



12-2004

A Study to Determine if the Implementation of the School Resource Officer (SRO) in a County School System has been Effective in Providing Overall Positive Changes in School Environments that have Resulted in Improved Scholarship and Decreased Adverse Behaviors by Students

Ross Frederick Rogers III

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To the Graduate Council:

I am submitting herewith a dissertation written by Ross Frederick Rogers III entitled "A Study to Determine if the Implementation of the School Resource Officer (SRO) in a County School System has been Effective in Providing Overall Positive Changes in School Environments that have Resulted in Improved Scholarship and Decreased Adverse Behaviors by Students." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration.

Lloyd D. Davis, Major Professor

We have read this dissertation and recommend its acceptance:

C. Glennon Rowell, Thomas W. George, Richard Metzger

Accepted for the Council:

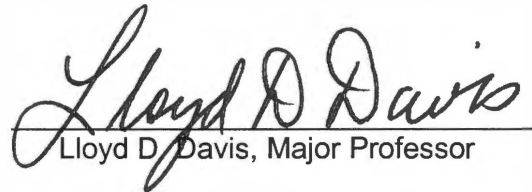
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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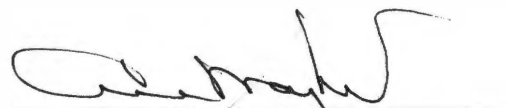
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Acceptance for the Council:


Vice Chancellor and Dean of
Graduate Studies

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RESOURCE OFFICER (SRO) IN A COUNTY SCHOOL SYSTEM HAS BEEN
EFFECTIVE IN PROVIDING OVERALL POSITIVE CHANGES IN SCHOOL
ENVIRONMENTS THAT HAVE RESULTED IN IMPROVED SCHOLARSHIP AND
DECREASED ADVERSE BEHAVIORS BY STUDENTS**

**A Dissertation
Presented for the
Doctor of Education
Degree
The University of Tennessee, Knoxville**

**Ross Frederick Rogers, III
December 2004**

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Thesis
2004b
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DEDICATION

This dissertation is dedicated to my wife, Ollie DeLane Rogers, for her steadfast encouragement and assistance in the completion of this educational milestone and my father, Ross Frederick Rogers (1914 – 2001), for imbuing me with the personal qualities needed to successfully complete this challenge in addition to the many others in my life.

Acknowledgments

I would like to thank all those who helped me to complete My Doctorate of Education degree. I would like to particularly thank Dr. Lloyd D. Davis for chairing my committee and engendering a stronger interest in statistics through his teaching ability and personal example. I would also like to thank my remaining committee members, Drs. Glennon Rowell, Thomas George, and Richard Metzger, for their guidance and assistance in completing this effort.

Abstract

On May 14, 2004, two students from the Russell Middle School in Winder, Georgia were arrested after it was learned that they had planned a Columbine style massacre on the last day of school (Johnston, 2004, June 8). The 1999 Columbine High School tragedy in Littleton, Colorado resulted in fourteen students and teachers being killed in a rampage by two socially alienated students (Vossekuil, Fein, Reddy, Borum and Modzeleski, 2002). The Georgia middle school students had diagrams of the school, a list of eighth graders plus a teacher to kill, firearms, and had planned to kill themselves in the end (Johnston, 2004, June 7). A student confided in the School Resource Officer to alert the authorities to the plot. The SRO took appropriate action and a tragedy was averted. The two boys were convicted of making terroristic threats on June 8, 2004 in the Barrow County Georgia Juvenile Court (Teenagers, 2004, June 9). This recent national story underlines the importance of the SRO efficacy debate.

Following the World Trade Center and Pentagon attacks on September 11, 2001, additional questions were raised concerning the status of school safety from terrorist threats. Although not a long term environmental learning issue, SRO participation in protecting a school from this type of threat also became an issue. The September 1, 2004 Chechen terrorist takeover of School Number 1 in Beslan, Russia, which resulted in over 300 deaths, has re-opened the debate (Lively and Barnes, 2004, September 11). The Chechen incident resulted in 1200 hostages, 338 deaths (half of them children), and the school building itself being destroyed (Classes, 2004, September 16). Further similar attacks by the Chechen terrorist leader have been threatened (Chechen, 2004, November 1). Beyond the research issues raised in this paper, the broader questions of the SRO's role or benefit within a potential terrorist scenario is a legitimate one for

additional discussion as a computer disc containing particulars on selected U.S. schools was recently found on an unidentified Iraqi man's computer in Iraq (Cavanagh, 2004, October 6).

A safe and disciplined learning environment is essential for academic achievement as it enables learning and teaching in a direct link (Barton, 2001) and (DOE, NCES 2001-030, December, 2000). Without this safe educational setting, teachers cannot teach and students cannot learn. Where there is chronic disorder, the possibility of learning is markedly compromised (Barton, Coley, and Wenglinsky, 1998). The SRO presence is being heralded as an essential brick in a school's foundation, helping support a solid learning environment for the students. Fifty-two percent of teachers now report that there is now an armed police officer presence on their school grounds (Vogel, 2004). The question of whether the SRO presence actually improves or in some way enhances a school's environment to the extent that either student learning is measurably enhanced and/or student adverse behavior is measurably reduced is the subject of this research. The syncopated SRO implementation over a five year period within the school district in this research allowed within year and between year comparisons of much of these data over the course of that implementation. A descriptive review of other SRO research history to date was also included in conjunction with this study for reader understanding of the current and pending SRO quantitative and qualitative research landscape.

