assault is not included in the definition of nonfatal serious violent crime. The term simple assault is defined in the NCVS as "attack without a weapon resulting either in no injury, minor injury, or in undetermined injury requiring less than 2 days of hospitalization. Also includes attempted assault without a weapon" (Kaufman et al., 2001, p. 165). "Minor injuries include bruises, black eyes, cuts, scratches, swelling, chipped teeth, and undetermined injuries requiring less than 2 days of hospitalization" (Simon, Mercy, & Perkins, 2001, p. 12).

Limitations of NCVS

The NCVS, an alternative to official crime statistics, provides data on unreported crimes and victimization. The NCVS uses a sample of approximately 50,000 households: Respondents, aged 12 and older, are interviewed every six months over a 3 year period (Kaufman et al., 2001). The NCVS is limited, however, by individual and household attrition: “the movement of individuals and entire households out of the NCS’s address sample makes it difficult to assemble multi-wave data to measure multiple victimization” (Skogan, 1990, p.
The NCVS uses proxy interviewing for (1) 12 and 13-year-olds, when a household member does not want them to be interviewed directly, (2) incapacitated persons, and (3) household members either absent or physically or mentally unable to participate. Proxy interviewing is limited in that the person acting as representative may be unaware of victimization incidents the other household member experienced or lack information (Skogan, 1975) and, therefore, underreport. For children aged twelve and thirteen, there is a confidentiality issue when the parent is involved in the interview: a child may disclose information to an interviewer, when interviewed directly, that he/she would refuse to share with a parent.

The NCVS, like any victimization survey, are limited by issues such as false reports, overreporting and/or underreporting, and memory failure and decay (Hagan, 1997). Respondents may forget or fail to report information (either intentionally or unintentionally). Fattah, pointing out limitations of the NCVS, states:

Not all members of the sample who are reached can be interviewed. There are always some who refuse to cooperate, to be interviewed, to answer all or some of the questions asked, and so forth. And some of those who agree to be interviewed may not take the survey seriously and thus make no real effort to provide precise information or to answer the questions accurately. (1991, p. 36)

Interestingly, the NCVS safeguards against telescoping of events, using a bounded interview, where the first interview of a household and its members is
used only to bound future interviews (DeVoe et al., 2001; O’Brien, 1985) to ensure that incidents reported actually occurred during the six-month reference period (Office of Justice Programs, U.S. Department of Justice, Bureau of Justice Statistics, nd.) and to avoid duplication of crimes reported in future interviews (DeVoe et al.).

The NCVS has been criticized for the risk of subjective interpretation by respondents of some terms related to criminal victimization (Mosher et al., 2002). For example, the screening questions use the terms “attacked” or “threatened” regarding victimization incidents, however, the subjective understanding differs widely (Mosher et al., 2002, p. 157). Mosher et al., raising important questions regarding the NCVS, state:

Is someone ‘attacked’ when it is a situation of mutual combat? How do respondents in victimization surveys interpret situations of ‘grabbing,’ ‘punching,’ or ‘choking’ done in the context of either male or sibling roughhousing or physical banter among peers or spirited athletic contests (like football, hockey, and basketball)? Is the act of brandishing a firearm or knife a threat of violence? Is it reasonable to assume that there are no major gender, age, race, social class, or cultural differences in the interpretation of what constitutes a threat or attack? . . . . Under these conditions, estimates of the prevalence of violent or property crimes are likely to be distorted. (Mosher et al., p. 157)

The above argument by Mosher et al. (2002) is logical. The answer to Mosher et al.’s question, regarding whether flashing a weapon would be considered a threat of violence in the NCVS, is probably no: The NCVS does not include this act under the definition of serious violent crime or violent crime (see definitions listed in DeVoe et al., 2002, pp. 174-175). Attempted attack with a
weapon, however, is included as part of the definition of aggravated assault (listed under serious violent crime) (DeVoe et al., p. 174). The NCVS clearly distinguishes between threats involving weapons (either present or threatened) and attempted attacks with weapons (U.S. Census Bureau, Department of Commerce, 2001). In the NCVS Crime Incident Report, under the “How were you threatened” category, respondents are provided several options to check, three of which are as follows: (1) “Weapon present or threatened with weapon,” (2) “Attempted attack with knife/sharp weapon,” or (3) “Attempted attack with weapon other than gun/knife/sharp weapon” (U.S. Census Bureau, Department of Commerce, 2001, p. 4).


**School Crime Supplement (NCVS)**

The Bureau of Justice Statistics and the National Center for Education Statistics collaborated to add a supplement to the NCVS to collect data on school crime (Chandler, Chapman, Rand, & Taylor, 1998). The survey, entitled School Crime Supplement (SCS), is designed to collect additional information regarding school-related victimizations, on a national level, from students aged 12 through 19 (Chandler et al., 1998). A total of 4% of students reported violent
victimization in 1995, compared to 3% in 1989 (Chandler et al.). Violent victimization is defined in the SCS as “physical attacks or taking property from the student directly by force, weapons, or threats” (Chandler et al., p. 3). The researchers did not collect data separately for physical attacks, according to the study questionnaire (Chandler et al.), which would have been helpful to the reader to determine exactly what proportion of reported violent victimizations involved physical assault versus robbery. Although the researchers collected data on the seriousness of the incidents (e.g., asking victims if their injury resulted in seeing a doctor) (Chandler et al.), the results were not published in the report which would have been helpful.

In the aforementioned follow-up study, entitled the 1999 School Crime Supplement, a total of 4% of students, ages 12 through 18, reported experiencing violent victimization at school (Addington, et al., 2002). Violent victimization is defined as:

Incidents occurring at school as reported in the SCS (physical attack or taking or taking property from the student directly by force, weapons, or threats) or the National Crime Victimization Survey (NCVS) (rape, sexual assault, robbery, aggravated assault, or simple assault). (Addington et al., p. 5)

Both this study and the previous SCS are limited by both a broad definition of violent victimization (which includes robbery in that definition) and failure to report data collected on injuries that resulted in seeing a doctor.
Fast Response Survey System: Principal/School Disciplinarian Survey on School Violence

The National Center for Education Statistics (NCES) conducted a national survey on school principals/school disciplinarians, surveyed from 1,234 regular public elementary, middle, and secondary schools in the 50 states and the District of Columbia (Heaviside, Rowand, Williams, & Farris, 1998). This study, entitled the Principal/School Disciplinarian Survey on School Violence, solicited information concerning the 1996-1997 school year. Elementary schools were defined, in the study, as Grade 3 or less or Grades 1 through 8, middle schools include Grades 4 through 9, and high schools include Grades 9 through 12 or 10 through 12.

Ten percent of schools reported experiencing one or more serious violent crimes that were reported to police or other law enforcement officials (Heaviside et al., 1998). Serious violent crimes is defined in the research report as “murder, rape, or other type of sexual battery, suicide, physical attack or fight with a weapon, or robbery (Heaviside et al., p. iv). A total of 47% of schools reported less serious or nonviolent crimes defined as “physical attack or fight without a weapon, theft or larceny, or vandalism” (Heaviside et al., p. 35). A total of 28% of schools reported physical attacks or fights without a weapon, 6% reported physical attacks or fights with a weapon, 3% reported rape or other type of sexual battery, and 3% reported robbery (police or law enforcement were contacted for all of these incidents) (Heaviside et al.). The researchers did not
collect data on injuries that resulted from crimes which would have been helpful to the reader in providing more detail on the seriousness of incidents.

**School Survey on Crime and Safety (SSOCS)**

In a follow-up study of the FRSS, the National Center for Education Statistics conducted the School Survey on Crime and Safety (SSOCS) in the spring and summer of 2000 (Miller & Chandler, 2003). The SSOCS was administered to public elementary, middle, secondary, and combined school principals in regular schools in the 50 states and the district of Columbia (Miller & Chandler). The survey is a nationally representative cross-sectional survey of 2,270 principal respondents (Miller & Chandler).

A total of 36% of all public schools experienced at least one violent incident that they reported to police or other law enforcement (Miller & Chandler). Violence incidents is defined as “rape, sexual battery other than rape, physical attacks or fights with and without a weapon, threats of physical attack with and without a weapon, and robberies with and without a weapon” (Miller & Chandler, p. 5). The number of violent incidents almost doubles (71%) for reports of the total number of violent incidents that were not limited to only incidents reported to police or law enforcement personnel (Miller & Chandler). A total of 15% of American public schools experienced at least one serious violent incident that they reported to police or other law enforcement (Miller & Chandler). Serious violent incidents is defined as “rape, sexual battery other than rape, physical
attacks or fights with a weapon, threats of physical attack with a weapon, and robberies either with or without a weapon" (Miller & Chandler, pp. 5-6). This rate of serious violent crime cannot be compared to the previous study because of the different definitions of serious violent crime used in the two studies. For example, Heaviside et al.'s (1998) study does not include threats of physical attack with a weapon in the definition and Miller and Chandler's study does not include murder and suicide in the definition of serious violent crime.

A total of 64% of schools reported physical attacks or fights without a weapon, 5% reported physical attacks or fights with a weapon, 1% reported rape or attempted rape, 2% reported sexual battery other than rape, 0% reported robbery with a weapon, and 5% reported robbery without a weapon (Miller & Chandler). These rates were not limited to incidents reported to police or law enforcement personnel which explains the high rate of physical attacks or fights without a weapon which may not be serious enough to warrant police involvement. The researchers did not collect data on injuries that resulted from crimes which would have been helpful to the reader in providing more detail on the seriousness of incidents.
National Household Education Survey

The 1993 National Household Education Survey, a national study conducted by Westat for the U.S. Department of Education’s National Center for Education Statistics, reports that 56% of the student respondents had personally witnessed some type of crime or victimization at school, including bullying, physical attack, or robbery (Nolin et al., 1996). A total of 6,504 students in Grade 6 through 12 participated in the study and were surveyed from January through April 1993 (Nolin et al.). Eight percent of students reported being directly and personally bullied, 4% of students reported experiencing a physical attack, and only 1% of students reported being a victim of robbery (Nolin et al.). The reported rates of students experiencing violence (as defined in this thesis) is low.

Centers for Disease Control

The Centers for Disease Control and Prevention (CDC) conduct a national school-based survey of students, Grades 9-12, every 2 years entitled the Youth Risk Behavior Survey (YRBS). The YRBS reports that victimization rates for serious violent crime at school has remained about the same from 1992 through 2001. Rates of weapon-related victimization reported in the YRBS will be later discussed in this thesis. Reported rates for physical fighting on school property remained about the same over the years studied: 16% in 1993 (Kann, Warren, Harris, Collins, Douglas, Collins, Williams, Ross, & Kolbe, 1995), 16% in 1995
(Kann, Warren, Harris, Collins, Williams, Ross, & Kolbe, 1996), 15% in 1997
(Kann, Kinchen, Williams, Ross, Lowry, Hill, Grunbaum, Blumson, Collins, &
Kolbe, 1998), 14% in 1999 (Kann, Kinchen, Williams, Ross, Lowry, Grunbaum, &
Kolbe, 2000) and 13% in the 2001 sample (Grunbaum, Kann, Kinchen, Williams,
Ross, Lowry, & Kolbe, 2002). The United States Department of Health and
Human Services et al. (2000) did not provide a definition of a physical fight in the
YRBS questionnaire, therefore, it is unclear what would constitute a physical
fight.

The rate of student self-reported physical fighting in schools, reported in
the YRBS, is between 3.25 to four times higher compared to the national study
by Nolin et al. (1996).

**School-Associated Violent Deaths in the United States Study**

The CDC, the U.S. Departments of Education and Justice, and the
National School Safety Center conducted the first nationwide study of school-
associated violent deaths in the United States from July 1992 through June 1994
(Kachur, Stennies, Powell, Modzeleski, Stephens, Murphy, Kresnow, & Sleet, &
Lowry, 1996). A total of 105 school-associated violent deaths occurred in 25
states between July 1992 and June 1994 (Kachur et al.). Of the 105 deaths, 75
were school-aged children 5-19 years of age: 12 suicide and 63 homicide
(Kachur et al.). Kachur et al. defined a school-associated violent death as:
Any homicide or suicide in which the fatal injury occurred on the campus of a functioning elementary or secondary school in the United States, while the victim was on the way to or from regular session at such a school. (p. 1729)

Less than 1% of all homicides among school-aged children in the United States were school-related: Kachur et al. estimated that 0.6% of homicides and suicides among school-aged children were school-related.

The methodology used to obtain cases for the study is a model for other researchers to use, should they have the resources. Kachur et al. (1996) found cases for the study by first consulting with study collaborators at the United States Department of Education and National School Safety Center, where officials had been tracking school-associated fatalities since 1992 through a newspaper clipping service. In addition, voluntary reports from state and local education officers were used. The researchers then conducted a systematic search of two computerized newspaper and broadcast media databases. Those deaths (or “probable cases”) identified by the study collaborators were then confirmed by contacting at least one local press, law enforcement, or school official who was familiar with each case in order to conduct a brief interview to determine if the death met the “case definition” (Kachur et al., p. 1730). Those cases were then confirmed from official sources: police reports and medical examiner’s reports, and structured telephone interviews with a police officer who investigated the case and the school principal or another school spokesperson (Kachur et al.).
Other findings related to weapon-related violence from Kachur et al.'s study will be discussed later in this thesis.

An expanded follow-up study of the previous CDC study (Kachur et al., 1996) found that between July 1994 and June 1999, 220 school-associated violent events occurred in the United States: 202 involved the death of 1 victim and 18 events involved the deaths of multiple victims (Anderson, Kaufman, Simon, Barrios, Paulozi, Ryan, Hammond, Modzeleski, Feucht, Potter, & the School-Associated Violent Deaths Study Group, 2001). The 220 cases were categorized as follows: 172 homicides, 30 suicides, 11 homicide-suicides, 5 legal intervention deaths, and 2 unintentional fire-arm-related deaths.

A total of 253 victims died in these events (Anderson et al., 2001). Of these victims, 172 (68%) were students, 146 (85%) of which were due to homicide and 24 (14%) were due to suicide. A total of 7% (18) of the victims were faculty/staff. Of the known perpetrators, 103 (37%) were students. The rate of student perpetrators reported suggests that students, contrary to popular opinion, are not always totally responsible for school-related homicides.

The average annual rate of school-related violent death for students was 0.068 per 100,000 students (Anderson et al., 2001). This means that the chances of a student dying as a result of a school-associated violent incident is less than one in a million. Between 1994 and 1999, 0.9% of homicides and suicides among school-aged children were school associated (1% of all homicides and 0.3% of all suicides in the United States) (Anderson et al.).
These homicide rates are low. Other findings related to weapon-related violence, from Anderson et al.'s study, will be discussed later in this thesis.

Anderson et al.'s study used the same method as Kachur et al. (1996), but Anderson et al. did not state that they contacted at least one local press nor did they obtain the medical examiner's report. The latter would have been helpful for the study as supporting confirmation and documentation of incidents.

The CDC expanded on Anderson et al.'s (2001) study and reports that, between September 1992 through June 1999, 209 school-related violent death events occurred that involved either the homicide or suicide of a student (Safe and Drug Free Schools Program, U.S. Department of Education, the National Institute of Justice, Division of Violence and Office of Statistics and Programming, & the National Center for Injury Prevention and Control, Centers for Disease Control, 2001). During these seven school years, an average of 0.14 school-related homicide events occurred each school day (one event every 7 school days) and, on average, 0.03 suicide events occurred each school day (one event every 31 school days) (Safe and Drug Free Schools et al., 2001).

**Weapon-Related Violence**

Rates of weapon-related school violence, reported in the studies reviewed in this thesis, will be evaluated as either high or low depending on how they compare with other related studies reviewed in this thesis. For example, the average of all studies on students threatened with a weapon, including both the
highest and lowest rate calculated, will be used as a crude measurement which provides a method of comparison. The following discussion is a list of calculations of the average rates of Canadian and American studies, reviewed in this thesis, in addition to the range of these studies. All percentages reported will be rounded to the nearest whole number.