To evaluate the possible SRO impact on school environments, changes in measured juvenile court data, school district data, SRO data, student achievement test data, and student value-added test data over a ten year period were assessed and compared with the appropriate statistical conclusions drawn. Multiple achievement and SRO measures from a total of twelve middle schools and seven high schools, with and without SROs assigned, were assessed from the 1993-1994 through the 2002-2003 school years.

Relevant issues associated with the exercising of these descriptive and statistical data comparisons are presented.

Attempts were made to triangulate the five data source results to form a quantitative mosaic of the overall impact of an SRO's presence in these nineteen schools.

Conclusions and recommendations are presented, including the SRO evaluation listings and descriptions. This research concludes with a recommended listing of "School Indicators of Well-Being" based on the knowledge gained while performing the research.

The major study conclusion drawn was that there was no measurable overall positive quantitative change within the affected district's middle and high schools due to the SRO implementation through multiple measures and a continuing SRO presence.

Recommendations included the conduct of additional quantitative studies on SRO efficacy, the establishment of a consistent federal definition of a "persistently dangerous" school, the adoption of nationally standardized school resource officer reporting protocols, and research on the postulated "covert aversion" behaviorism concept. An additional section detailing proposed "School Indicators of Well-Being" is presented for adoption by schools to track overall school system health.

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CHAPTER I

THE PROBLEM AND ITS SETTING

A. Introduction to the Study:

Between 1965 and 1992, the violent crime rate increased substantially in the United States. The FBI monitors changes in violent crime rate by tracking the volume of four specific crimes. Combined, these four types of offenses (murder, forcible rape, robbery, and aggravated assault) form the FBI's Uniform Crime Report (UCR) Violent Crime Index, which has become an accepted barometer of the country's level of violent crime. Between 1965 and 1992 the number of FBI Violent Crime Index offenses reported to the FBI by law enforcement agencies increased by 432 percent (Department of Justice (DOJ), Fact Sheet 94-16, 1994).

The Bureau of Justice Statistics (BJS) monitors the changes in nonfatal violent crime by tracking the volume of four specific crimes within its National Crime Victimization Survey (NCVS) system. Combined, these four offenses (rape, robbery, aggravated assault, and simple assault) form the BJS's Violent Victimization Rate per 1000 households. This survey based index rate has become another accepted barometer of the level of violent crime in the country. Between 1976 and 1993, nonfatal victimization of 12 to 17 year olds by all ages increased substantially from 84 to 130 per 1000 or 55 percent (DOJ Data Brief, 2002). During the same time period, the overall rate of nonfatal victimization (for all ages) increased from 48 to 51 per 1000 or 6 percent (DOJ, NCJ 163069, April, 1997). Reported youth victimization rates had increased dramatically,

indicating that a disproportionate increase in youth victimization greater than the general increase in the population had occurred over this seventeen year period. Clearly, this increase in youth victimizations indicated a growing problem with violence against youth.

Between 1983 and 1992, UCR Violent Crime Index reported offenses increased by 54 percent (DOJ, Fact Sheet 94-16, 1994). The FBI Violent Crime Index differs from the NCVS rate as it includes murder and excludes simple assault. These two indices generally track with each other although the NCVS measure comes from a survey while the UCR rates (per 100,000 persons) represent actual reported crimes to the police. This is why murder/homicide is a UCR component and not an NCVS survey measure. The NCVS reporting system compliments the UCR system. The NCVS counts crimes both reported and not reported to police and does not count crimes committed by children less than 12 years old (DOJ, NCJ 122705, November, 1995). The NCVS produces an estimate of the total number of the actual crimes committed and since it asks respondents if they have reported the crime to the police (and into the UCR). It also can indicate how many crimes go unreported when compared to the UCR (Murray, Schwartz, and Lichter, 2001). The NCVS rates, from a 1994 peak through 2002, decreased 42 percent (DOJ, NCJ 201797, February, 2004). This compliments a similar UCR Violent Crime rate decrease of 33 percent over the 1994 to 2003 period (DOJ, NCJ 203235, October, 2004).

These relatively large increases in both the NCVS and UCR crime rate indices in the 1992-94 timeframe were also perceived to reflect increasing violence levels in our public schools and served to fuel rising community concerns over student safety. The answer to the question of whether disproportionately larger juvenile crime increases were driving the overall UCR and NCVS index increases over the years 1983 to 1992 could be found in the UCR and NCVS data. In those 10 years, UCR adult violence was responsible for

more than 80 percent of the growth in violent crime. Even though adult crime continued to dominate these overall violent crime increases, the juvenile contribution to its growth was far greater than its contribution in the past. In summary, juveniles were not driving the increasing violent crime trends, but their responsibility for the growth in violent crime had increased by 1992 (DOJ, Fact Sheet 94-16, 1994). The NCVS data clearly showed the disproportionate increase in victimization rates from 1976 to 1993 in the 12 to 17 age group (55 percent compared to 6 percent as indicated earlier). By 1993, increasing concerns for safety in the classroom would support the introduction of law enforcement personnel into local schools. Thus, the initial SRO placements were probably driven by increasing community concerns for student safety in the face of increasing student victimizations.