The average rate for students who reported being threatened with a weapon is 11%, the highest rate being 20% and the lowest being 2% (Bachman, Johnston, & O'Malley, 1998; Gomes, Betrand, Paetsch, & Hornick, 2000; Johnston, Bachman, & O'Malley, 1997a, 1997b, 2000a, 2000b, 2000c, 2000d, 2000e; Johnston, Bachman, O'Malley, & Schulenberg, 2002, 2003; PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2001, 2002a, 2002b, 2003; Ryan, Mathews, & Banner, 1993; Sheley, McGee, & Wright, 1992; Smith, Bertrand, & Hornick, 1995). The range is as follows: 2% (Gomes et al. 2000), 7% (Ryan et al., 1993), 8% (Smith et al., 1995), 10% (Johnston et al., 2003; PRIDE Surveys, 1999a, 2001), 11% (Johnston et al., 2000b, 2000c, 2000e; PRIDE Surveys, 1997, 1999b, 2000a, 2002a, 2002b), 12% (PRIDE Surveys, 2003); 13% (Johnston et al., 1997b, 2000a, 2000d; Johnston et al., 2002), 15% (Bachman et al., 1998), 16% (Johnston et al., 1997a), and 20% (Sheley et al., 1992).

The average rate for students admitting to threatening a student with a weapon is 6%, the highest being 7% and the lowest being 4% (PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2001, 2002a; Ryan et al., 1993). The range is as follows: 4% (Ryan et al., 1993), 5% (PRIDE Surveys, 2000a, 2001, 2002b,
2003), 6% (PRIDE Surveys, 1999a, 1999b), and 7% (PRIDE Surveys, 1997, 2002a).

The average rate of students who reported being threatened or injured with a weapon is 8%, the highest rate being 9% and the lowest being 7% (Grunbaum et al., 2002; Kann et al., 1995, 1996, 1998, 2000; Ryan et al., 1993). The range, however, was only between 7% to 9%.

The average rate of students who reported being hurt, injured, or assaulted by a weapon is 4%, the highest rate being 5% and the lowest being 3% (Johnston et al., 1997b, 1997g, 2000a, 2000b, 2000c, 2000d, 2000e, 2002, 2003; PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2001, 2002a, 2002b, 2003; Ryan et al., 1993). The range is as follows: 3% (PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2001, 2002a, 2002b; Ryan et al., 1993), 4% (Johnston et al., 2000e, 2003; PRIDE Surveys, 2003), and 5% (Bachman et al., 1998; Johnston, Bachman, and O'Malley, 1997b, 1997g, 2000a, 2000b, 2000c, 2000d, 2000e; Johnston et al., 2002, 2003).

The average rate for students admitting to hurting or assaulting a student with a weapon is 4%, the highest being 4% and the lowest being 2% (PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2001, 2002a, 2002b, 2003; Ryan et al., 1993). The range is as follows: 2% (Ryan et al., 1993), 3% (PRIDE Surveys, 2001, 2002b), and 4% (PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2002a, 2003).
Weapon carrying was reported by students an average of 13%, the lowest being 2% and the highest being 28% (Addington et al., 2002; Duffee, 1994; Grunbaum et al., 2002; Harris & Associates, 1993; Kann et al., 1995, 1996, 1998, 2000; McCreary Center Society, 1999; Sheley & Wright, 1995; Smith et al., 1995). The range is as follows: 2% (Addington et al., 2002), 6% (Grunbaum et al., 2002), 7% (Kann et al., 2000), 9% (Kann et al., 1998; McCreary Center Society, 1999), 10% (Kann et al., 1996), 12% (Kann et al., 1995), 13% (Harris & Associates, 1993), 25% (Duffee, 1994; Sheley & Wright, 1995), and 28% (Smith et al., 1995).

The average rate of student reported knife carrying was 16%, the highest being 16% and the lowest being 5% (McCreary Center Society, 1999; Smith et al., 1995). The range of reported knife carrying is as follows: 5% (McCreary Center Society, 1999) and 16% (Smith et al., 1995). The average rate of student reported gun carrying was 4%, the highest being 8% and the lowest being 0.3% (Addington et al., 2002; McCreary Center Society, 1999; Sheley et al., 1992; Smith et al., 1995). The range of reported gun carrying is as follows: 0.3% (Addington et al., 2002), 1% (McCreary Center Society, 1999), 6% (Sheley et al., 1992), and 8% (Smith et al., 1995). The average rate of club carrying was 5%, the highest being 9% and the lowest being 1% (McCreary Center Society, 1999; Smith et al., 1995). The range of reported club carrying is as follows: 1% (McCreary Center Society, 1999) and 9% (Smith et al., 1995).
Some reported rates in this thesis will not be judged as being either high or low because there are no studies, included in this thesis, to compare (e.g., Duffee, 1994; Kasian, 1994; Ryan et al., 1993). The percentage of students reportedly stabbed with a knife, in one study, (e.g., Sheley & Wright, 1995) is not comparable to another study that reports the percentage of students who were either attacked, attempted to be attacked, and/or threatened with a knife (e.g., Duffee, 1994).

Weapon-Related Victimization in Canadian Schools

The few Canadian studies on student weapon-related victimization in schools (including weapon incidents involving only a threat of a weapon) do not indicate alarmingly high rates (Duffee, 1994; Gomes et al., 2000; Janhevich, 1997; Kasian, 1994; Ryan et al., 1993; Smith et al., 1995).

A study of the Ottawa Roman Catholic Separate School Board surveyed teachers, non-teaching school personnel, and students to measure rates of school violence (Kasian, 1994). Approximately 16% of male and 5% of female students reported experiencing “aided assault” defined as in the questionnaire as “threatening or using a weapon in the commission of an assault” (Kasian, p. 2). The study would have been strengthened had the researcher collected data separately for threats versus actual incidents of weapon-related assaults. The above rates are estimates because exact rates for aided assault were not discussed in the study. The reader must estimate the percentages by viewing
the bar graph. The above rates will not be commented on because they are not comparable with other studies included in this thesis.

In another study, high school student respondents indicated the following types of weapons were used when they were attacked, attempted to be attacked, and/or threatened with a weapon at school: knife (20%), striking weapon such as a club (18%), and gun (4%) (Duffee, 1994). This study included a survey of 708 Grade 10, 11, and 12 students; 160 teachers; and 13 school-based administrators in one large Western Canadian city (Duffee). The majority of assault-related injuries were not serious and only 3% of students required medical attention (Duffee). However, a large number of students (32%) reported bleeding as a result of their assault (Duffee). No studies, reviewed in this thesis, solicited information concerning injuries and medical attention in a way comparable to Duffee's study. The number of weapon-related incidents, where the victim was injured with a weapon versus threatened with a weapon, is unknown. In the questionnaire, Duffee asked respondents the following question: "In the most recent episode, did any of those who assaulted you, attempted to assault you, and/or threatened to assault you have any weapons, such as knives, sticks, guns, etc. (Check [ ] ALL that apply). Gun, knife, stick, club or other striking weapon" (Appendix, Student Questionnaire, p. 24). Duffee's study would have been strengthened had he collected data separately for incidents involving threats with a weapon, versus injuries with a weapon, in order for readers to understand the seriousness of the incidents. The low
number of reported serious injuries and unknown nature of weapon-related incidents brings into question the significance of the high rates of weapon-related assaults reported in the study. The reader, therefore, should use caution when interpreting these weapon rates.

A survey of over 850 middle school students in Ontario found that weapon-related school violence is minimal (Ryan et al., 1993). Two different surveys were administered to Grade 6, 7, and 8 students, “School A”, (the pilot study) and Grade 7, 8, and 9 students (“School B”) (Ryan et al.). Of the School A students, only 8% reported being hurt or threatened with a weapon and 7% admitted that they had threatened or hurt someone with a weapon on school grounds (Ryan et al.). The rate of 8% is average compared to other studies reviewed in this thesis. The rate of 7% is not comparable with other studies in this thesis. Despite the fact that the researchers collected data separately for rates of students hurt with a weapon versus only threatened (these questions were asked separately on the questionnaire), the rates were not individually reported for School A in the study (Ryan et al.). This would have been helpful to the reader in order to determine the severity of reported incidents. This limitation was corrected in the second part of the study involving School B. Of the School B students, only 3% reported being assaulted with a weapon and 7% of students were threatened with a weapon: The rate of assault with a weapon is low and the rate of threats with a weapon is below average compared to other studies in this thesis.
A total of 2% of the School B students admitted to having assaulted someone with a weapon and 4% admitted to having threatened someone with a weapon on school grounds (Ryan et al., 1993). Both of these rates are low. In this study, information was not solicited for the type of weapon and weapon was not defined in the questionnaire administered to students, therefore, assault weapons are unknown.

A study of youth crime and violence in Calgary, Alberta found that 8% of students reported being threatened with a weapon while at school (Smith et al., 1995). This finding is based on 962 student survey questionnaires. Students were randomly selected from 20 junior and senior high schools (from both Catholic and public systems) and administered questionnaires (Smith et al., 1995). This rate is below average. Another study of students in Edmonton, Alberta found that only 2% of students reported being threatened with a weapon at school (Gomes et al., 2000). This rate is low. These findings are based on a survey of 2,001 students from 67 public and Catholic junior and senior high schools in Alberta (Gomes et al.).

The aforementioned Statistics Canada study of school violence in Canadian cities (Vancouver, Edmonton, Calgary, Toronto, and Montreal) reports that weapons were involved in 21% of all violent incidents on school property (Janhevich, 1997). This finding is based on a broad definition of school property by Statistics Canada and is not limited to grade schools (Janhevich, 1997), therefore, caution is necessary when interpreting these results. Weapons were
defined as "firearms, knives, or other piercing instruments, and blunt instruments such as clubs" (Janhevich, 1997, p. 13). Frequency of weapon "involvement" are as follows: clubs or other blunt instruments (9%), knives (8%), firearms (2%), and piercing instruments other than knives (2%) (Janhevich, 1997, p. 1). In cases where major injuries were reported, the following weapons were "present": knives (30%), blunt instruments such as clubs (22%), and physical force (28%) (Janhevich, 1997, p. 13). The researcher did not define what the terms present, or involved (Janhevich, pp. 1,13) mean, for example, whether it means that a weapon was used, threatened, or concealed in one's pocket. A similar study of UCR2 data found similar rates of weapon involvement (Stevenson et al., 1998).

**Weapon-Carrying in Canadian Schools**

A national study on weapons in Canadian schools suggests that weapons are a serious problem, particularly in large urban centers (Walker, 1994). Knives are the most common weapons in schools: the problem of guns is limited (Walker). Focus group and interview participants in Montreal, Toronto, Guelph, and Vancouver reported the highest rates of weapons use (Walker). The focus groups consisted of 13 police groups, 4 educator groups, and 3 customs groups, in addition to 13 separate individual interviews with police, educators, and customs personnel. The study also included a survey questionnaire mailed to 510 police services and 125 school boards across Canada: A total of 344 police surveys and 69 school board surveys were completed.
Focus group and interview participants indicate that knives—"the weapon of choice"—were confiscated daily in some schools in large urban centres (e.g., municipalities of 750,000 or more people) (Walker, 1994, p. 4). The presence of firearms were reportedly much less frequent: Firearms were indicated to be confiscated only once or twice a year. In some schools in Montreal and Toronto, however, firearms were believed to be discovered monthly (Walker). These results are based on twenty focus group (13 police groups; 4 educator groups, and 3 customs groups) and 13 separate individual interviews involving 235 individuals from the three groups (Walker). In addition, six consultations were conducted at meetings and conferences (Walker).

According to both police and educator survey respondents, firearms were more prevalent in junior and secondary schools in larger urban centres: police respondents indicated Ontario, Quebec, British Columbia, Alberta, and Manitoba, and educators indicated Ontario and British Columbia (percentage rates of each city was not included in the research report) (Walker, 1994). These findings are not surprising considering that Walker's point that school boards in the 250,000+ group were under-represented: school boards included large cities in Ontario, Quebec, and British Columbia. She asserts that this limitation was addressed by the use of focus groups, interviews, and other consultations, however, it is uncertain whether the above rates represent Canadian schools.
A total of 42% of police agencies reported that police officers seized knives in 1993 from youth, aged 12 to 17 years, within schools and on school property (the rate increased slightly from 1992 which was reportedly 35%) (Walker, 1994). “Prohibited knives”, however, was reported by police to be lower: 19% in 1992 and 20% in 1993 (Walker, p. 13). School boards reported that school authorities reportedly seized knives from youth at a rate of 58% in 1992 and 74% in 1993 (Walker). Prohibited knives, reported by school boards, is lower: 30% in both 1992 and 1993 (Walker). A similar national Canadian study, based on surveys with police agencies and school boards, is not available to compare results with.

Revolvers, automatic and semiautomatic handguns were reportedly seized by police officers at a rate of 13% of departments in both 1992 and 1993: These same weapon types were reportedly seized by school authorities, according to school boards, at a similar rate of 16% in these years (Walker, 1994). Shotguns and rifles were reportedly seized by police officers at a rate of 10% in 1992 and 11% in 1993 (Walker). These types of weapons were reportedly seized by school authorities at a rate of 9% during these years (Walker).

Police reported that firearms “affected” 37% of junior high schools and 38% of secondary/high schools and that “other weapons” affected 42% of junior high schools and 43% of secondary/high schools (Walker, 1994, p. 18). Educators indicated that firearms affected 48% of junior high schools and that
100% of secondary/high schools were either “not affected/very few affected” by firearms and that “other weapons” affected 98% of junior high schools and 100% of secondary/high schools (Walker, 1994, p. 16). Walker did not define what she means by affected. Does this term mean weapon carrying, weapon-related victimization, or both?

Walker (1994) found that 42% of students’ injuries were mainly physical (as opposed to psychological); however, she did not define the term physical. Do physical injuries include minor bruises and scratches? It would have been helpful to the reader if the researcher had collected data separately for major and minor injuries.

These seemingly high rates reported cannot be compared with other studies because a similar study was not conducted. Generalizations about weapons in Canadian schools today is not possible due to (1) lack of comparison of other studies, (2), lack of definition of terms, and (3), the study being dated 10 years.

Duffee (1994) found that 75% of the student respondents reported that they never carried a weapon to school. A total of 15% of students indicated that they hardly ever carried a weapon, 6% reported some of the time, 2% reported most of the time, and 2% stated all the time (Duffee). If almost 25% of students in this study have carried a weapon, this rate is high compared to other studies reviewed in this thesis. Of the students who reported carrying a weapon to school, a knife (62%) was the weapon of choice. Of the students who reported
carrying a weapon to school, the second most frequently identified weapon was a club or other form of striking weapon, indicated by 26% of student weapon carriers. Of the students who reported carrying a weapon to school, 9% reported that they carried a gun to school. Similar studies are not available, in this thesis, to compare types of weapons reported among weapon carrying students.

Smith et al. (1995) found that 28% of the students reported that they had possessed at least one weapon at school within the past school year. This rate is high. The most commonly possessed weapon reported, by the total students surveyed, was illegal knives (16%) followed by homemade weapons (12%), clubs or bats (9%), handguns (3%), pellet guns (5%), and replicas (7%) (Smith et al.). For the purposes of this thesis, the rate of handguns and pellet guns (8%) will represent the rate of guns in Smith et al.'s study because both weapons are guns (albeit different types). The rate of both knives and guns is high compared to other similar studies reviewed in this thesis: There are no similar studies in this thesis to compare rates of clubs or bats.

In 1997, 12% of violent incidents in schools involved a weapon: A knife was “present” in 6% of violent incidents, a blunt instrument in 5%, and firearms in 1% (Stevenson et al., 1998, p. 22). The researchers did not define what “present” means, for example, whether it means that a weapon was used, threatened, or concealed in one's pocket (Stevenson, et al., p. 22). This study is based on results from Statistics Canada's UCR2 Survey (Stevenson et al.). The rate of 12% is low compared to the rate of 21% reported in a previous study of
UCR2 data (Janhevich, 1997). The figures regarding knives, blunt instruments, and firearms are similar to Janhevich's study. Janhevich asserts that the most serious weapons present in the reported violent incidents are as follows: clubs or other blunt instruments (9%), knives (8%), firearms (2%), and piercing instruments other than knives (2%). The biggest difference between Janhevich's and Stevenson et al.'s study regarding rates of weapons is blunt instruments: Janhevich reports a rate 4% higher. Interestingly, Janhevich also used the terminology "present," "involved," and "discovered" to describe weapon-related incidents (Janhevich, pp. 1, 13).