For the past decade, school educators, elected officials, students, and the general public have been increasingly concerned over this rising level of violence in schools. Instances of school violence now receive more media coverage because of both a perceived increasing frequency and severity of this violence. Twenty-four hour cable news channels, in their continuing search for continuous news, assure that any significant school safety incident is immediately profiled nationwide. School shooting incidents have clearly tipped the scales in the last decade to require more security demands. The Columbine High School tragedy in 1999, coupled with several other high profile school shootings established and solidified the need, in the public's mind, of having School Resource Officers (SROs) in the schools.

The reality was that student victimization in the nation's schools has actually decreased since a 1995 peak. Federal statistics indicated that violent victimization rates at schools had decreased from about 48 crimes per 1,000 students aged 12 through 18 in 1995 to 34 per 1,000 by 2001. The data also showed that between 1995 and 2001,

students who indicated that they were victims of a crime in the NCVS surveys decreased from 10 percent to 6 percent (Department of Education (DOE), NCES 2003-009, November, 2002). The number of students expelled for carrying a firearm to school decreased from 5,724 in 1996-97 to 3,523 in 1998-99, probably in response to zero-tolerance policy implementations (DOE, NCES 2001-017, October, 2000).

In Tennessee, during the 1999-00 school year, 2.6 percent of public school teachers reported being physically attacked by students while 41.9 percent indicated that student misbehavior interfered with their teaching (DOE, NCES 2002-313, May, 2002). In summary, school continues to be a dangerous place in need of better discipline, but the overall trend of student violence since 1994 has been decreasing.

Another factor observed is that the level of violence, though decreasing, appeared to be moving more from the high schools into the middle schools as indicated by the middle school NCVS results referenced earlier (DOE, NCES 2002-113, October, 2001). Bullying appeared to occur more frequently in the middle school setting, possibly accounting for some of these differences (DOE, NCES 95-204, October, 1995). The local decision to place School Resource Officers (SROs) into the middle schools was probably a result of these types of problems as experienced locally.

Prior to 1995, when overall and juvenile crime rates were still increasing, communities responded to the problem of perceived and actual increasing violence in several ways. Responses included establishing harsher disciplinary policies, increasing counseling capabilities, increasing ethical emphases in the curriculum, installing metal detectors and cameras, initiating random student and locker searches, establishing conflict resolution programs, and implementing various "zero tolerance" policies for adverse student behaviors. Communities also increasingly initiated the SRO concept in their school districts. By the 1996-97 school year, 6 percent of public schools nationally had police or

some sort of law enforcement personnel stationed 30 hours or more per week at a school (DOE, NCES 98-030, March, 1998).

Some schools have more than one SRO and some SROs cover more than one school. By the 1999-2000 school year, 26.5 percent of Tennessee public schools reported a daily “presence” of police or security personnel in their schools (DOE, NCES 2002-313, May, 2002). Nationally, by the same 1999-2000 school year, 48 percent of middle and high schools reported a daily presence of police security personnel (DOE, NCES 2003-009, November 2002). Fifty-two percent of all teachers reported in a recent national survey that there is now an armed police officer on their school grounds (Vogel, 2004).

B. Potential Benefits of the Study:

The implementation of the SRO concept is proceeding rapidly in many school districts across this country and in Canada (Canada uses the SRO term and programs also). It is important to know quantitatively if the concept is working and can be justified. SRO officers appear to be having some positive impact in the review of the various qualitative SRO survey studies performed to date. These studies are addressed in Chapter II, listed in Appendix B, and discussed in Appendix C. The assigned SROs at schools are usually given educational responsibilities such as the Drug Abuse Resistance Education (D.A.R.E.) and the Gang Resistance Education and Training (G.R.E.A.T.) instruction in addition to their security functions. In these days of tight local budgets, programs may have to further justify themselves with quantitative supporting data. The thought often found in analyzing survey data is that it “seems” or “feels” like the SRO is worth the additional expense, but this substantiation may not be good enough. A methodology and

reporting schema that can objectively support the previous historically positive anecdotal conclusions needs to be considered.

If the presence of SROs can be shown statistically to possibly contribute a positive learning environment through improved test scores, graduation rates, less violence, a measurably safer setting, and improvements in school well-being, a stronger case for the SRO Implementations could be made. Once the empirical case is made, the SRO Implementations could move ahead more readily. More schools could then be made safer, enhancing student security and learning potential. If a strong empirical case cannot be supported, the SRO implementations should be re-directed or possibly discontinued. The results of this research effort will be significant whether a measurable possible "SRO Effect" on a school environment is or is not demonstrated. It will be important to administrators either way. School safety will continue as a concern. Nationally, in February, 2004, three students were killed, one wounded, and a teacher wounded in school violence in just one month (Nelson, 2004). Clearly school safety will remain a very important educational issue for the foreseeable future.

The cost and extent of the SRO remedy to school violence concerns demands a definitive data analysis to either support or refute the claims being made as to the benefits of having an SRO program. The decision may still be to continue the SRO presence, but the basis for doing so will be better understood. Those familiar with SRO programs are calling for increased implementation of SROs as a "vital" element of maintaining a safe environment (Dunn, 2002).