A survey study of adolescent health and risk behavior of students in British Columbia, Canada found that only 9%, of the total students surveyed, carried some weapon to school in the past month (McCreary Center Society, 1999). This rate is below average. The most commonly possessed weapon was a knife or razor (5%), followed by a gun (1%), club, bat, or stick (1%), and other (2%). The rate of both knives and guns is low compared to other similar studies in this thesis. Approximately 26,000 students were surveyed for this study in 1998.
Weapon-Carrying and Victimization by Weapons in American Schools

National American Studies

There are several national studies, conducted annually or bi-annually, on weapon carrying and victimization in American schools by the Centers for Disease Control, PRIDE Surveys, and the University of Michigan.

Since 1993, the Centers for Disease Control and Prevention conduct a survey, every 2 years, entitled the Youth Risk Behavior Surveillance. The survey, which includes a study of school-related violence, is designed to produce a nationally representative sample of students (Grades 9-12) in the United States. Reports of prevalence of weapon carrying on school property 30 days preceding the survey is as follows: 12% in 1993 (Kann et al., 1995), 10% in 1995 (Kann et al., 1996), 9% in 1997 (Kann et al., 1998), 7% in 1999 (Kann et al., 2000), and 6% in 2001 (Grunbaum et al., 2002). These rates are all low compared to other studies reviewed in this thesis. In 1993, 1995, 1997, 1999, and 2001 about 7 to 9% of students reported being threatened or injured with a weapon such as a gun, knife, or club on school property (in the 12 months before the survey) (Grunbaum et al., 2002; Kann et al., 1995, 1996, 1998, 2000). That is, 7% in 1993 (Kann et al., 1995), 8% in 1995 (Kann et al., 1996), 7% in 1997 (Kann et al., 1998), 8% in 1999 (Kann et al., 2000), and 9% in 2001 (Grunbaum et al., 2002).
These rates are about average compared to other studies reviewed in this thesis: the difference between the highest and lowest rate reported is only 2%. This finding is based on the survey question “During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property?” (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, and Division of Adolescent and School Health, 2003, p. 5). The terms threatened and injured should not have been included in the same question in order to determine whether the majority of reported incidents were threats, which is less serious in nature compared to incidents of weapon-related injury.

Another recent national study found that 1.5% of students reported carrying a weapon and that 0.3% of students reported carrying a gun to school (Addington et al., 2002). Both of these rates are low compared to other studies reviewed in this thesis.

**PRIDE Surveys**

of students reported being hurt by a student using a gun, knife, or club from years 1995-1996 through 2001-2002 (PRIDE Surveys, 1997, 1999a, 1999b, 2000, 2001, 2002a, 2002b, 2003). These rates are all low. The average range of all the studies, reviewed in this thesis, regarding students being hurt by a weapon is very slight. PRIDE Surveys did not define the term hurt either in the reports or questionnaires (PRIDE Surveys, 1995, 1997, 1998, 1999a, 1999b, 2000a, 2000b, 2001, 2002a, 2002b, 2003). The type of injuries suffered is unknown. Did the majority of students suffer only bruises and scratches or more serious injuries?

Few students reported hurting a student by using a gun, knife, or club: 4% from years 1995-1996 through 1999-2000 and 2002-2003 (PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2002a, 2003) and 3% from years 2000-2001 and 2001-2002 (PRIDE Surveys, 2001, 2002b). These rates range from being low to high, however, the range of all the rates is very slight.

These low figures may lead some readers to believe that weapon-related violence in schools is not a serious concern. Based on these results, can school security systems, such as metal detectors, be justified? The answer is that no one can exactly predict where a serious incident of school violence involving weapons may occur, such as the shocking events of Littleton, Colorado and Jonesboro, Arkansas, and, therefore, metal detectors should be installed in as many schools as possible.

The following students reportedly admitted to hurting a student using a gun, knife, or club: 4% in years 1995-1996 through 1999-2000, 3% in years 2000-2001 and 2001-2002, and 4% in 2002-2003 (PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2001, 2002a, 2002b, 2003). The reported rates of 3% are slightly below average and the 4% rate is both high and average; however, the range of these rates is slight, as aforementioned.

The following students admitted to threatening a student with a gun, knife, or club: 7% in years 1995-1996 and 1996-1997, 6% in years 1997-1998 and 1998-1999, and 5% in years 1999-2000 through 2002-2003 (PRIDE Surveys, 1997, 1999a, 1999b, 2000a, 2001, 2002a, 2002a, 2002b, 2003). These rates range from being high to low, with the 6% rate being about average, the 7% rate being high, and the 5% rate falling between the average rate and lowest rate. The range is slight.
Monitoring the Future Study

The University of Michigan's Institute for Social Research conducts the Monitoring the Future Study on an annual basis (Johnston et al., 2003). High school seniors, surveyed from approximately 130 public and private high schools in the United States, are selected to represent an "accurate cross-section of high school seniors throughout the United States" (Johnston et al., 2003, p. iii).

The following Grade 12 students reported being injured with a weapon (knife, gun, or club) from 1993 through 2002: 5% in 1993 through 1999 and 2001 (Johnston et al., 1997a, 1997b, 2000a, 2000b, 2000c, 2000d, 2000e, 2002; Bachman et al., 1998) and 4% in 2000 and 2002 (Johnson et al., 2000e, 2003). These rates are all about average.

It is unknown how serious in nature the reported injuries were (Bachman et al., 1998; Johnston et al., 1997a, 1997b, 2000a, 2000b, 2000c, 2000d, 2000e, 2002, 2003). The Monitoring the Future Survey did not define injury or provide a standard of severity in the questionnaire, such as designing the questionnaire for students to indicate types of injuries from scratches and bruises to broken bones, stab wounds, etc. Although an injury with a weapon may seem to be serious in nature, it is possible that the victim may have suffered only minor bruising from a club or a minor scratch from a knife. Data was not collected for each weapon type, therefore, it is unknown which type of weapon caused the reported injury.
The following Grade 12 students reported being threatened with a weapon but not actually injured: 16% in 1993, 15% in 1994, 13% in 1995, 1996, 1999, and 2001, 11% in 1997, 1998, and 2000 (Bachman et al., 1998; Johnston et al., 1997a, 1997b, 2000a, 2000b, 2000c, 2000d, 2000e, 2002), and 10% in 2002 (Johnston et al., 2003). These rates are similar to the findings of the aforementioned PRIDE Surveys. None of these rates are low. The rates range from being about average to falling between high and average.

**School-Associated Violent Deaths in the United States Study**

Firearms are reported to be the cause of the majority of school-associated violent deaths (77%) and knives or other blades were used in 17% of deaths (Kachur et al., 1996). A total of 91% of the primary offenders (the individuals responsible for the death) were carrying a weapon at the time of the fatal injury (Kachur et al.). Kachur et al. found that less than 1% of all homicides among school-aged children in the United States were school-related: they estimated that 0.6% of homicides and suicides among school-aged children were school-related. The majority of cases (81%) were homicides. Although the rate of school-associated violent deaths reported in the study is low, the fact that weapons were a cause of the majority of deaths (94%) highlights the issue of weapons in schools. It should be noted, however, that, of the 65% violent deaths that occurred on campus, 30% of those deaths occurred inside the
school building, 11% occurred in parking areas, 25% occurred in outdoor locations on campus, and 35% occurred off campus (street/sidewalk, in vehicle, and private property) (Kachur et al., 1996). Metal detectors in schools are limited to controlling weapons inside the school building, however, if almost a third of violence occurs inside the school building, as reported in Kachur et al.'s study, then metal detectors are still vital in school violence prevention. Video surveillance and police patrol of outdoor locations on campus could be used to help deter and prevent school violence from occurring on campus, outside the school building.

Anderson et al. (2001) report that firearms were responsible for 75% of school-associated violent deaths and knives or other blades were used in 14% of the deaths. This rate is similar to the findings reported by Kachur et al. (1996). Anderson et al.'s study also solicited information concerning the number of method of injuries and locations of events that were homicide (this type of analysis was not conducted in the previous Kachur et al., 1996, study). Firearms were responsible for 69% of homicides and knives or other blades were responsible for 18% of homicides (Anderson et al.). Of the 62% of homicides that occurred on campus, 19% of those took place in the school building, and 17% in the parking area, 17% in the sporting fields/playground, and 17% other outdoor location (Anderson et al.). A total of 38% of homicides occurred off campus (streets/sidewalk, in vehicle, waiting for vehicle, private property or other off-campus location) (Anderson et al.). Metal detector programs could be
justified based on the above rates. It can be reasoned that if almost one quarter of all homicides occur inside a school building, and weapons were responsible for most of the homicide-related fatal injuries (87%), occurring either on or off campus, then weapons must have been largely responsible for the indoor school homicides. As for the outdoor campus areas, video surveillance and police patrol could be used to help deter and prevent these homicides.

Anderson et al. (2001) state that the "over-all school-associated student homicide rates appear to have increased in recent years, which can be attributed to an increase in homicide rates for students killed in multiple-victim homicide events" (p. 2701).

**Fast Response Survey System: Principal/School Disciplinarian Survey on School Violence**

Based on the Principal/School Disciplinarian Survey on School Violence, a total of 6% of schools reported incidents of physical attacks or fights with a weapon that occurred at the school, involved students, and occurred during school hours or at school-sponsored events (Heaviside et al., 1998). A physical attack or fight with a weapon was defined in the questionnaire as follows:

An actual and intentional touching or striking of another person against his or her will, or the intentional causing of bodily harm to an individual with a weapon. This category should only be used when the attack is serious enough to warrant calling the police or other law enforcement representative. (Heaviside et al., 1998, p. A-4)
The rates of the two variables, physical attacks and fights with a weapon, should have been separately reported in order that readers could understand the extent of weapon-related violence. In Miller and Chandler’s (2003) follow-up study, the variables were also not separated: 5% of all public schools reported a physical attack or fight with a weapon. This rate of 5% is not limited to only incidents reported to the police or law enforcement personnel (Miller & Chandler, 2003).

The American Teacher Survey

The American Teacher survey found that 13% of students reported carrying a weapon to school (Harris & Associates, 1993). The survey is based on interviews with 1,000 teachers from Grades 3 through 12, 1,180 students from the same grades, and 11 police department officials. This rate is 1% below the average rate reported from other studies included in this thesis. A total of 4% of students reported being threatened with a knife or a gun and 2% had a knife used or gun fired on them in the past year (Harris & Associates, 1993). The researcher did not collect data separately for student knife and gun victimization, therefore, these rates cannot be compared with other studies reviewed in this thesis.
Inner-City Schools: Weapon-Related Victimization

A national survey of students in inner-city high schools found that inner-city schools report high rates of weapon-related student victimization (Sheley & Wright, 1995). Schools selected for their study were identified by district administrators as inner-city schools known for recent firearms incidents and for students who likely experienced/had been involved in gun-related violence (Sheley & Wright). Ten inner-city high schools, selected from four U.S. states (California, Illinois, Louisiana, and New Jersey), were chosen for the study with a mean of 165 students surveyed in each school (7-21% of student populations were surveyed from each school) (Sheley & Wright). The researchers do not claim that their study findings are representative of inner-city students in general or necessarily representative of the students in the participating schools because selection of the schools was not random, participation was voluntary, and some students were absent on the day of the survey (Sheley & Wright).

Weapon-related victimization was frequently reported by students in the study: One in five students (one in three males) of the respondents reported that they had been shot at, stabbed, or injured with a weapon at or in transit to or from school in the past few years (Sheley & Wright, 1995). A total of 20% of the student respondents indicated that they had been threatened with a gun (Sheley et al., 1992) and 12% reported they had been shot while at school, or in transit to or from school, in the last few years at the time of the study (Sheley, McGee, &
Wright, 1992; Sheley & Wright, 1995). A total of 8% of students indicated that they had been stabbed with a knife and 13% of students reported being injured with a weapon other than a gun or knife in school, or while in transit to or from school, in the past few years (Sheley & Wright, 1995). The rate of being threatened with a gun is high.

The above findings are based on a survey question that asked respondents to indicate whether they had experienced certain types of victimization: “How often have the following things happened to you while you were in school or on your way to or from school in the last few years?” (Wright, Sheley, & Smith, 1991, p. 22). It would have been helpful if the researchers had collected data separately for “in school” and “on the way to or from school” (Wright et al., 1991, p. 22). Data on weapon-related victimization on school property may have provided evidence to determine whether metal detector programs, in these schools, are needed or if much of the victimization is occurring while in transit to or from school.

One in four students reported carrying a weapon to school (Sheley & Wright, 1995). This rate is high compared to other studies reviewed in this thesis. Six percent of the students reported carrying a gun to school (Sheley et al., 1992). This rate is average.

Sheley and Wright (1998) also surveyed high school administrators from these inner-city high schools (53 administrators from 53 high schools). The study indicates that 58% of administrators reported recalling incidents involving
guns on school grounds during the past 3 years: 20% recalled three or more incidents (Sheley & Wright). A total of 46% recalled at least three incidents involving knives on school grounds during the past 3 years and only 17% remembered none (Sheley & Wright).

Although the study findings cannot be generalized, the findings indicate that weapon-related student victimization is problematic in these schools. The inner-city schools in this study may be good candidates for a metal detector system. The researchers did not discuss security of the surveyed schools, therefore, it is unknown whether these schools have metal detectors.

**Metal Detectors in Elementary Versus Secondary Schools**

School security, such as metal detectors, should be a priority in high schools (Grades 8-12, or 9-12) as high school students are at a greater risk of violent deaths compared to elementary school students: the following studies to be discussed indicate this heightened risk. A national study in the United States reports that students in secondary school (Grades 9-12) had an estimated rate of school-associated violent death 13 times higher compared to students in elementary school (pre-kindergarten-Grade 8) (Kachur et al., 1996). School-associated violent deaths occurred to 10 elementary school students and 63 secondary school students: a rate 6 times higher for secondary school students (Kachur et al.).
A follow-up study found that students in senior high schools (Grades 9-12) or combined grade schools (schools that combined high school grades with lower grades) had a school-associated violent death rate per 100,000 students that was almost 14 times greater than students in elementary schools (pre-school-Grade 8) (Anderson et al., 2001). The actual number of school-associated violent deaths for students in elementary school students was 15 (of which 13 were homicide), 26 for middle/junior high school (of which 23 were homicide), and 129 for high school/combined (of which 108 were homicide) (Anderson et al.). It is important to keep in mind that the actual risk of students being the victim of a school-associated violent death is very low (0.068 per 100,000 students, of which homicide accounts for 0.058) (Anderson et al.).

Another national study found that public high schools reported serious violent crime incidents at a rate of five times higher than elementary schools (21% compared to 4%) (Heaviside et al., 1998). A total of 19% of middle schools in this study reported serious violent crimes (Heaviside et al.). In a follow-up study, Miller and Chandler (2003) found that secondary schools report a higher incidence of serious violence (29% for middle schools and 29% for secondary schools) compared to elementary schools (14%).
Metal Detectors in Urban, Suburban, and Rural Schools

Metal detector programs should be a priority in urban schools, compared to rural and suburban, as students in urban school districts are at greater risk of violent deaths, followed by students in suburban school districts: The following study findings to be discussed indicate this trend. A national study in the United States indicates that the estimated rate for students in urban school districts was 9 times higher than the estimated rate for students in rural school districts (Kachur et al., 1996). The number of school-associated violent deaths of students by type of school district are as follows: urban (47), suburban (23), and rural (6) (Kachur et al.). Similarly, a follow-up study demonstrates that school-associated violent deaths occur more frequently for students in urban school districts compared to students in suburban and rural school districts: 75 urban (66 of 75 were homicide), 63 suburban (51 of 63 were homicide), and 29 rural (24 of 29 were homicide), (Anderson et al., 2001). The average annual rate of students that died as a result of homicide by school district type are as follows: urban (0.075 per 100 000 students), suburban (0.053 per 100 000 students), and rural (0.037 per 100 000 students) (Anderson et al., 2001). The rate of school-associated homicide for students in urban school districts (per 100 000 students) was twice as high as the rate for rural school districts (Anderson et al., 2001).