C. Background of the Study:

Over the last decade (1991 - 2001), the violence level nationally in our public schools increased, leveled out in the mid-nineties, and then began slowly decreasing (DOE, NCES 2003-009, November, 2002). Administrators responded with an array of strategies in response to parental, student, and community concerns. Local, state, and national elected officials and community leaders reacted with a plethora of legislative remedies and local initiatives to address the problem of increasing violence. Zero tolerance policies, gun free zones, school uniforms, technology, school access restrictions, more counseling resources, random drug searches, inclusion of character education into the curriculum, and even school prayer before and after school have been initiated to address this issue of violence directly within the school setting. Schools have also instituted the SRO concept to directly and quickly impact the school violence issue. Cops on the beat, in essence, were having their beats redefined into the schools. Factors recently introduced are the increased stress placed on students from the high-stakes testing proceeding from the NCLB Act, increased graduation testing requirements, and a more demanding curricula (Lenhardt and Willert, 2002). The long term effect of the increased stress in school environments from high-stakes testing remains to be determined. This "test stress" for students will continue to grow as an issue as public school enrollments are projected to increase 4 percent by the 2012-2013 school year over the 2001-2002 levels (DOE, NCES 2004-019, May, 2004).

This descriptive study will examine a school system that has sufficient data and history with the SRO concept to provide some relevant performance comparisons. Because of the sequential implementation in the Hamilton County Tennessee School

District, this system will be assessed in detail. Comparisons to other systems, norms, and studies, where appropriate, will be made to determine, if possible, the efficacy of the SRO presence, if any, in enhancing a positive learning environment.

D. Statement of the Problem:

The level of violence in schools is being responded to by school systems in a variety of ways as mentioned in previous sections. The most comprehensive approach appears to be the assignment of the full time SRO at the school for security and instructional reasons. The paramount research question to be answered is whether the assignment of an SRO has had the desired effect on school violence levels and student achievement through the creation of a more positive learning environment in a statistically significant way. The answer to this question is important to parents, school administrators, teachers, and the police, all who have an interest in demonstrating that the program is attaining desired positive results. The cities, counties, state, and federal agencies, which fund these activities through taxes and grants, will also have an interest in knowing whether these programs can be shown to be definitively working. The public, which ultimately pays for the increased costs of the SRO's activities and presence, is also an important stakeholder in the answer to this question.

The Overall Research Question Is:

Has the implementation of the School Resource Officer in a county school system been effective in providing overall positive changes in school environments that have resulted in improved scholarship and decreased adverse behaviors by students?

E. Methods of the Study:

The specific purpose of this study is to analyze the multiyear data from the Hamilton County Tennessee School System and apply several descriptive and statistical comparison techniques to those data to review the impact, if any, of the SRO presence. Possibly, within these data, it may be shown that SROs assigned in Hamilton County seem to promote a positive school learning environment with reduced school violence in a statistically significant manner. Additionally, the Hamilton County SRO data will be compared with other SRO data and appropriate conclusions drawn. A qualitative feature of this study was to allow the various quantitative data sets encountered to emerge and influence the research direction, where appropriate, in a qualitative manner. An additional benefit of the study was to determine which of the data sets reviewed were possibly relevant to Hamilton County Schools' positive educational and disciplinary environments. The data sets became apparent, in an evolving qualitative manner, during the conduct of the data review and the research. These "Indicators of School Well-Being" are provided in Chapter V and patterned after the Federal Interagency Forum on Child and Family Statistics' (FIFCFS) annual publication entitled "America's Children: Key National Indicators of Well-Being" series (FIFCFS, 2003).

F: Chronology of the School Resource Officer Implementation:

The assignment of SROs in Hamilton County was sequenced over a five year period. The gradual staffing of the various schools provided data that allowed comparisons between schools with and without an assigned SRO within a given year. Also, longitudinal comparisons could be made within a given school before and after the SRO was assigned to that school. Since the SRO Program was staffed by five jurisdictions (Chattanooga, Red Bank, East Ridge, and the Soddy-Daisy Police Departments, and the Hamilton County Sheriff's Office), a variety of comparisons within Hamilton County were possible.

The issue of which jurisdiction, police departments or the school district, should pay for the maintenance of the SRO program is not resolved. The fiscal responsibility is retained by the unincorporated county (sheriff) and the police jurisdictions that have the schools with SROs within their jurisdictions (Gang, 2001, August 8). The issue of who pays for the SROs is never satisfactorily resolved by the governments, the county, and the school board. The funding matter eventually became the overriding factor in the reductions in the fall of 2004.

1. The Chronology of the Hamilton County SRO Implementation:

a. November, 1995:

Chattanooga voters decided to consolidate the Chattanooga City School System with the Hamilton County School District (HCSD) beginning with the 1997-1998 school year. The new consolidated system had approximately 47,000 students.

b. January 22, 1996:

The School Resource Officer Program was initiated by the Hamilton County School District at Ooltewah High School for the spring term. The first SRO was a Lt. Charles O. Lowery, Jr. of the Hamilton County Sheriff's Department. He currently supervises the County SROs.

c. Summer, 1997:

The City and County School Superintendents stepped down and a new School Superintendent for the consolidated Hamilton County School District system assumed the previous duties of both former superintendents. SROs began to be assigned to the remaining high schools beginning with the fall semester (Fortune, 1999, September 10).

d. August, 1997:

The School Resource Officer Program was initiated at Central High School. The city provided the SROs to the former City schools and the County provided the SROs to the County schools. The towns of Red Bank (with help from the towns of Signal Mountain and Walden), Soddy-Daisy, and East Ridge provided SROs to the three high schools located within their jurisdictions. City middle schools were to follow two years later.