A national study found that central city schools reported nonfatal serious violent crimes at a rate twice that of rural schools (17% compared to 8%)
(Heaviside et al., 1998). Heaviside et al. found that urban fringe schools ranked 11% and town schools ranked 5%. In a more recent study, by Miller and Chandler (2003), 27% of city schools reportedly experienced at least one serious violent incident compared to 12% of rural school (a rate more than 2 times higher): urban fringe areas ranked 22% and towns ranked 20%. The two studies cannot be compared for rates of serious violence, according to school location, because of a difference in definition of serious violent crimes and serious violent incidents: While similar in definition, Miller and Chandler (p. 9) include “threat of physical attack with a weapon” in their definition of serious violent incidents and Heaviside et al. (p. 35) include murder and suicide in their definition of serious violent crime. The following national studies indicate that students living in rural areas are not always less vulnerable to nonfatal serious violent crime at school compared to students in urban and suburban areas.

The National Crime Victimization Survey (1996 through 2001) found that students (aged 12 through 18) living in urban and suburban areas typically experience nonfatal serious violent crime at school (or going to or from school) at similar rates and rural students are either equally likely or less vulnerable depending on the year of study (DeVoe et al., 2003, Kaufman et al., 1998-2001). In 2001, no difference was found between rates of both nonfatal serious violent crime and nonfatal violent crime at school between students living in urban, suburban, and rural areas (DeVoe et al. 2003). In 1996, students living in urban areas (14 per 1,000 students) were more vulnerable to serious violent crime than
were students in rural areas (4 per 1,000 students) (suburban schools ranked 8 per 1,000 students) (Kaufman et al., 1998). In 1997, students living in urban (12 per 1,000 students) and suburban (8 per 1,000 students) areas were more likely to be the victim of a nonfatal serious violent crime compared to rural students (2 per 1,000 students) (Kaufman et al., 1999). In 1998, students living in urban, suburban, and rural students were equally likely to be victimized by serious violent crime at school (Kaufman et al., 2000). In 1999, students living in urban (9 per 1,000 students) and suburban (8 per 1,000 students) areas experienced nonfatal serious violent crimes at similar rates compared to rural (2 per 1,000 students) (Kaufman et al., 2001). In 2000, no difference was found in the rates of serious violent crime at school between students living in urban, suburban, and rural areas (DeVoe et al., 2002). The above findings indicate that students living in rural areas are not always less vulnerable to serious violent crimes at school compared to urban and suburban, therefore, an implementation of metal detectors in all types of schools are recommended to help prevent serious violent crimes.

Critics of Metal Detector Programs

Many schools (school districts) may reject the idea of metal detectors because of the expense, inconvenience, and perception of the low risk of a school-associated violent death occurring in their school. Whether students attend elementary or secondary schools located in urban, suburban, or rural
districts, there is a risk, albeit low risk, of a school-associated violent death. Within this low risk category, students attending urban and secondary schools are at the highest risk of a school-associated violent death (Anderson et al., 2001; Kachur et al., 1996; Miller & Chandler, 2003) or a serious violent crime (Heaviside et al., 1998). While the risk is low, there is no guarantee that a school-associated violent death will not occur. Homicide could potentially occur at any school. The role of metal detectors in schools should be viewed as a crime prevention tool for all schools, and not just as a security measure for those particular schools that have encountered weapon-related violence. School decision makers (principals of schools and district administrators) who reject metal detector programs may one day regret their decision should a violent death occur in one of their schools.

Conclusion

The Statistics Canada studies do not indicate that school violence in Canada is a serious problem both in terms of frequency of serious violent incidents and severity of injuries reported. In the most recent studies of violent youth crime in schools (Janhevich, 1997; Stevenson et al., 1998), minor assault is the most frequently reported type of violent incident. Similarly, simple assault is the most frequently reported violent behavior among American students, therefore, the most common school violence problem in America (DeVoe et al., 2002, 2003; Heaviside et al., 1998; Kaufman et al., 1998, 1999, 2000, 2001).
Incidents of serious violent victimization (as defined by DeVoe, 2002, 2003) are low in American schools (Addington et al., 2002; Chandler et al., 1998; DeVoe et al., 2002, 2003; Heaviside et al., 1998; Kaufman et al., 1998, 1999, 2000, 2001; Nolin et al., 1996) and school-associated violent deaths in the United States is also low (Anderson et al., 2001; Kachur et al., 1996). The chances of a student dying as a result of a school-associated violent incident is less than one in a million (Anderson et al., 2001). Data from the National Crime Victimization Survey (from 1992 through 2001) indicates that students, aged 12 to 18, were safer at school than away from school, that is, less likely to be victims of nonfatal serious violent crime (rape, sexual assault, robbery, and aggravated assault) when they were at school than away from school (DeVoe et al., 2002, 2003; Kaufman et al., 1998, 1999, 2000, 2001).

Of all the studies reviewed in this thesis regarding weapon-related school violence, the averages rates are as follows: students who reported being threatened with a weapon (11%), students admitting to threatening a student with a weapon (6%), students who reported being threatened or injured with a weapon (8%), students who reported being hurt, injured, or assaulted by a weapon (4%), students admitting to hurting or assaulting a student with a weapon (4%), weapon carrying reported by students (13%), student reported knife carrying (16%), student reported gun carrying (4%), and student reported club carrying (5%).
Firearms are reported to be the cause of the majority (three-quarters) of school-associated violent deaths between July 1992 through June 1999 (Anderson et al., 2001; Kachur et al., 1996). Knives or blades were used in 17% of deaths from 1992-1994 (Kachur et al., 1996) and 14% from 1994-1999 (Anderson et al., 2001). Metal detector programs in schools could be justified based on these high rates of weapon involvement in violent deaths.

There should be a priority for security such as metal detectors in high schools. High school students are at a greater risk of violent deaths compared to elementary school students (Anderson et al., 2001; Kachur et al. 1996). According to one study, public high schools reported serious violent crime more frequently compared to elementary schools in the United States (Heaviside et al., 1998). While urban school students are at a higher risk of violent deaths (Anderson et al., 2001; Kachur et al., 1996), according to the National Crime Victimization Survey (1997-2001), students living in urban areas are not always the most vulnerable to serious violent crime compared to rural and suburban schools (DeVoe et al. 2002, 2003; Kaufman et al., 2000). For example, in 1998, 2000 and 2001, no difference was found between rates of nonfatal serious violent crime at school among students living in urban, suburban, and rural areas (DeVoe et al., 2002, 2003; Kaufman et al. 2000), therefore, an implementation of metal detectors in all types of schools are recommended to help prevent serious violent crimes.
It is clear to conclude that students are regularly threatened in schools with violence, and that we must implement programs to make the school environment safer.

The next chapter will examine and critically review studies of Canadian conflict resolution and peer mediation programs.
CHAPTER THREE

CANADIAN CONFLICT RESOLUTION RESEARCH

This chapter reviews Canadian evaluation studies of conflict resolution and peer mediation programs. In an effort to limit the scope of this thesis and focus on Canadian content when available, only Canadian conflict resolution studies will be evaluated. The conceptual elements of the research are a focus for determining the quality of studies. Most studies did not define (or clearly define) terms used in the research report and/or questionnaire survey administered to subjects. Most studies did not use a control group. As a result of methodological flaws and limitations, the evidence is slim in support of these programs reducing school violence.

In reviewing the studies, it is important to keep in mind that reliance of student survey responses, as a research methodology, is limited in that a student’s response of attitudes, regarding conflict and violence, may be opposite to the student’s actual behavior in real life situations. Many of the program evaluations are based on interviews (Brown, Soudack, Edwards, Kearns, & Harris, 1995; Cochrane & Saroyan, 1997; Croft, 1995; Fulton, 1996; Kenway, 1997). When reviewing interview research, one must be aware that “Respondents are sometimes reluctant to report controversial or deviant attitudes or behaviors in interviews but are willing to respond to an anonymous self-administered questionnaire” (Babbie, 1999, p. 249). The interview methodology
is limited by lack of anonymity because questions are asked face-to-face (Champion, 1993). It is likely, particularly when asking questions related to a sensitive topic like school violence, that some students may not wish to disclose information related to personal victimization if they had chosen not to report the incident when it occurred. There is a possibility that respondents will either not disclose all information or provide false information. A common problem is social desirability where people provide false but favorable information about themselves (Champion). Finally, there is also the problem of the interviewer recording inaccurate information (Champion). In the introduction of this thesis, there is a discussion as to the limitations of violence prevention research.

**Canadian Studies**

Pendharkar (1994) surveyed Grade 8 students, from three Saskatchewan schools, to evaluate the effects of a conflict resolution program. Both an experimental and control group were used in the study. However, the control group was neither random nor matched, to the experimental group, which is a limitation of this study. Ideally, a randomly assigned control group should be part of a research design (Lam, 1989; Logan, 1972): If this is not possible, the researcher should use a comparable treatment and control group, where students are matched on demographics such as sex, race, and age (Lam, 1989). The experimental group were given both a pretest and a posttest. The posttest was administered upon completion of the program. Lack of delayed follow-up is
a limitation of this study. As Logan wisely states, "there should be some follow-up or delayed measurement . . . for both the treatment and control groups. This is especially important with respect to criminal behavior, which cannot be measured on-the-spot since it only manifests itself over some period of time" (1972, p. 379).

The researcher used the Student Attitudes About Conflict scale, a 32-item, 4-point Likert Scale by Jenkins & Smith (1987) (cited in Pendharkar, 1994, p. 32). Students were also asked six open-ended questions that are part of Lam's (1989) School Mediation Program Evaluation Kit (Pendharker).

The questionnaire is limited by a lack of definition of the term fighting. Students were asked to rate if "fighting with someone can be a good way to solve a problem" (question #23) (Pendharkar, 1994, Appendix F). Is the term fighting limited to physical fighting or can it also include verbal disputes? Questions #8 and #30 asked students to evaluate whether they would try to "talk out a problem" instead of fighting (Pendharkar, Appendix F). Again, it is not clear whether the term fighting includes verbal fights (e.g., yelling and screaming) or is limited to physical attacks. Questions #46 and #47 are more clear than questions #8, #23, and #30 in that students were asked how many physical fights they were involved in at school each day or during a typical week. Question #48 and #49 are clear in that students were asked how many verbal fights they were involved in at school each day or during a typical week.

Examples of verbal fights provided in the questionnaire are as follows: "shouting
matches, insults or put downs" (Pendharkar, Appendix F).

The lack of clarity or definition of some terms weakened the study. Although types of fighting were specified later in the questionnaire, the term fighting was not defined in the first three questions related to fighting: Therefore, student subjects may not have clearly understood the questions.

At posttest, experimental group students reported significantly (at the $p < .05$ level) more positive attitudes about conflict compared to control group students (Pendharkar, 1994, p. 50). There were no significant differences between the experimental and control groups regarding approaches to conflict resolution and problem solving reported to be used by these groups (Pendharkar). Interestingly, the experimental group males reported increased involvement in physical and verbal fights at posttest (Pendharkar). It would appear the program was counterproductive in this respect. As Pendharkar wisely points out, student attitudes about conflict resolution may not reflect their actual behavior. While a student may indicate on the questionnaire that talking things out the best way to resolve conflict, this does not necessarily predict actual behavior. In Pendharkar's study, the reported rates of positive attitudes toward conflict and increased male involvement in physical and verbal fights supports his assertion regarding attitudes and actual behavior.

The control group of 25 students was small compared to the experimental group of 94 students (Pendharkar). A larger control group should have been obtained for this study in order for a more equal comparison between the
experimental and control group.

In an evaluation of conflict resolution programs implemented in nine secondary schools in Toronto, Ontario, Brown, Soudack, Edwards, Kearns, and Harris (1995) measured the frequency of conflict reported by students, conflict mediators, and teachers. Students in Grades 9 through 12 were randomly selected for participation. The study is divided into two parts: year one and year two. Students, student conflict mediators, and teachers were administered a questionnaire for the year 1 study (Spring 1993), and in year 2 (May 1994) focus groups were conducted with students trained as peer mediators/conflict resolvers, students who had not been trained, teachers (both trained and untrained in the program), and program facilitators. Personal interviews were conducted with school administrators. In the year 2 study, data was collected through case studies of conflict resolution programs at two schools (one school selected had been involved in the previous Spring 1993 study) and by interviews with program facilitators.

The study is limited in that a pre-test/post-test with control group design was not used. This would have provided an important comparison in order to help determine the effectiveness of the program.

A total of 17% of students, 20% of conflict mediators, and 25% of teachers reported that they had observed physical fights without weapons occurring at school between January 1993 and June 1993 (Brown et al. 1995). The term physical fights was not defined in the questionnaire, therefore, the
seriousness of the fights or the severity of injury resulting from the fights is not clear (Brown et al.). A total of 9% of students, 14% of conflict mediators, and 15% of teachers reported that they had observed physical fights with weapons (Brown et al.). There were no examples or definitions provided in the questionnaire for weapons: it is unclear whether a sharpened pencil or a stick would be considered a weapon.

A total of 57% of students reported that “most staff and students solve their conflicts peaceably at this school” (59% of mediators and 79% of teachers reported this) (Brown et al., 1995, p. 8). The term conflict was not defined in the questionnaire, therefore, it is unclear whether a conflict includes both physical fighting and verbal disputes. Brown et al. admit that students and teachers in the focus group vary in their definition of conflict. Brown et al. should have solicited information regarding staff and students separately instead of including both groups in the same survey question.

Brown et al. (1995) found that 36% of students, 37% of mediators, and 33% of teachers indicated that “Most students fight first and think second” (p. 8). The term fight was not defined in either the research report or questionnaire, therefore, it is unclear whether the term fight is limited to physical attacks or if it also includes verbal assaults. The researchers reported that 47% of students, 49% of mediators, and 41% of teachers indicated that “Most students know how to keep a fight from becoming a major conflict” (1995, p. 8). Does a major conflict include verbal disputes that involve screaming, name calling, and use of
profanity? Or, is it limited to a physical assault?

Students were asked how many conflicts they had been involved in over a six-month period, between January 1993 and June 1993. A total of 57% of students reported no conflicts, 32% reported 1-3 conflicts, and 11% reported four or more conflicts. The researchers should have solicited information separately concerning students' self reported involvement in physical and verbal types of conflict.

The study would have been strengthened had there been a control group. This would have been helpful to determine the effects of the program on rates of school violence, if any, both before and after program implementation.

Croft (1995) evaluated the implementation of a peer mediation program in an elementary (K-8) school in Regina, Saskatchewan. The researcher used questionnaires to solicit information from mediators and parents of mediators and interviewed a sample of students prior to and following implementation of the program.

Croft (1995) claims that there was a decrease in bullying, vandalism, and fighting at the school. She defines bullying as "when someone intentionally inflicts, or attempts, to inflict, injury or discomfort upon another and there exists a certain imbalance in the strength relations . . . . (1995, p. 14). Although the researcher does not provide a detailed definition of fighting, she notes that fighting refers to physical fighting. These terms, however, are not defined or specified in the study questionnaires (Croft). Therefore, parent and mediator
subjects may not have clearly understood the questions concerning these two types of behaviors. This weakened the study. Furthermore, Croft does not provide a standard of severity for the term physical fighting in either the research report or questionnaires. An indicator of the seriousness of physical fight events would have been helpful to the reader. Were most of the physical fights minor in nature, resulting in minor bruises and scratches, or did the majority of students sustain more serious injuries?

Croft (1995) claims that “the elimination of physical fights on the playground and intimidation in the washrooms, and a reduction in washroom vandalism suggest that an intervention had taken place” (p. 100). Croft does not define the term intimidation: It is not clear whether this term includes physical threats or is limited to one student attempting to make another student feel uncomfortable. The pretest, that is, before program implementation, of students (Grades K-4) interviewed totals 42, yet, the posttest sample of students interviewed (Grades 1-5) is only 15 students. A larger sample size would have provided a better comparison and more representative sample of students. Only 3 students from each classroom were interviewed: More students should have been chosen to better represent the student population. Croft notes that a total of 670 students used the playground in December, 1994, the time when the second interview took place after program implementation. The posttest sample is not a fair representation of students in Grades 1-5: The small sample size likely excluded many students who had been personally victimized or witnessed
acts of assault. Croft's claim that "the elimination of physical fights on the playground . . . suggest that an intervention has taken place" is based on reports of a small sample size (1995, p. 100). Croft admits that although the mediation program may have helped to decrease the "nature and frequency of behavior problems throughout the school," this is not supported or refuted from the data (p. 89). She recognizes that her sample size is small and that a control group was lacking.