e. June, 1999:

The County Commission voted to put SROs in all remaining middle schools beginning with the 2000 - 2001 school year (Walton, 1999, June 2).

f. August, 1999:

SROs commenced assignments at the city middle schools (Fortune, 1999, August 29). The middle school SROs were funded by a one million dollar Cops in School grant (Fortune, 1999, September 10). The assignment of fifteen SROs to

the high schools was completed. Some high schools have attached middle schools and the SRO covers both (three schools presently).

g. August, 2000 School Year:

SROs are assigned to all twenty of the middle schools.

h. Fall, 2001:

The city added two SROs from a 2001 COPs in Schools Grant (DOJ, Fact Sheet, December, 2001). Thirty three SRO Full Time Equivalent (FTEs) are assigned to the HCSD (Cook, 2001, August 16). This FTE total includes two supervisors (one for the City and one for the County).

i. Spring, 2004:

Thirty three SRO FTEs continued in the HCSD, but continuance of the SRO Program funding is under review (Carroll, B. A., 2004, April 19).

j. Fall 2004:

Following budgetary restrictions, nine high schools and six middle schools retained SRO coverage as the SRO program was significantly decreased.

G. Research Discussion and Bias:

For this research to be useful, it needed to serve and benefit the educational system's discussions of policy, provide bases for educational administrative change, and support further investigations of emerging programs and practices. In short, it needed to be useful to the classroom teacher and that environment. For this research on SRO efficacy, the need to know the impact an SRO has, if any, on the school environment is important. This is especially true in light of some of the claims made linking an SRO's

presence with improved measures associated with school discipline and student achievement. One of the purposes of this research is to translate the aspect of SRO presence in the school environment into usable knowledge.

Some of the quantitative techniques used in this research can be replicated on other comprehensive school reform treatments with similar measures. The important research techniques exercised here are the use of longitudinal data, multiple related sources, use of quantitative data, triangulation of results, comparison to unaffected groups, and the decision to allow available data drive an evolving methodological approach. The melding of qualitative and quantitative methods in this report is recommended as the best way to provide educational research results in the future (Maxwell, 2004). This study's combination of descriptive qualitative methods with descriptive and quantitative statistical methods will hopefully prove useful to educational clients.

This researcher has attempted to remain neutral on the potential outcome of the research question. The finding of compelling results to the research question is probably of equal importance either way. Educators have claimed positive benefits of an SRO presence, but these benefits may not be shown quantitatively. A positive SRO impact was suspected, but one was not surprised that, in many cases, a positive impact was not demonstrated quantitatively.

H. Specific Research Questions:

The following research questions were posed to evaluate the overall research question of whether the implementation of the SRO program in a county school system has been effective in providing overall positive changes in school environments that

have resulted in improved scholarship and decreased adverse behaviors by the students. The research questions and the associated research hypotheses that follow proceed from the four diverse sources of data that were used. These were the juvenile court reporting measures, the school district behavioral and achievement measures, the SRO reporting measures, and the Tennessee Comprehensive Assessment Program (TCAP) student achievement measures.

1. Juvenile Court Petition Measures:

Had the Hamilton County Juvenile Court petition measure totals changed since the implementation of the SRO program and a potentially safer educational environment within the Hamilton County Middle and High Schools? Specifically, had the measure totals for Juvenile Court Delinquent Petitions, Unruly Petitions, Truant Petitions, Petitions for Ages 12-14, Petitions for Ages 15-17, Assault Petitions, Drug Petitions, Theft Petitions, Weapons on School Property Petitions, and Delinquent Petitions by City associated with the middle and high school aged students changed before, during, or after the implementation of SROs into Hamilton County schools?

2. School District Student Academic and Behavioral Outcome Measures:

Had student academic or behavioral outcome measures in Hamilton County Middle and High Schools changed since the SRO Implementation and a potentially safer educational environment within the Hamilton County School District when compared longitudinally (year to year)? Possible outcomes included results from the

Scholastic Aptitude Tests (SATs), American College Tests (ACTs), Advanced Placement (AP) exam participation, grade point averages (GPAs), promotion rates, truancy rates, dropout rates, suspension rates, expulsion rates, graduation rates, and other appropriate school academic and behavioral outcome measures that may be available.

3. SRO School Reporting Measures:

Had the implementation of the SRO or the change of an SRO affected the number of SRO incident reporting measures in Hamilton County Middle and High Schools when compared longitudinally year to year? SRO incident measures included Offense Reports, Consultation Reports, Arrests, Conflict Resolutions, Fights, and Assaults.

4. Student Achievement Testing Outcome Measures:

Had student testing outcome measures in Hamilton County Middle and High Schools changed when schools were compared longitudinally year-to-year with and without an SRO and between SRO and non SRO schools within the same school year? Test outcome measures included the Writing Assessments, TVAAS Percentile scores, Tennessee Comprehensive Assessment Program (TCAP) average NCE scores in Math, Reading, Science, Language Arts, and Social Studies, and Algebra I NCE scores.