The "School Climate and Conflict Resolution survey," conducted in 1994, consisted of questionnaires for Grade 4-8 students and teachers (Yau, Arbus, Ziegler, & Soudack, 1995). A total of 847 students and 134 teachers from 10 elementary schools participated in the survey. All 10 schools had conflict resolution programs (one school defined its program as an anti-bullying project). At least seven of the schools had implemented conflict resolution programs at least 2 years prior to the survey and developed schoolyard mediator programs. Of the student participants, nearly a third (31%) had been trained as student "peacemakers," "problem-solvers," or "conflict managers" (Yau et al., 1995, p. 2).

A total of 46% of students reported that "Many kids at this school fight first and think second" always/often and 40% of students reported that "Most kids would rather fight than make peace" always/often (Yau et al., 1995, pp. 15, 18). One limitation of these questions is that students may differ in their perception of what constitutes always or often. The researchers should have designed this question for subjects to indicate the frequency per week or month (e.g., once per
week, three times per week, twice per month). Yau et al. did not define the term fight: Is fight limited to physical attacks or does it include verbal assault?

A total of 19% of teachers reportedly agreed that "Many students at this school fight first and think second" sometimes and 6% of teachers agreed that "Most children would rather fight than make peace" sometimes (Yau et al., 1995, pp. 25, 28). Again, the lack of definition of terms limits the study.

Students trained in being peacemakers and disputants and students who had peacemakers/problem-solvers/conflict managers try to help them resolve a conflict were asked questions related to fighting (Yau et al., 1995). A total of 58% of peacemakers and 64% of disputants reported that "when peacemakers/problem-solvers/conflict managers try to help solve a conflict, it doesn't stay fixed; the same kids may start fighting again pretty soon" (Yau et al., p. 10). The term fighting was not defined, therefore, it is unknown whether these fights involve both physical and verbal altercations. In any case, these reported high rates indicate that the program's long-term effectiveness of resolving disputes between students is questionable.

Fulton (1996) describes and provides a review of a peer mediation program implemented by a Montreal Area Anglophone School Board (MAASB). The researcher used a qualitative research methodology. She interviewed two senior officials at the MAASB and conducted observations and formal and informal interviews at two school locations (one French high school and one English high school). The first location involved an interview with a senior staff
member and the second location involved interviews with program facilitators.

Fulton (1996) claims that the MAASB peer mediation program "is achieving its objectives of reduced incidence of violence and reduced disciplinary referrals" (p. 79). Fulton's definition of violence is too broad: "School violence and conflict has been described and can include such things as name-calling and rumours, to threats with guns, knives, and machetes" (p. 1). It is not clear what types of violent incidents were reduced after program implementation (e.g., physical versus verbal; serious versus minor). The researcher does not provide sufficient empirical evidence to support her claim of reduced violence. These findings are based on observations and interviews, all of which she did not document in her research report. Fulton (1996) contradicts her claim by stating that determining a rate of decrease in violence is difficult because, in this study, the decrease is "directly measured" by the number of incidence of violence and conflict that are not referred to administration (p. 101). She adds that that a decrease in the number of referrals does not mean there is a decrease in incidents. Fulton concludes that the program is limited for serious violence, such as incidents involving weapons, because mediators do not have the necessary skills.
Fulton (1996) admits that a lack of direct contact with students who had experienced conflict and participated in the program is a limitation of her study. The absence of data regarding student's perceptions of the program and their self-reported behavior, both before and after participation in the program, weakened the study.

Stevahn et al. (1996) examined the effectiveness of a conflict resolution program in two 9th-grade English classes in a suburban high school in Ontario in the Fall of 1994. The researchers used a pretest-posttest control-group experimental design. A total of 42 students were randomly assigned to each group. This strengthened the study as random assignment is ideal (Blumstein et al., 1988b, Campbell & Stanley, 1963; Farrington, 1983, 1992; Gottfredson & Hirschi, 1987; Lam, 1989; Logan, 1972). The researchers did not allow a delay for follow-up: Post measures were administered during the same week of the last instruction session. Therefore, it is unknown whether the curriculum had any long-term benefit for subjects. The experimental group students studied a literature unit which had conflict resolution training integrated into it. The control group students studied the identical literature, but without the conflict resolution component.

The component of the study, relevant to this thesis, is the written scenario of taking turns at a computer. Student respondents were asked to write how they would resolve the conflict. Physical aggression was reported as the response of 24% of both the premeasure experimental and premeasure control
group and 14% of the postmeasure experimental group and 26% of the postmeasure control group (Stevahn et al., 1996). Verbal threats was reported by 14% of the premeasure experimental group and 0% of the premeasure control group and 0% of both the postmeasure experimental group and post measure control group (Stevahn et al., 1996).

The results suggest that the program changed the attitudes of some students, decreasing the number of physical aggression and verbal threat responses for the post experimental group compared to the preexperimental group. The study is limited, however, by a lack of definition of the terms physical aggression and verbal threat: The researchers did not describe the types of physical aggression or verbal threats that students wrote in the responses. Were respondents referring to slightly pushing other students or more severe attacks? What is a verbal threat? Does verbal threat mean a threat of physical harm or could it include a threat by one student to spread a rumour about another student?

Stevahn et al. (1996) claim that the conflict resolution training program was successful in teaching students to resolve conflicts constructively, that is, conflicts similar to those they are confronted with in their own lives. The researcher's claim is not supported by sufficient empirical evidence: The evidence is based on student responses to a hypothetical conflict over sharing a computer. Students should have been given written scenarios that are more personal and anger provoking in nature such as the scenario Stevahn et al.
(1997) use in their other study which involves a scenario of "a classmate's betrayal of confidence" (p. 310). Furthermore, Stevahn et al. (1996) do not acknowledge that the written scenario situations do not equate real life situations, therefore, the correlation between a student's learning of conflict resolution skills and assertive response, using the learned skills, in a real life situation is questionable.

Cochrane and Saroyan (1997) conducted a study to determine the effects of a conflict resolution program using a quasi-experimental pre-post test control group design. They studied Grade 5 classrooms of three French and four English elementary schools, in two urban areas, of a large Canadian city. A total of 37 teachers and 140 students participated in the study (80 students in the experimental group and 60 students in the control group). The researchers used the following methodology: questionnaires to solicit information from all study participants (pre and post program), structured interviews with teachers (pre and post program), and structured observations of students (pre and post program). Interestingly, the researchers selected a control group from separate schools in order to avoid interference as, they note, is recommended by Lam (1989). The control group was not random: the control group schools were matched and selected for similar age, sex, race, socioeconomic status, academic level, and school discipline records (Cochrane & Saroyan). The researchers do not state whether the treatment and control groups were specifically matched. As Lam recommends, treatment and control groups (when not randomly assigned)
should be comparable. The exact time of the posttest is not specified in the study (Cochrane & Saroyan). Did the researchers do, as Logan (1972) recommends, and allow a delayed follow-up?

The study did not focus on how the program affected rates of school violence. Cochrane and Saroyan (1997) state that both students and teachers indicated a very high level of concern regarding the occurrence of fights, arguments, and conflict: students in the pre-test program group indicated a rate of 93% compared to 91% for the pre-test control group; students in the post-test control group indicated a rate of 92% compared to 85% in the post-test program group. A total of 88% of teachers in the pre-test program group and 89% in the post-test program group rated conflict as being a problem for students in their schools. Based on these results, the program did not appear to affect levels of concern among both students and teachers regarding conflict in their schools. The term fights and conflict were not defined in the questionnaire or the research report, therefore, the level of severity of fights perceived to be the most prevalent is unclear (Cochrane, 1997; Cochrane & Saroyan, 1997). Are fights limited to physical attacks or do they also include verbal abuse? Is the majority of fighting incidents minor in nature resulting in either no injuries or minor injuries such as bruises and scratches? The researchers' lack of definition weakened the study.

Cochrane and Saroyan (1997) state that, according to student reports, "youth violence was a problem in their schools or neighborhoods" (p. 9). Both of these variables were included in the all too broad questionnaire item which reads
“is there a problem with youth violence in your school or neighborhood?” (Cochrane, 1997, p. Q-S-1). The findings of pre-test and post-test control and experimental group student ratings of youth violence in school/neighborhood are vague and do not inform the reader as to the rating of school violence specifically. Considering that the study discusses school violence prevention programs at length it is surprising that the researchers did not measure these two variables separately in the questionnaire. One of the student interview questions asked students to describe violence and fighting in their school, however, these results were not included in the research report (Cochrane, 1997; Cochrane & Saroyan, 1997). Students’ reported perceptions of youth violence in the school and neighborhood are as follows: the pre-test program group indicated a rate of 66% compared to 71% for the pre-test control group and students in the post-test program group indicated a rate of 72% compared to 75% in the post-test control group (Cochrane & Saroyan). Cochrane and Saroyan do not provide a definition of youth violence, indicating what types of incidents would constitute violence, in either the research report or questionnaire (Cochrane, 1997; Cochrane & Saroyan, 1997). Is one student slightly pushing another student in an argument considered youth violence?

Kenway (1997) studied the development of a conflict manager program implemented at a British Columbia elementary school (Vancouver Island). Kenway, the researcher, is also a teacher at the school and the conflict manager program developer, sponsor, and coordinator.
The researcher surveyed Grade 4 students (a total of three classes) who were interested in becoming "student Ambassadors" (defined as students trained to help manage conflicts between students) and Grade 5 student Ambassadors in the Spring of 1995 (Kenway, 1997, p. 79). She also surveyed five playground supervisors and conducted a focus group comprised of ten ambassadors, the school counselor, a playground supervisor, a special needs teacher, a parent, and Kenway herself.

Kenway (1997) claims that it was "clear that the program achieved both a reduction in physical violence, and a change in attitudes towards conflict and its peaceful resolution" (abstract). The researcher does not provide sufficient evidence to support her claim. Grade 5 Ambassadors subjects were asked to rate the following questions on a six part scale which ranged from "Strongly Agree" to "Don’t Know, No Opinion:" "Conflict resolution skills help to reduce physical violence on the playground" and "Conflict resolution skills help to reduce verbal violence on the playground" (p. 93). The above questionnaire items are not clear: Is Kenway attempting to solicit information concerning student's opinions of the efficacy of conflict resolution skills in a general sense (applicable to playgrounds outside their school) or the conflict resolution program at that particular school? A total of 3 playground supervisors indicated in the survey that there has been "fewer conflicts due to the program and presence of Ambassadors" and 2 playground supervisors indicated that there was no
noticeable decrease in incidents (p. 99). Kenway does not report which types of conflict (physical versus verbal). The questionnaire item is worded as follows: "Have there been any changes in the number of physical or verbal conflicts on the playground?" (p. 99). Kenway should have solicited information regarding physical and verbal abuse separately. Her survey of Grade 4 "potential Ambassador" students was not useful in determining levels of physical and verbal abuse incidents at school because she did not specify school, as a location, in the survey questionnaire (Kenway). The fact that she did not survey students from the general student population (all grades), regarding incidents of physical assault and verbal abuse, weakens the study. This would have provided vital information and a good comparison between the student Ambassadors and other students.

Kenway's (1997) claim that the program clearly reduced physical violence is contradicted by her statement that "In the fall a few fights had been reported to the program supervisor. No fights had been reported in the two months proceeding the survey" (based on responses from focus group participants (1997, p. 97). Kenway describes the school, prior to implementation of the program, as being "a caring place where students and staff showed each other a high degree of respect" (p. 24). How can the program receive credit for reducing a problem that apparently did not exist (or existed only at a minimum level)?
Kenway (1997) did not provide definitions of either physical violence or verbal violence in the questionnaire, therefore, subjects were not clear as to the meaning. Does physical violence include minor physical altercations such as a slight push or slight kick, or is it reserved for more serious forms of assault? Is name-calling considered verbal violence? Is a student swearing out loud (not directly at anybody) considered verbal violence? All of these questions were not answered in either Kenway's report or the questionnaire (Kenway).

The student Ambassador sample is small, comprised of only 30 students, which is not representative of the three elementary schools included in the study. Furthermore, it is possible that the subjects were biased in their responses, because they were directly involved in the program, which likely resulted in their positive ratings of conflict resolution skills. For example, 27 of 30 reported that conflict resolution skills were useful in helping to reduce physical violence on the playground and 24 of 30 reported the skills were useful in dealing with verbal violence on the playground.

Interestingly, Kenway (1997) admits that “student Ambassadors began to complain of boredom . . . . they cited lack of conflicts as a reason” (p. 79). She did not specify the number of student Ambassadors who reported this. It is questionable how the program can be given credit for reducing physical or verbal violence considering the reported infrequent occurrence of conflicts before program implementation. Therefore, the program appears to have had no effect on rates of violent conflict. Kenway did not acknowledge this possibility. Kenway
(1997) did not specify how many student Ambassadors reported feeling bored with a lack of conflicts. She did not report a rate for those participants in the focus group who indicated that there was an increase in reports of verbal abuse (name calling) and teasing.

The researcher should have surveyed the general student population in order to solicit information regarding the effectiveness of the conflict resolution program in reducing school violence. A measurement of levels of physical violence reported by these students (if any), both before and after program implementation, would have been helpful to determine the efficacy of the program.

Stevahn et al. (1997) examined the effectiveness of a conflict resolution program in two 9th grade English classes in a suburban high school in Ontario. The study was conducted in the spring of 1994. The researchers used a pre-post/experimental-control group design. A total of 40 students were randomly assigned to a experimental and control group (20 in each group). This random assignment strengthened the study. Students in the experimental group were given required literature curriculum which had conflict resolution training integrated into it. The identical required literature was given to the control group without the integration of conflict resolution training. The study entailed a delayed postmeasure, administered 7 months after the original posttest (a retention test). This delayed follow-up measure is exemplary for studies that only provide a postmeasure immediately following a treatment intervention.
One component of the study (relevant to this thesis) is the two written scenario measures describing a conflict and asking student respondents how they would resolve each conflict. The first situation involved taking turns at the computer and the second situation involved a "classmate's betrayal of confidence" (Stevahn et al., 1997, p. 310). Students were asked to describe how they would resolve each conflict. For the first scenario, physical aggression was reported as the response of 15% of both the premeasure experimental and premeasure control group and 0% of both the postmeasure experimental and postmeasure control group. Verbal threats was reported by 5% of both the premeasure experimental and premeasure control group, 0% of the postmeasure experimental group, and 20% of the postmeasure control group. For the second scenario, physical aggression was reported as the response of 20% of the premeasure experimental group, 5% of the premeasure control group, 0% of the postmeasure experimental group, and 15% of the postmeasure control group. Verbal threats was reported by 65% of the premeasure experimental group, 70% of the premeasure control group, 10% of the postmeasure experimental group, and 65% of the postmeasure control group.

The results suggest that the program changed the attitudes of some students due to the decrease in number of physical aggression and verbal threat responses for the postmeasure experimental group compared to the premeasure experimental group. However, physical aggression was reported by 0% of both the post measure experimental and post measure control group, for the first
scenario, which indicates that perhaps the literature curriculum did not have an
affect. The study is limited by a lack of definition of the terms physical
aggression and verbal threat. The researchers did not describe the types of
physical aggression or verbal threats that students wrote in the responses. Were
the students referring to slightly pushing other students or more severe attacks?
What is a verbal threat? The researchers list “forcing” as an example of threats
but do not expand on this (Stevahn et al., 1997, p. 310). Does verbal threat
mean a threat of physical harm or does it also include a threat by one student to
spread rumours about another student?

Stevahn et al. (1997) claim that several students successfully used their
learned negotiation skills in real life situations. They state:

Several students also transferred their learning to conflicts outside
the classroom. One student, for example, successfully negotiated
a night curfew with his mother. Another student reported trying to
negotiate with a teacher on lunchroom duty for permission to leave
the cafeteria to eat outside. (p. 313)

The researchers do not provide sufficient evidence to support their claim. These
few accounts are not enough to generalize about the efficacy of the program.