I. Research Hypotheses:

Specific null and alternative hypotheses were postulated to operationalize the four above research questions and measures using the data available to support the overall findings of this research. The four hypotheses follow:

1. Juvenile Court Petition Measures:

A comparison of violence, behavioral, and juvenile court measures for middle and high schools within Hamilton County for the school years 1994 through 2003 were made. Violence measures included Number of Unruly Petitions, Assaults and Aggravated Assaults Petitions, and Weapons on School Property Petitions. Behavioral measures included Number of Truant Petitions, Possession of Drugs and Paraphernalia Petitions, and Thefts Under Ten Thousand Dollars Petitions. Juvenile court measures included Total Petitions Filed, Number of Delinquent Petitions, and Delinquent Offenses by Address. The comparisons were done for the overall number of occurrences totals for the various types of incidents tabulated. All of these evaluations were descriptive statistics comparisons except for the Weapons on School Property petitions. The Weapons on School Property petition means before and after the SRO placement comparison were tested using the student's t-test difference of means test. The null hypothesis, H_0 , was that the means of the Weapons on School Property measure were not significantly different before (1994-1998) and after (1999-2003) the SRO placements.

2. School District Student Academic and Behavioral Outcome Measures:

A comparison of available student outcome measures in SRO and non-SRO middle and high schools within Hamilton County for the school years 1994 through 2003 were to be made. The measures to have been obtained and compared were the approximately fifty Indicators of School Well-Being listed in Appendix G. The means comparisons were to be done for the overall totals for the various types of school assessment and behavioral indicators. The comparisons of these school indicators were to be done for these longitudinal data before and after the SRO presence condition. Comparisons were also to be made within the same calendar year for the “with” and “without” SRO present condition between multiple schools. The null hypothesis, H_0 , was that the means of these various student outcome measures were not significantly different when compared.

3. School Resource Officer School Reporting Measures:

Comparisons of SRO measures of longitudinal school level data from the SRO staffed middle and high schools for the school years 1996 through 2003 were made as the data were available. The six SRO incident data elements that were used for the analyses were Offense Reports, Consultation Reports, Arrests, Conflict Resolutions, Fights, and Assaults. These were descriptive statistics comparisons over seven school years and specific hypotheses were not made.

4. Student Achievement Testing Outcome Measures:

Comparisons of available student test outcome measures in SRO and non-SRO middle and high schools within Hamilton County for the school years 1994 through 2003 were made. The test outcome measures included the Writing Assessments, TVAAS Percentile scores, Tennessee Comprehensive Assessment Program (TCAP) average NCE scores in Math, Reading, Science, Language Arts, and Social Studies, and Algebra I NCE scores. These comparisons were done for the overall totals for the various types of individual school indicators obtained. The comparisons of these school assessment indicators were done for these longitudinal data before and after the SRO presence condition. Comparisons were also made within the same calendar year for the “with” and “without” SRO present condition between multiple schools.

J. Limitations and Delimitations of the Study:

The major limitation of any study of this type is the validity and reliability of the reported data. The validity may be suspect because there may be a tendency for school administrators to under report problems. Having a significant number of incidents at a particular school tends to focus negative attention on that school from a variety of directions within the community. Principals may tend to “hide” problems as indicated in a National Association of School Resource Officers (NASRO) survey (Trump, 2002). This type of behavior, if it occurs, makes the validity of data suspect.

The multi-year aspect of this study brings into question the reliability of data. School level measures were not only to be between schools within a given school year, but school data were compared before and after the implementation of the SRO to assess

any changes. Thus this study has both lateral and longitudinal components. The categorization of the various types of the SRO school incidents is important in these types of comparisons. Any change in the interpretation of the definitions of incidents can also affect data. Changes in supervisory or front-line personnel also have the potential to affect the consistency in the way incidents are classified and reported. Different people can see things in different ways or respond differently to reporting pressures.

The achievement and value added testing data were quite reliable as the test data and their value added components were obtained under rigorously consistent classroom conditions. When aggregated to the school level, and leveled statistically within the Tennessee Value Added Assessment System (TVAAS) methodology, these data are very reliable (Neill, Guisbond, Shaeffer, Madden and Legeros (2004). Testing data, which included the results of school system standardized testing systems, provided valid data for the comparisons. Differences between the city and county law enforcement jurisdiction reporting formats and definitions were considered reliability issues.

In conclusion, the data received were useful due to the sequential SRO implementation, allowing the following comparisons in this research to be meaningful. It should be noted that the format, extent, and quality of these data required some alteration or modification of the statistical analyses and methodologies used.

K. Assumptions of the Study:

1. That County SRO incident and testing data would be available for comparisons.
2. That the County would be able to provide data on their expulsion / suspension data, graduation statistics, teacher data, and testing results data.

3. The SRO staffing chronology since 1996 could be obtained through interviews with the City and County SRO supervisors and would be accurate. It is presented in Appendix A.
4. That the validity and reliability of the SRO Incident data were strong enough and the testing data robust enough to support the conclusions drawn.
5. That the various entities would cooperate and provide needed data as requested in a timely manner.

L. Definition of Terms:

The following listing of terms and concepts that have been or will be referred to within this study are defined for the reader.

Age of Onset: The age at which an individual reports his or her first act of serious violence. Most data starts at age 12 or about 6th grade

Aggravated Assault: An unlawful attack by one person upon another wherein the offender uses a weapon or displays it in a threatening manner, or the victim suffers obvious severe or aggravated bodily injury involving apparent broken bones, loss of teeth, possible internal injury, severe laceration, or loss of consciousness.

Aggression: Behavior, physical or verbal, that is intended to harm another person.

Assault: A school and law violation which results in bodily harm. SRO will arrest the student if serious bodily injury is involved. The school administrator decides on the school punishment.

Arrest: Physical arrest of a student by an SRO. Arrests are usually dispositioned at Juvenile Court.

Cohort: A group of persons who share one or more demographic characteristics.

Conflict Resolution: The SRO investigates a situation between students and serves as a mediator in working towards a resolution. Referrals for resolution can come from students, teachers, counselors, and the school administrators.

Consultation Report: A report of a student discussion with the SRO on some issue of importance to the student usually at the request of the student. These discussions can be of a non-academic nature and law enforcement questions can be asked. These reports document an important aspect of an SRO's activities.

Control group. A group that receives standard care or no intervention in a research study, compared to the experimental, treatment, or intervention group. The school without an SRO assigned, for example, could be a control group.

Covert Aversion: The behavior where a person avoids an action pattern or activity because he/she fears that an adverse consequence may occur. For example, the robber who fails to accost a pedestrian because of a fear of use of a concealed carry weapon by the potential victim.

Delinquent Behavior: A pattern of consciously chosen and sustained behaviors that include antisocial or illegal acts, typically involving property crimes, substance use, gun ownership, and promiscuity.

Dropout: The event of leaving school prior to graduation or a person not in school who has not graduated.

Effect Size: The predictive power of an individual or general type of risk or protective factor; the size of the deterrent effect of an intervention compared to no treatment or a standard treatment. For program effectiveness, the effect size measured is the average difference (standardized) between the treatment and control group means on a selected variable.

Enrollment: The total students registered in a school generally in the fall of the year.

Efficacy Trials: Research that tests for benefits to participants in a controlled or experimental setting.

Experimental Research: A type of study design involving comparison of a group that receives an intervention (the experimental or treatment group) and a group that receives standard input or no intervention (the control group).

Participants are randomly assigned to one of these groups. This type of study design permits researchers to assess cause-and-effect relationships and can be used to determine intervention effectiveness. This is the highest level of research design.

Fight: A school and law violation which does not result in bodily harm. The parent will decide on prosecution. The school administrator decides on the school punishment.

Highly Qualified Teachers: By NCLB requirements, teachers who are certified by the state, hold at least a bachelor's degree, and demonstrate competence in the core subject they teach.

High School: A review of the High Schools in Hamilton County showed that all 14 schools ended with a 12th grade. Of those, 11 started with a 9th grade. Of the remaining 3, 2 started with a 6th grade and one a kindergarten. For the purposes

of this study, “High School” will mean grades 9 through 12 and generally corresponding to ages 15 through 18 years.

Incident: Something specific that occurs consistently and can be quantified.

Incidents – SRO: The six SRO incident data elements that were used for the SRO data analysis were Offense Reports, Consultation Reports, Arrests, Conflict Resolutions, Fights, and Assaults. These totals were reported monthly to the SRO’s supervisor.

Incident Rate: The number of self-reported or measured acts per number of individuals within a population. A measure of the volume of various activities as used in various reports. Usually the number of acts or incidents per 100 or 1,000 people.

Interventions: Strategies and programs that reduce the risk of violence among youths who display one or more of the risk factors for violence.

Level of Control: Efforts to take into account the other factors that might influence the data or responses from participants in a research study. It contributes to the quality of a given study.

Level of Violence: The level of violence is generally defined as the frequency of the various events or incidents that are reported within the protocol set by the jurisdiction in question. It must be understood that some incidents are more serious than others and a hierarchy exists that requires some interpretation. It can be expressed as a rate, such as so many incidents per 1000 students, or as a number of incidents within a subject population.

Locally Representative Sample: In this study, the term representative sample may be used to refer to a probability sample. This is a sample that is selected in such a way that its characteristics can be generalized to the population (e.g., city

or county) from which it was drawn with a known degree of accuracy. The accuracy of generalizations from probability samples is given in the form of a confidence interval. In this report, 95 percent confidence intervals indicate an upper and lower bound for the population estimate that is accurate at least 95 percent of the time.

Longitudinal Research: Research in etiological (causal) and developmental research. A type of study design involving data from the same study participants over time. It allows researchers to estimate how a given treatment factor affects behavior of individuals or groups.

Maturation Effect: An effect associated with growing older or maturing. It may refer to changes in one's physical or social development. The term can refer to a reduction in youth violence observed during a transition to adulthood, usually during the late teen years to age 25. It can also refer to the increase in youth violent behavior from middle school to high school.

Meta-Analysis: A statistical method of combining the results of several studies to obtain more reliable estimates of the effects of a general type of treatment or intervention. It can be used to summarize program evaluation and draw overall conclusions about the strength and consistency of an influence or effect size that particular types of programs may have on violence.

Middle School: A review of the Middle Schools in Hamilton County showed that all 21 schools end with an 8th grade. Of those, 19 start with a 6th grade. Of the remaining 2, 1 starts with a 5th grade and one with a kindergarten. For the purposes of this study, "Middle School" will mean grades 6 through 8 and generally corresponding to ages 12 through 14 years.

Offense Reports: An offense report is a written report requiring a complaint number. Law enforcement (SRO) must intervene due to a theft, fight, assault, vandalism, or other incident. A parent may require an offense report to be written due to an unruly or runaway student.