Stevahn et al. (1997) claim:

Learning to negotiate is not enough. Students must also be able to
apply their knowledge to their own lives. The pre- and posttraining
comparisons between experimental and control group participants’
responses to the written conflict scenario measures indicate that
training had a significant effect on students’ ability to apply the
negotiation procedure to managing conflicts. (p. 312)

Stevahn et al. (1997) do not acknowledge that the written scenarios used in a
study do not equate real life scenarios where tempers are flaring. Recently
learned conflict resolution skills could be dismissed by a very upset student who, in turn, responds aggressively to conflict.

Summary

The Canadian conflict resolution program evaluation studies, reviewed in this thesis, lack clear definitions of terms in the research report and/or questionnaires administered to subjects (Brown et al., 1995; Cochrane & Saroyan, 1997; Croft, 1996; Kenway, 1997; Pendharkar, 1994; Stevahn et al., 1996, 1997; Yau et al., 1995). Future research should include clear definitions of the conceptual elements of the research, both in the questionnaire administered to subjects and the research report. For example, if subjects are asked about incidents of fighting on school property, the term fighting should be defined in the questionnaire.

While many authors claim the program to be effective, in terms of reducing school violence (physical/verbal conflict incidents), the evidence is slim. One program was counterproductive regarding male involvement in physical and verbal fights (Pendharkar, 1994). Two researchers, who claimed the program had an effect of reducing physical violence, made other statements that contradicted this initial claim (Fulton, 1996; Kenway, 1997). In reviewing the evaluation studies, it is important to keep in mind Pendharkar's (1994) warning that student attitudes about conflict may not reflect their actual behavior. While a student may indicate on the questionnaire that talking things out is better than
fighting, this does not necessarily predict actual behavior. It is possible that
student participants may react differently to conflict, in real life situations,
contrary to their attitudes indicated in their survey responses.

**Threats to Validity**

It is important to remember Lam's (1989) warning that "it is extremely
difficult to determine whether the desired impacts are due to the mediation
program or to other factors (e.g., student maturation) or some other event that
took place during the school year" (p. 39). Maturation, such as growing older, is
a possible threat to internal validity (Cooke & Stanley, 1963). There is always
the risk of rival plausible explanations, that is, "alternative factors that might also
have accounted for the results you observe" (Palys, 1997, p. 426). With
research, the exclusion of rival causal factors, ("variables that could conceivably
explain away the original relationships the researcher had claimed"), is subject to
endless debate (Hagan, 1997, p. 67). Quality research designs aim to minimize
and control for rival plausible explanations, such as the use of a control group
(Palys). It is always difficult to determine, with absolute certainty, that conflict
resolution programs result in reduced rates of violent incidents at school, as
opposed to maturation or other outside influences. There is always the
possibility of a spurious relationship, defined by Hagan as "a false relationship;
that is, one that is not caused by the believed variables, but that can be
explained by other variables" (1997, p. 67).
Future Research

Baseline Data

Measures of changes in student behavior, not mere changes in student attitudes or knowledge, is important in order to determine program effectiveness. Casel (2003) includes this as a criteria for well-designed studies in program evaluation. This information could be acquired through school records of disciplinary action. A comparison could then be made of the frequency and nature of violent incidents that occurred both before and after program implementation. In other words, this baseline data would help to determine rates of violence both before and after program implementation. School records are objective compared to the self-reporting biases of surveys and interviews. None of the conflict resolution studies, reviewed in this thesis, used schools records as part of their methodology.

Police crime data could be used as a baseline data, in addition to school records, in order to cross reference names of students listed in school records as having been involved in violent incidents. However, if studying a particular school(s), police data would not work as a baseline data for surveys, alone, due to the respondent’s option of anonymity (in an effort to encourage truthful responses). If a respondent’s name is unknown, then obviously there cannot be a search for crime data records for that individual.
Experimental/Quasi-Experimental Design

Evaluation studies of conflict resolution programs that solicit information concerning the rates of violent incidents, both before and after program implementation, is recommended for future research of conflict resolution programs in Canada. The use of a random control group, in addition to, pretesting and posttesting both the experimental and control groups is ideal in order to determine whether the program helped to decrease incidents of violence. Of the studies reviewed in this thesis, few studies used both a control group or a pretest/posttest design (Cochrane & Sarayon, 1997; Pendharker, 1994, Stevahn et al., 1996, 1997). Pre-test and post-test assessment and control (comparison) group are important criteria for well-designed studies in program evaluation (Casel, 2003; Lam 1989). Ideally, subjects should be randomly assigned to treatment and control groups (Logan, 1972). With a random control group, the “before” measure is not crucial, since only change for the treatment group, which surpasses the “after” measure for the control group can be attributed to the experimental program under evaluation (Logan, 1972, p. 379). To quote Gottfredson and Hirschi: “The ideal design in scientific research is the true experiment, where subjects are randomly assigned to treatment conditions and the effects of the various treatments are then compared” (1987, p. 583). Similarly, other scholars assert that random assignment is ideal (Blumstein et al., 1988b; Campell & Stanley, 1963; Farrington, 1983, 1992; Lam, 1989; Logan, 1972). However, if this is not possible, the researcher should
establish comparable treatment and control groups, matched on demographic characteristics such as sex, race, age, academic records, disciplinary records, etc. (Lam, 1989). A “before” measure for both groups is necessary for studies that use matched or other non-random designs (Logan). If more than one school is being studied, the context of these schools should be similar, such as location of school (inner city versus suburban), in addition to, race, ethnicity, and gender. For example, in the study by Cochrane and Saroyan (1997), control schools were matched and selected based on socioeconomic, multicultural, and academic characteristics. Should the control group be from another school that does not have a conflict resolution program? This is not necessary. However, some researchers have argued that using a different school for the control group is ideal in order to avoid contamination (where control group is influenced by the treatment group when witnessing conflicts being mediated on the playground, cafeteria, etc.) (Greenawald & Johnson, 1987; Lam, 1989). The problem with this assertion is that control group subjects could possibly still be exposed to outside influences that demonstrate conflict resolution skills. Exposure could occur from a television program or by interaction with people that model conflict resolution skills.
Longitudinal Research

Longitudinal-experimental research of these programs is recommended for future research in order to determine the long-term efficacy of a conflict resolution program in reducing incidents of school violence. Longitudinal-experimental studies involve randomized experiments, where subjects are randomly assigned to treatment and control groups, and involved data collection of the same people at two or more points in time (Blumstein, Cohen, & Farrington, 1988a; Farrington, 1992). When randomization is not possible, the next choice would be quasi-experiments (non-randomly selected groups) (Blumstein et al., 1988b; Farrington, Ohlin, & Wilson, 1986). As Logan states, “there should be some follow-up or delayed measurement . . . for both the treatment and control groups. This is especially important with respect to criminal behavior, which cannot be measured on-the-spot since it only manifests itself over some period of time” (1972, p. 379). A longitudinal-experimental study, unlike a pretest-posttest study, provides a method to compare short-term and long-term effects, that is, to “distinguish many different outcomes, such as an immediate lasting effect of an intervention, an immediate but short-lived effect, no effect on a pre-existing trend . . . . “ (Farrington, 1992, p. 363).

I did not come across any longitudinal Canadian studies related to conflict resolution and peer mediation programs. The most ideal longitudinal research design would be a survey of students, on a yearly basis, until they graduate. In longitudinal research, people are followed for at least 2 or 3 years (Farrington,
1992). In a study of an American conflict resolution program, the Resolving Conflict Creatively Program, a “short-term longitudinal design with repeated measures” was used: data was collected in waves of four: the fall and spring of two consecutive school years (Aber, Brown, & Jones, 2003, p. 330). This method is superior to cross-sectional studies that gather data at only one point in time.

Randomized experimentation is most recommended in longitudinal-experimental research. Randomized experimentation is the ideal design in scientific research (Campbell & Stanley, 1963; Gottfredson & Hirschi, 1987; Lam, 1989; Logan, 1972). As Blumstein et al. state, “Randomized experimentation represents the best method of testing causal hypotheses” (1988b, p. 69). If random assignment is not possible, the researcher should establish comparable treatment and control groups.

A longitudinal study may not, however, be feasible for multiple years in the future (e.g., due to financial reasons, practicality, or time constraints). Longitudinal research is limited in terms of attrition, that is, changes in student composition (e.g., students transferring to other schools, dropping out, death, etc.). Furthermore, the control group students may eventually receive the treatment, conflict resolution training, at school. School administrators may not be willing for control group students to be excluded from training. This problem may be avoided if the control group is from a different school that does not offer conflict resolution training. If the researcher is using school records in the study,
a change in record-keeping practices, such as an increase or decrease in the number of simple/minor assault incidents recorded, will affect the study (see Cook & Campbell, 1979, for further discussion of record-keeping and validity). This could occur if the school principal (presumably the one who records such incidents) quits his/her position and is replaced by another individual. Blumstein et al. (1988b), advocates of longitudinal research, point out that the main threats to internal validity, in longitudinal surveys, are those factors listed by Cook and Campbell (1979): maturation, regression, history, selection, instrumentation, mortality, and testing.

In an effort to secure truthful responses by administering anonymous questionnaires, it would not be possible to ask respondents, of a longitudinal study, to reveal their names, therefore, a numbering system could be used in order to track respondents: number each questionnaire and request that respondents record this number for future studies. Follow-up studies would then be based on this system. Due to the sensitive nature of the questionnaire items, for example, questions related to whether the respondent has physically assaulted other student(s), anonymity is more likely to encourage truthful answers and/or eliminate the respondent’s fear of detection for crimes that may have been unreported. If respondents are asked to provide their names, then admitting to criminal acts of school violence, previously unreported, could result in disciplinary action from the school principal or legal liability.
Hidden Video Cameras

Hidden video cameras are recommended for future research, provided that students are unaware of the cameras, in order to determine rates of violent incidents both before and after the conflict resolution program. Hidden, as opposed to visual, is emphasized in order to avoid the “Hawthorne effect” (see Babbie, 1999; Champion, 1993; Hagan, 1997 for discussion of this phenomenon). Cameras could be placed in the hallways of schools, cafeteria, and outdoors on the school grounds. The recordings would be both high in validity and reliability: the tapes could be played again and again. This research method may not be practical, however, in terms of the researcher gaining ethics approval from the superintendent of the school district and principal of the school who may have liability concerns. The hidden video method is limited, however, in that an absence of audio recordings to hear dialogue (as would be the case with hidden cameras) results in a risk of misinterpretation of events; for example, determining horse-play or role play (subjects pretending to be movie action heroes) from real physical fights.

In conclusion, the slim evidence regarding the effectiveness of conflict resolution programs reducing school violence in Canada highlights the need for alternative school violence prevention programs for Canadian schools experiencing school violence problems.
This chapter will discuss the use of metal detectors and video surveillance cameras in schools, with a particular focus on metal detectors. The effectiveness of metal detector programs in schools, the number of schools with metal detectors in the United States, criticisms/limitations of metal detectors, promising aspects of metal detectors, video surveillance (advantages and disadvantages), and, lastly, general cost issues.

An alternative to conflict resolution programs, for schools experiencing school violence, is to invest in crime prevention strategies such as metal detectors and video surveillance cameras. Just as we currently monitor public streets, trains, buses, airports, and shopping malls, we must monitor our schools to protect students from violence and deter assaults and criminal acts from taking place. Such security assumes that potential offenders can be deterred through environmental design: “that offenders made rudimentary judgments about the costs and benefits of committing crime, and that they can be deterred by environmental changes to reduce criminal opportunities, are ideas as the heart of rational choice theory and situational crime prevention” (Clarke, Newman, & Shoham, 1997, p. vii).
Many schools in the United States use metal detectors to reduce violence by preventing entry of firearms into school buildings (Catalano, Loeber, & McKinney, 1999; Vera Institute of Justice, 1999). Both metal detectors and cameras are not frequently used in Canadian schools (Walker, 1994). There has not been a more recent national study on the prevalence of metal detectors and cameras in Canadian schools since Walker's study. Metal detector programs involve security personnel or school staff searching some or all students for metal weapons, such as guns or knives, with metal detectors (Catalano, Arthur, Hawkins, Berglund, & Olson, 1998). Metal detectors in schools can be a portal/walk-through (Green, 1999) such as those found at airport security check points. Hand-held scanners are typically required for use on people who have triggered an alarm walking through the portal (Green). X-ray baggage scanners are also used in schools to scan bookbags and purses (Green) (these are the same devices found in airports).

Critics of metal detectors and security cameras argue that such security creates an uncomfortable prison-like school environment (Casella, 2001). Casella (2001) states that "the presence of armed police officers, surveillance cameras, metal detectors, guards, and monitors with walkie-talkies may adequately describe a prison, but it should not be the description of a school" (pp. 28-29). This type of school environment can deter and prevent school violence, therefore, it is difficult to justify not having these types of crime prevention.
Effectiveness of Metal Detector Programs in Schools

Few studies to date have been conducted on the effectiveness of metal detector programs reducing weapon carrying in schools (Trump, 1998). A survey study of New York City public high school students found that students who attended schools with metal detector programs were less likely to have carried a weapon inside the school building compared to students who attended schools without metal detectors (7.8% compared to 13.6%) and were less likely to have carried a weapon going to or from school (7.7% compared to 15.2%) (Ginsberg & Loffredo, 1993). The metal detector program, however, does not appear to have affected the prevalence of students being threatened with physical harm or involved in physical fights (Ginsberg & Loffredo).

The above study is based on self-reported data from 1,399 students from 15 schools (three with and 12 without metal detectors) (Ginsberg & Loffredo, 1993). Schools with the metal detector program were subject to weekly searches by security officers with hand-held metal detectors who scanned randomly selected students as they entered the building (Ginsberg & Loffredo).

A study of school violence in New York's public schools solicited information regarding students', teachers', and principals' perceived effectiveness of safety measures (the University of the State of New York, the State Education Department, the Office of Instruction and Program Development, & the New York Division of Criminal Justice Services, 1994). The study included a stratified random sample of 255 secondary schools (Grades 7-
12) across New York State: 6,676 students, 5,152 teachers, and 162 principals (the University of the State of New York et al., 1994). A total of 41% of students, 69% of teachers, and 100% of principals rated the presence of metal detectors as a highly effective safety and security measure in their schools (the University of the State of New York et al., 1994).

Schools with metal detector programs should use it on a regular basis. One study of 1,802 students in Grades 10 through 12, in the Los Angeles school district, found that the majority of student respondents reported that they had not participated in a metal detector search in the previous month (75% of males and 83% of females) (Chao, Parachini, Hernandez, Cody, & Davis, 1997). Only about 15% of both males and females were searched once or twice in the previous month, and 5% or less of male or female respondents reported being searched either 3 to 9 times or more than 10 times in the previous month (Chao et al., 1997).

The 1999 School Crime Supplement Survey (supplement survey to the National Crime Victimization Survey) found that student reports of victimization at school were similar, regardless of whether the schools had metal detector programs (Addington, Ruddy, Miller, & DeVoe, 2002). It is possible, however, that the schools with metal detectors were high crime schools and that the level of weapon-related violence would have been higher without the program. Furthermore, the success of a metal detector program relies on competent staff conducting weapons inspections (Green, 1999; Trump, 1998, 2000).
Number of Schools with Metal Detectors in the United States

Recent studies indicate that few schools, nationally, across the United States have implemented metal detectors in schools. The following national studies to be discussed indicate this trend.

One study found that, in the United States, more than one in five (19%) of the cities use metal detectors and/or searches at schools regularly (Ardnt, 1994). The study is limited, however, because the rate of metal detector use was not reported separately from that of searches. The researcher did not define the term searches in order to specify if a search included hand-held metal detector searches or simply visual searches (of a student’s locker, for example) (Arndt). One-third of central cities (36%) and the largest cities (34%) reported regular use of metal detectors and searches (Arndt). In both non-metropolitan and rural cities, 20% used metal detectors and searchers, while suburban cities (14%) reported the least amount (Arndt). Seven hundred cities and towns across the United States participated in the survey conducted in August and September 1994. Survey respondents of the study included mayors, police chiefs or other public safety officials, city managers, and other city officials.

The Principal/School Disciplinarian Survey on School Violence, found that only 1% of students pass through metal detectors daily and 4% have random metal detector checks (Heaviside, et al., 1998). The following schools reported having random metal detector checks on students: elementary (1%), middle school (7%), and high school (9%). The following schools reported having
students pass through metal detectors each day: elementary schools (less than 0.5%), middle schools (1%), and high schools (2%) (Heaviside et al.).

Schools who reported having experienced serious violent crimes were more likely to report having metal detectors than those schools with less serious crime or no crime (4% compared with 1% or less) (Heaviside et al., 1998). Similarly, schools reporting serious violent crimes also reported a higher percentage of random metal detector checks on students (15%) compared to schools where no crime was reported (1%) or schools where only less serious crimes were reported (4%) (Heaviside et al.). Less serious/nonviolent crime was defined as "less serious crimes (physical attack or fight without a weapon, theft or larceny, or vandalism) and no incidents of the more serious [violent] crimes" (Heaviside et al., p. 35). Serious violent crime was defined as "more serious or violent crimes (murder, suicide, rape, or sexual battery, physical attack or fight with a weapon, or robbery)" (Heaviside et al., p. 35).

A national study on high school youth, weapons, and violence indicates that only two percent of schools used metal detectors at entrances and 10% used video monitoring of hallways (Sheley & Wright, 1998). These results are based on a sample of 53 administrators from 53 high schools across the United States (Sheley & Wright).

The most recent national study of the number of school metal detectors in the United States indicates the following percentages of schools and districts who reported use of metal detectors: 3% of elementary schools, 10% of
middle/junior high schools, and 10% of senior high schools (the researchers did not specify the type of metal detector searches such as random versus daily) (Small, Jones, Everett, Barrios, Crossett, Dahlberg, Albuquerque, Sleet, Green, & Schmidt, 2001). The following school districts reported having metal detector policies: 1% of elementary school districts, 5% of middle/junior high school districts, and 7% of senior high school districts (Small et al.). These findings are based on a nationally representative sample of public school districts and public and private schools in the United States (Kolbe, Kann, & Brener, 2001). These rates do not indicate a wide usage of metal detectors in American schools.

Kopka (1997) suggests that approximately one-fourth of large urban school districts in the United States use metal detectors to deter weapon-carrying in schools, however, she does not cite her source of information.

A study of school safety in America’s largest cities found that all secondary schools in Los Angeles use metal detectors, in addition to burglar and intrusion alarms, window grilles, and security doors (Vera Institute of Justice, 1999). The district requires that all school gates and exterior doors, except for the main entrance, be locked when school is in session (Vera Institute of Justice). New York City schools have the fourth largest weapon scanning operation in the United States: 70 schools have metal detectors or scanners (Vera Institute of Justice). However, there are many schools in New York without such security as the study was based on 669 elementary, 189 middle, and 201 high schools (Vera Institute of Justice). There are more requests for scanning
systems from principals than the New York Division of School Safety can accommodate (Vera Institute of Justice). The Division of School Safety fulfills requests based on the number of incidents occurring in the school (Vera Institute of Justice). In the school district of Philadelphia, 19 of 41 high schools are equipped with walk-through metal detectors (Vera Institute of Justice).

**Critics of Metal Detectors/Limitations of Metal Detectors**

Metal detector programs are not a final solution for school violence or preventing weapons in schools, but one prevention strategy. Students smuggle weapons by circumventing metal detectors (Trump, 1998). Students have been known to make knives in school shop classes (Walker, 1994). For students intent upon obtaining a weapon, a school contains various objects which can be used as a weapon. Metal detectors may not prevent all weapon-related violence from occurring at schools, particularly if a student is very determined to commit an act of school violence. In the Jonesboro, Arkansas shooting, for example, two students set off a fire alarm and then shot at teachers and students outside the school as the building was being evacuated (McCann, 2001). Some weapons, such as knives and razors, are more difficult to detect; for example, "lipstick containers that are actually bladed weapons, knives disguised as pens, small caliber guns hidden under the soles of shoes, and razor blades hidden inside combs" (Trump, 2000, p. 39). It is possible that such weapons could be smuggled into schools with metal detectors, especially if an untrained educator
or school safety official is conducting the weapons inspection (Trump, 2000).

This limitation is a reality which weapons inspectors need to be aware of and cautious in their practice. Metal detector programs remain invaluable because of their ability to detect weapons and be both a visual and psychological deterrent.

Green (1999) warns:

Metal detectors work very poorly if the user is not aware of their limitations before beginning a weapon detection program and is not prepared for the amount of trained and motivated manpower required to operate their devices successfully. . . . A metal detector is only as good as the operator overseeing its use. (Chapter 3, p. 1-2)

Critics of metal detectors in schools argue that a student intent on killing another student will find another means to carry out the murder; for example, the student could shoot their target as it walks in or out of the school or outside of the school, but still on school grounds (Ferraraccio, 1999). A student could also use his/her fists to beat their victim to death.

School metal detectors are limited in that school buildings have multiple exits that, due to fire code, must remain unlocked to allow for escape (Kopka, 1997). One solution is to have magnetic locks on the exit doors that secure the door, from the inside as well as the outside, that only unlock in the event of an emergency such as a fire. Proper use of "panic bars" on doors is a safe method for ensuring an emergency escape (Trump, 1998, p. 65; Trump, 2000, p. 5). For example, emergency release mechanisms installed at every door with plastic shields that cover all emergency release buttons and sound an internal alarm
when the cover is removed, manual override switches in the main office that will allow doors to be released manually, and a switch on the wall (encased in glass) in the main reception area that will release all doors throughout the entire building instantly (Wanko, 2001). In the school shooting in a Louisiana high school, the gunman and his attackers reportedly bypassed metal detectors at the main entrance of the high school in New Orleans by going in through the gymnasium ("Handgun found on La. high school shooting victim," 2003). Students have smuggled weapons through windows, either by climbing into the building through windows or by passing weapons through windows (Trump, 1998). One solution, although costly, could be to alarm the windows and install air conditioning for climate control. However, an alarm solution can be problematic and limiting: "Generally, school districts have antiquated, fragmented, and/or nonexistent intrusion detection systems [alarms]. Poor maintenance, irregular inspections, employee abuse of systems, and related factors contribute to their reduced effectiveness" (Trump, 1998, p. 69). Despite some limitations, metal detectors are both a deterrent, for students considering weapon carrying in schools, and a method of weapon control (Ginsberg & Loffredo, 1993).
The costs of metal detector programs are considerable: walk-through metal detectors, hand-held scanners, and X-ray baggage scanners are high in terms of manpower (personnel to operate the equipment) (Children’s Safety Network Adolescent Violence Prevention Resource Center, 1995; Green, 1999). X-ray baggage scanner equipment is especially expensive, costing about $30,000 US Dollars (Green). Some schools use fellow administrators, teachers, and other employees to supplement the security personnel operating the equipment each school day morning (however, the administration must ensure that all receive proper training) (Green). Some schools that cannot afford to have personnel for the other 7 hours of the school day have implemented polices that doors are locked one-half hour after school begins in the morning (Green). This policy may be necessary in a school where resources are limited and weapons are a problem (Green).

Some critics of metal detectors are concerned about constitutional issues regarding the use of metal detectors in public schools and whether it violates a student’s right to be free from unreasonable search and seizure: a right guaranteed by the Fourth Amendment to the United States Constitution (Ferraraccio, 1999).

While metal detectors deter weapon-carrying and weapon-related violence in schools, “the anger, fears, jealousy, prejudices, and misunderstandings that result in conflict and violence will not end because weapons are no longer present” (Children’s Safety Network Adolescent Violence
Prevention Resource Center, 1995, p. xiii). Violent conflicts will erupt even in schools with metal detector programs (e.g., physical assaults without a weapon). In a discussion of the limitations of metal detector programs, the Children’s Safety Network states that “although some school districts may be able to report reductions in in-school violence, the number of out-of-school conflicts and violence that begin in school and end elsewhere—perhaps only steps from the school—cannot be determined” (p. xiii).

Promising

In a critique of Ferraraccio (1999), Johnson (2000) cites several legal decisions by U.S. courts that have ruled in favor of the use of metal detectors in schools. Johnson also argues that “determined young killers are rare” and that while metal detectors programs are not a “cure-all” for preventing school violence, “disarming students reduces potential violence” by reducing or preventing “impulsive violence, intimidation, and insecurity that are caused by illegal weapons in the public schools” (p. 201).

Metal detectors are promising in order to help prevent unplanned murders, that is, murder that was neither premeditated nor intended. One extensive study of criminal homicide cases revealed that criminal homicide is largely an unplanned act (Wolfgang, 1958). An absence of weapons in schools may prevent arguments and minor physical fights between students from spiraling out of control; for example, following a verbal confrontation, an enraged
student injures another student with a knife or gun which they would not have used, nor had in their possession at the time of the incident, had the school implemented a metal detector program. Similarly, Sheley, McGee, and Wright (1992) state, "carrying guns (or affiliating with those who do) promotes more consequential outcomes in otherwise 'normal' school-yard disputes" (p. 681).

Furthermore, Sheley and Wright (1995) state:

Whether or not weapon carrying by the students was proactive (related to criminality, for example) or reactive (fear-driven), it can be hypothesized reasonably that the behavior raised the stakes in disputes that otherwise might have been settled nonviolently, leaving all parties at higher risk of injury. (p. 130)

There is no guarantee that an absence of weapons in schools will prevent all homicides or serious injury for students in conflict. It is possible, however, that a determined perpetrator, in the absence of a weapon, may instead beat the victim to death. Wolfgang (1958) states:

It is probably safe to contend that many homicides occur only because there is sufficient motivation or provocation, and that the type of method used to kill is merely an accident of availability; that a gun is used because it is in the offender's possession at the time of incitement, but that if it were not present, he would use a knife to stab, or fists to beat his victim to death. (p. 79)

An absence of weapons in schools may simply prevent some student homicides or serious injuries for cases where the perpetrator was neither willing nor physically able to beat their opponent to death.

The size of the perpetrator in relation to the victim also plays a key role in determining the outcome of a potentially violent conflict. If a perpetrator is smaller in physical size than his/her potential victim, then a lack of weapon in the
hands of the perpetrator, especially a firearm, may mean the difference between
life or death for the potential victim (Wolfgang, 1958). Wolfgang states:

The small physical size of the offender relative to that of his
potential victim, or the offender's physical repugnance to engaging
in direct physical assault by cutting or stabbing his adversary, may
mean that in the absence of a firearm no homicide occurs. (1958,
p. 79).

A gun, therefore, is the "great equalizer" which gives perpetrators an opportunity
to rob or assault people who could have defended themselves with less
dangerous weapons (Cooke, 1991, p. 3).

Various factors determine whether an altercation will turn deadly. An
implementation of metal detector programs in schools can help to eliminate the
availability of weapons at the scene for situations which could have turned
deadly had a weapon been available. While a victim could still be beaten to
death by a perpetrator, even if weapons are not present, a lack of weapons will
at least prevent some homicides where the perpetrator was physically smaller
than the potential victim (Wolfgang, 1958), unwilling to stab a victim (Wolfgang),
or those homicides that were not planned and where the perpetrator was not
intent on killing the victim.

In conclusion, physical assaults are less likely to end fatally if there is no
gun or knife present. A gun or knife is far more lethal than a fist. Less weapons
in schools should reduce the levels of injury and fatality of fights (Hawkins,
Farrington, & Catalano, 1998). While metal detector programs will not prevent
use of weapons outside a school building, it will at least help to prevent it within.
Location of Metal Detectors

Metal detector equipment and personnel are typically located within the front or main student entrance (Green, 1999). Similar to airport security, a walk through system design should be used in addition to hand-held metal detectors and X-ray baggage scanners.

All other entrances/exits to the school should remain locked at all times, except in the event of a fire in which case a magnetic lock disengages to release the door. All windows in the schools should be both barred and securely locked at all times. Schools should consider installing air conditioning systems, instead of opening windows, for climate control.

Video Surveillance

Video surveillance (video cameras) monitor student activity with a goal to deter students from violent behavior for fear they are being video recorded. Security cameras, commonly referred to as “target hardening,” “act as a psychological deterrent to potential offenders and as a further obstacle to successful criminal activity” (Lab, 1992, p. 22). Video recordings are also a source of evidence. In serious cases of physical assault/homicide, the video tapings could be used as grounds for expulsion and/or as evidence for criminal court proceedings. Color cameras are, therefore, recommended, as opposed to black-and-white cameras, for identifying perpetrators and providing better descriptions. Video cameras are typically installed in hallways, parking lots,
cafeterias, gymnasiums, main administrative offices, supply rooms and classrooms (Green, 1999). Cameras may not be used in an area where there is a "reasonable expectation of privacy" (e.g., bathrooms, gym locker/changing areas, and private offices) (Green). While critics may argue that the surveillance violates a right to privacy, school buildings are public domains and the safety of students outweighs a right to privacy. Green lists an argument against security initiatives and the counter-argument: "Students’ rights may be infringed upon" versus "Students have a right to a safe and secure school environment" (chapter 1, p. 1). Legal liability can be minimized through the use of warning signs. Green states that "It is important that the presence of video cameras not lead a person to believe he or she will be rescued if attacked" (for example, a sign warning that the video surveillance may or may not be monitored).

Hidden video cameras (located only in places where there is not a reasonable expectation of privacy as listed above), in addition to visible ones, would be ideal. Visible cameras could create a visible deterrent, while hidden cameras could help to prevent crime "displacement," in which case, offenders move from "place to place" (e.g., students moving to areas of a school hallway where there is no visible video camera to commit assault) (Repetto, 1976, p. 169). Crime displacement does not apply for those offences which are unplanned or opportunistic in nature (Repetto).
There are limitations of video surveillance such as cost, cameras being stolen/vandalized, ongoing maintenance, some communities or individuals challenging the legality of cameras, etc. (Green, 1999).

In the United States, the following schools have implemented policies regarding the use of surveillance cameras: 12% of elementary schools, 21% of middle/junior high schools, and 24% of senior high schools (Small et al., 2001). The following school districts have implemented policies related to the use of surveillance cameras: 11% of elementary school districts, 16% of middle/junior high school districts, and 19% of senior high school districts (Small et al., 2001).

Although video surveillance seems to be promising, there is a lack of empirical studies on the effectiveness of video cameras as crime prevention in schools.

**Costs**

Should all schools across Canada and the United States implement metal detectors and surveillance cameras? Although security is ideal, from a crime prevention perspective, it is highly impractical due to cost factors. Many school officials would argue that such security is unnecessary in their school and financially unfeasible. It would be more practical for schools who experience, what they perceive to be, high levels of violence. In New York City, the Division of School Safety fulfills requests for metal detector systems (from principals) based on the number of incidents occurring in the school (Vera Institute of
If it is not financially possible to install systems in all schools, then frequency of incidents will help in the decision making process of whether to implement video surveillance or not.

Conclusion

Metal detectors and video surveillance are crime prevention strategies worth serious consideration. An argument that such security creates a fortress-like school environment (Casella, 2001) does not outweigh the important value of these programs in helping to deter and prevent school violence. Although video surveillance seems to be promising, there is a lack of empirical studies on the effectiveness of video cameras as crime prevention in schools. Few studies have been conducted on the effectiveness of metal detector programs reducing weapon carrying in schools (Trump, 1998): One study showed promising results (Ginsberg & Loffredo, 1993). Another study reports that students reports of victimization were similar, regardless of whether the schools had metal detector programs (Addington et al., 2002), however, it is possible that the schools with metal detectors were high crime schools and that the program may have effectively reduced at least some weapon-related violence.

Recent studies indicate that few schools across the United States (nationally speaking) have implemented metal detectors in schools (Ardnt, 1994; Heavside et al., 1998; Kopka, 1997; Sheley & Wright, 1998; Small et al., 2001;
Vera Institute of Justice, 1999).

Metal detector programs and video surveillance are not a final solution for school violence or preventing weapons in schools. There is a definite need for more empirical studies of the efficacy of such security in reducing school violence.
CHAPTER FIVE

CONCLUSION

School Violence Statistics

The Statistics Canada studies do not indicate that school violence in Canada is a serious problem in terms of frequency of serious violent incidents and severity of injuries reported. In the most recent studies of violent youth crime in schools (Janhevich, 1997; Stevenson et al., 1998), minor assault is the most frequently reported type of violent incident. Similarly, simple assault is the most frequently reported violent behavior among American students; therefore, the most common school violence problem in America (DeVoe et al., 2002, 2003; Heaviside et al., 1998; Kaufman et al., 1998, 1999, 2000, 2001). Incidents of serious violent victimization (as defined by DeVoe, 2003) are low also in American schools (Addington et al., 2002; Chandler et al., 1998; DeVoe et al., 2002, 2003; Heaviside et al., 1998; Kaufman et al., 1998, 1999, 2000, 2001; Nolin et al., 1996) and school-associated violent deaths in the United States is also low (Anderson et al., 2001; Kachur et al., 1996). The chances of a student dying as a result of a school-associated violent incident is less than one in a million (Anderson et al., 2001). Data from the American National Crime Victimization Survey (from 1992 through 2001) indicates that students, aged 12 to 19, were safer at school than away from school, that is, less likely to be victims of nonfatal serious violent crime (rape, sexual assault, robbery, and
aggravated assault) when they were at school than away from school (DeVoe et al., 2002, 2003; Kaufman et al., 1998, 1999, 2000, 2001).

Of all the studies of weapon-related school violence, reviewed in this thesis, the average rates are as follows: students who reported being threatened with a weapon (11%); students admitting to threatening a student with a weapon (6%); students who reported being threatened or injured with a weapon (8%); students who reported being hurt, injured, or assaulted by a weapon (4%); students admitting to hurting or assaulting a student with a weapon (4%); weapon-carrying reported by students (13%); student reported knife carrying (16%); student reported gun carrying (4%); and student reported club carrying (5%). It is clear to conclude that students are regularly threatened in schools with violence, and that we must implement programs to make the school environment safer.

Firearms are reported to be the cause of the majority (three-quarters) of school-associated violent deaths between July 1992 through June 1999 (Anderson et al., 2001; Kachur et al., 1996). Knives or blades were used in 17% of deaths from 1992-1994 (Kachur et al., 1996) and 14% from 1994-1999 (Anderson et al., 2001). Metal detector programs in schools could be justified based on these high rates of weapon involvement in violent deaths.

There should be a priority for security such as metal detectors in high schools. High school students are at a greater risk of violent deaths compared to elementary school students (Anderson et al., 2001; Kachur et al. 1996).
According to two national American studies, public high schools reported serious violent crime more frequently compared to elementary schools in the United States (Heaviside et al., 1998; Miller & Chandler, 2003).

While urban school students are at a higher risk of violent deaths (Anderson et al., 2001; Kachur et al., 1996), according to the National Crime Victimization Survey (1997-2001), students living in urban areas are not always the most vulnerable to nonfatal serious violent crime (DeVoe et al., 2002, 2003; Kaufman et al., 2000). In 1998, 2000, and 2001, no differences were found in violent victimization and serious violent victimization at school between students living in urban, suburban, and rural areas (DeVoe et al., 2002, 2003; Kaufman et al., 2000.). Therefore, ideally, an implementation of metal detectors in urban, suburban, and rural schools is recommended to prevent serious violent crime.

Can metal detectors programs in schools be justified based on these statistics? The answer is that no one can exactly predict where a serious incident of school violence, such as the shocking events of Littleton, Colorado and Jonesboro, Arkansas may occur. Therefore, metal detectors should be installed in as many schools as possible.

**Conflict Resolution and Peer Mediation**

The Canadian conflict resolution program evaluation studies, reviewed in this thesis, for the most part, lack clear definitions of terms in the research report and/or questionnaires administered to subjects (Brown et al., 1995; Cochrane &
Saroyan, 1997; Croft, 1995; Kenway, 1997; Pendharkar, 1994; Stevahn et al., 1996, 1997; Yau et al., 1995). Future research should include clear definitions of the conceptual elements of the research, both in the questionnaire administered to subjects and the research report. For example, if subjects are asked about incidents of fighting on school property, the term fighting should be defined in the questionnaire.

**Efficacy**

While many authors claim the conflict resolution and peer mediation program to be effective, in terms of reducing school violence (physical/verbal conflict incidents), the evidence is thin. One program was counterproductive regarding male involvement in physical and verbal fights (Pendharkar, 1994). Two researchers, who claimed the program had an effect of reducing physical violence, made other statements that contradicted this initial claim (Fulton, 1996; Kenway, 1997). In reviewing the evaluation studies, it is important to keep in mind Pendharkar's (1994) warning that student attitudes about conflict may not reflect their actual behavior. While a student may indicate on the questionnaire that talking things out is better than fighting, this does not necessarily predict actual behavior. It is possible that student participants may react differently to conflict, in real life situations, contrary to their attitudes indicated in survey responses.
It is important to remember that Lam' (s (1989) warning that “it is extremely difficult to determine whether the desired impacts are due to the mediation program or to other factors (such as student maturation) or some other event that took place during the school year” (p. 39). There is always the risk of rival plausible explanations. With research, the exclusion of rival causal factors is subject to endless debate (Hagan, 1997). It is always difficult to determine, with absolute certainty, that conflict resolution programs result in reduced rates of violent incidents at school, as opposed to maturation or other outside influences, for example. There is always the possibility of a spurious relationship.

In conclusion, the slim evidence regarding the effectiveness of conflict resolution programs reducing school violence in Canada highlights the need for alternative school violence prevention programs for Canadian schools experiencing school violence problems.
Future Research

School Violence Statistics

My study suggests and I recommend that Statistics Canada continue with studies on youth violence in schools (e.g., Janhevich, 1997; Stevenson et al., 1998) because the school crime statistics reported in the annual Canadian Crime Statistics reports are not youth-specific: a broad definition of schools is used which is not limited to elementary and high schools, but also includes universities, colleges, etc. (Statistics Canada, 2000b).

It is also important that researchers solicit information separately for minor assault (common/simple assault) and aggravated assault, such as dividing categories of violent incidents into serious nonfatal violent crimes and nonfatal violent crimes (as seen in the National Crime Victimization Survey), in order to report the seriousness of incidents. For example, if both of these terms are conflated into the same category of violent incidents, and, consequently, a high figure is found in a study, readers will not be clear as to the seriousness of assault incidents and may assume that school violence is out of control.

Ideally, future studies should solicit information concerning types of injuries sustained by victims of violence in order to determine the seriousness of incidents. For example, did the victim suffer bruises, scratches, or broken bones? It is unknown how serious in nature the reported injuries were for many studies reviewed in this thesis (e.g., Bachman et al., 1998; Johnston et al., 1997a, 1997b, 2000a, 2000b, 2000c, 2000d, 2000e, 2002, 2003). The
Monitoring the Future Survey did not define injury or provide a standard of severity in the questionnaire, for example, designing the questionnaire for students to indicate types of injuries from scratches and bruises to broken bones, stab wounds, etc. Although an injury with a weapon may seem to be serious in nature, it is possible that the victim may have suffered only minor bruising from a club or a minor scratch from a knife. Data was not collected for each weapon type; therefore, it is not known which type of weapon caused the reported injury.

The methodology used by Kachur et al. (1996), to obtain official cases for a study is a model for other researchers to use, should they have the resources. Kachur et al. found homicide cases for their study by first consulting with study collaborators at the US Department of Education and National School Safety Center, where officials had been tracking school-associated fatalities since 1992 through a newspaper clipping service. In addition, voluntary reports from state and local education officers were used. The researchers then conducted a systematic search of two computerized newspaper and broadcast media databases. Those deaths (or "probable cases") identified by the study collaborators were then confirmed by contacting at least one local press, law enforcement, or school official who was familiar with each case in order to conduct a brief interview to determine if the death met the "case definition" (Kachur et al., 1996, p. 1730). Those cases were then confirmed from official sources: police reports and medical examiner's reports, and structured telephone
interviews with a police officer who investigated the case and the school principal or another school spokesperson (Kachur et al.).

**High Tech Hardware**

There is a lack of research of metal detector programs reducing weapon-carrying in schools and the efficacy of video surveillance in reducing incidents of school violence. A ‘before’ and ‘after’ study of schools with metal detector programs would be useful in order to help determine the effect of these programs, which, ideally, would include a follow-up study for at least 2 or 3 years (Farrington, 1992 notes that longitudinal research include a follow-up of subjects for at least 2 or 3 years). If studying individual schools (as opposed to national studies), it would be useful to use school records, as a source of data for the rate of weapon-carrying/weapon-related violent incidents, in addition to a survey of the student population. A control group of schools without metal detectors and video surveillance programs is recommended. This control group should be matched on demographic characteristics such as location (e.g., inner city), socioeconomic status, race/ethnicity, and sex.
Conflict Resolution & Peer Mediation

Hidden video cameras are recommended for future research, of conflict resolution programs, provided that students are unaware of the cameras. Hidden, as opposed to visual, is emphasized in order to avoid the "Hawthorne effect" (see Babbie, 1999; Champion, 1993; Hagan, 1997 for discussion of this phenomenon). Cameras could be placed in the hallways of schools, cafeteria, and outdoors on the school grounds. The recordings would be both high in validity and reliability: the tapes could be played again and again. This research method may not be practical, however, in terms of the researcher gaining ethics approval from the superintendent of the school district and principal of the school who may have liability concerns. The hidden video method is limited in that an absence of audio recordings to hear dialogue, as would be the case with hidden cameras, results in a risk of misinterpretation of events; for example, determining horse-play or role play (subjects pretending to be movie action heroes) from real physical fights.

Evaluation studies of conflict resolution programs that solicit information concerning the rates of violent incidents, both before and after program implementation, is recommended for future research of conflict resolution programs in Canada. The use of a control group, in addition to, pretesting and posttesting both the experimental and control groups is ideal in order to determine whether the program helped to decrease incidents of violence. Of the studies reviewed in this thesis, few studies used both a control group and a
pretest/posttest design (Cochrane & Sarayon, 1997; Pendlharker, 1994, Stevahn et al., 1996, 1997). Casel (2003) and Lam (1989) emphasize that pre-test and post-test assessment and control (comparison) groups are important criteria for well-designed studies in program evaluation. Ideally, students should be randomly assigned to treatment (i.e., conflict resolution, mediation) and control groups. However, if this is not possible, the researcher should establish comparable treatment and control groups, where students are matched on demographic characteristics such as sex, race, ethnicity, age, academic records, disciplinary records, etc. (Lam, 1989). Furthermore, if more than one school is being studied, the context of these schools should be similar (e.g., location of schools, inner city versus suburban, race, ethnicity, and gender). Should the control group be from another school that does not have a conflict resolution program? This is not necessary. However, some researchers have argued that using a different school for the control group is ideal in order to avoid contamination (e.g., where control group subjects are influenced by the treatment group when witnessing conflicts being mediated on the playground or cafeteria) (Greenawald & Johnson, 1987; Lam, 1989). The problem with this assertion is that control group subjects could possibly still be exposed to outside influences that demonstrate conflict resolution skills. Exposure could occur from a television program or by interaction with people that model conflict resolution skills.
Measures of changes in student behavior (not mere changes in student attitudes or knowledge) is important in order to determine program effectiveness. Case (2003) includes this as a criteria for well-designed studies in program evaluation. This information could be acquired through school records of disciplinary action/incidents. This baseline data would provide a comparison of the frequency and nature of violent incidents both before and after program implementation. School records are objective compared to the self-reporting biases of surveys and interviews. None of the conflict resolution studies, reviewed in this thesis, used schools records as part of their methodology.

Police crime data could be used as a baseline data, in addition to school records, in order to cross reference names of students listed in school records as having been involved in violent incidents. However, if studying a particular school(s), police data would not work as a baseline data for survey responses, alone, due to the respondent's option of anonymity (in an effort to encourage truthful responses). If a respondent's name is unknown, then obviously there cannot be a search for crime data records for that individual.

Longitudinal-experimental research is recommended in order to determine the long-term efficacy of a conflict resolution program in reducing incidents of school violence. Randomized experimentation is the ideal design in scientific research (Blumstein et al., 1988b; Campbell & Stanley, 1963; Farrington, 1983, 1992; Gottfredson & Hirschi, 1987; Lam, 1989; Logan, 1972). If random assignment is not possible, the next choice would be quasi-experiments (non-
randomly selected groups) (Blumstein et al., 1988b; Farrington et al., 1986). As Logan states, “there should be some follow-up or delayed measurement . . . for both the treatment and control groups. This is especially important with respect to criminal behavior, which cannot be measured on-the-spot since it only manifests itself over some period of time” (1972, p. 379). A longitudinal-experimental study, unlike a pretest-posttest study, provides a method to compare short-term and long-term effects, that is, to “distinguish many different outcomes, such as an immediate lasting effect of an intervention, an immediate but short-lived effect, no effect on a pre-existing trend . . . . “ (Farrington, 1992, p. 363). The most ideal longitudinal research design would be a survey of students, on a yearly basis, until they graduate. However, this may not be feasible for multiple years in the future (due to financial reasons, practicality, or time constraints, etc.). I did not come across any longitudinal Canadian studies related to conflict resolution and peer mediation programs.

Longitudinal research is limited in some ways such as changes in student composition and threats to internal validity (See page 108 of this thesis).
Research Reviews

There is a need for more research that reviews conflict resolution and peer mediation programs, that is, a review of evaluative studies. Some researchers have attempted to do this with conflict resolution programs (Johnson & Johnson, 1996; Lam, 1989; Powell et al., 1996). This is vital in order to draw conclusions about the effectiveness of these programs. Logan (1972) conducted an exemplary methodological review of evaluation research in crime and delinquency, a “systematic assessment of specific research studies on the effectiveness of various correctional and preventive practices,” which could be applied to conflict resolution research (Logan, 1972, p. 378). Logan lists “several minimal methodological requirements that studies reviewed here must meet in order to merit any further consideration as to their scientific adequacy” (Logan, 1972, p. 378). Interestingly, he found that none of the studies on correctional or preventive effectiveness can be described as adequate: “There is not one study that meets all of the criteria proposed in this paper as the minimal methodological requirements of a scientifically sounds test of effectiveness” (p. 380). Logan used the following criteria to determine the effectiveness of a program:

(I) adequate definition of program or technique, (II), capable of routinization, (III), provision of control group, (IV), control group selected on random basis, (V), control group selected by matching, (VI) evidence that only treatment group received treatment, (VII), before and after comparison, (VIII), measurable definition of “success", (IX), compatible with normal notions of “success", (X), follow-up in the community. (1972, p. 372)
Follow-up in the community could be substituted for follow-up at school. Additional criteria could be added such as an analysis of the research instruments. For example, to determine whether definition of terms were provided in the questionnaire administered to respondents and to determine if types of injury were measured. It is vital to review evaluative studies in order to determine the effectiveness of these programs. It is the opinion of the author of this thesis that this type of research is extremely worthwhile and valuable.

**Contribution**

I have provided a critical review of both Canadian and American statistics on school violence. This review is useful in determining the seriousness of school violence in North America.

I have suggested security-based alternatives to conflict resolution programs. I hope that this will encourage school officials and researchers to consider the importance of providing school security that could prevent both fatal and nonfatal serious violent incidents.

I have contributed a review of conflict resolution and peer mediation program evaluation studies in Canada. I have determined that these programs, with a goal of reducing school violence, often do not include a sufficient evaluation of a reduction in violent incidents after program implementation. My observation, hopefully, will encourage future researchers to include this important aspect into their research design.
Lastly, I have suggested methods of conducting future research that will provide more quality, methodologically sound, relevant research in the field of school violence.
REFERENCES


Legal wrangles top Canadian news: From the murder of school-girl Reena Virk by her schoolmates to the trial of Gillian Guess for obstructing justice in a murder trial, the courts have seen their share of high drama. (1998, February 11). The Vancouver Sun, p. A8.


The University of the State of New York, the State Education Department, the Office of Instruction and Program Development, & the New York Division of Criminal Justice Services. (1994). A study of safety & security in the public schools of New York State. Albany, NY: New York Sate Department of Education Board of Regents.