Positive Learning Environment: This is a learning environment where, through a confluence of positive physical, environmental, educational, social, and psychological factors, the teaching and learning opportunity is improved to the extent that various positive effects such as higher test scores, lower incidences of discipline problems, higher graduation rates, or less fearful student / teacher survey results are indicated.

Prevalence Rate: As used in this study, the proportion of youths involved in one or more violent behaviors during some specified time interval.

Probability Sample: This is a sample selected in such a way that its characteristics can be generalized to the population from which it was drawn with a known degree of accuracy. The level of accuracy for proportions, means, and correlations can be presented as a 95 percent confidence interval. This interval will contain the true population value 95 percent of the time.

Protective Factor: A characteristic or environmental condition that reduces the potential harmful effect of a risk factor for violent behavior or that buffers or moderates the effects of risk. Protective factors are grouped into individual, family, school, peer group, social, community, and school domains. The SRO would be a protective factor.

Quasi-Experimental Research: A type of research design with experimental and control groups but without random assignment to these groups. Groups are matched on selected characteristics and differences are controlled in the

analysis. The claim of group equivalence or comparability is not as strong with this design as in an experimental design.

Reliability: The consistency of a measure. That the measure yields the same result on different occasions or applications when no real change has occurred.

Replication: Repeating an intervention or prevention program at multiple sites to determine if the results are the same. It establishes that a program can be effective in other settings when implemented by new teams under different conditions.

Reportable School Incidents: In this study, the classifications presented and used by Hamilton County and the City of Chattanooga will be used with any variation indicated.

Robbery: The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or putting the victim in fear. Along with homicide, aggravated assault, and rape, one of the four violent crimes covered in FBI crime reporting.

Sampling: The selection of persons to be studied in a research project.

School Resource Officer (SRO): The police officer assigned to a school. The SRO has four basic functions in most schools. These functions are those of instructor (presenting such awareness programs as DARE or GREAT), law enforcer, advisor, and to provide a general presence at meetings and events associated with the school served. These officers are sometimes called by several other names such as "School and Safety Education Officer," "Student Liaison Officer," and "Community Outreach Officer." The Center for the Prevention of School Violence indicates that at one conference, 85 percent of the

SRO attendees indicated that “SRO” was used in their local areas (CPSV, 1998).

This study uses the term School Resource Officer or SRO.

School Year: The school year is defined as the early fall to late spring session denoted by both numbered years, usually August to May.

Self Reporting Studies: Research studies that ask people in confidence to describe their own behavior. In the context of youth violence, surveys that ask young people about violent acts they may have committed or may have been victims of during a given period of time.

Serious Violent Crime: As defined in this report, aggravated assault, robbery, rape, and homicide.

Seriously Violent Youths: Youths that are involved in serious violent behavior. They are typically high-frequency offenders who are involved in both serious and non-serious offenses. These youths account for a major share of all criminal behavior by persons under the age of 18.

Socioeconomic Status (SES): In reference to youths, their parents' education, occupation, and income. The SES factor is sometimes indicated in educational research by school students' degree of participation in the free or reduced priced school lunch program provided by the U.S. Department of Agriculture (USDA). Low SES at the school level is considered having greater than 40 percent student participation in the USDA free or reduced price lunch program. The guidelines for a family of four from the U.S. Agriculture Department as of July 1, 2004 are below \$24,505 for free lunches and between \$24,505 and \$34,873 for reduced price (40 cent) lunches (USDA Income Eligibility Guidelines).

Statistical Significance: The level of confidence with which one can conclude that a difference between two or more groups (generally a treatment and control

group) is the result of the treatment delivered or observed rather than the selection process or chance. A probability value of .05 is widely accepted as the threshold for statistical significance in the social and behavioral sciences; a probability value below this threshold ($p \leq .05$) indicates that a difference of this magnitude could happen by chance less than 5 percent of the time. This study will use $p \leq .05$.

Sustained Effects: These effects are changes in individual competencies and environmental conditions produced by effective programs that continue at least a year beyond a treatment or subject participation in an intervention.

Uniform Crime Reporting (UCR) System: Operated by the FBI since the 1930s, this program monitors arrests made by law enforcement agencies across the United States and compiles annual arrest information for localities.

Validity: The degree to which an instrument tests what it is supposed to test or a measure assesses what it is supposed to assess.

Zero Tolerance Incidents: Tennessee Code Annotated 49-6-3401(g) defines zero tolerance incidents as possession of a weapon, a controlled substance, or committing battery against an educational employee and requires expulsion for at least a year (Tennessee Comptroller Report, 2003).

M. School Resource Officer Data Discussion:

Collected Hamilton County and Chattanooga City School Resource Officer school data were obtained to assess and evaluate the SRO's own measures of the levels of school violence. In order to determine the impact an SRO may have on a school's learning environment, it was imperative to know when the SRO was established in their

respective schools. An SRO Matrix was developed that accurately indicated when the SROs were assigned and when they were replaced. This SRO Matrix was occasionally reviewed by the various SRO supervisors to assure its accuracy. The Matrix forms the basis for establishing the cut points for evaluating the before and after longitudinal data in determining any learning environmental changes which may have been enhanced due to their presence.

CHAPTER II

REVIEW OF RELATED LITERATURE

A. Introduction:

The review of the literature for this study was concentrated in three areas. First, the Internet was extensively searched for information relating to the subject matter with extensive results, particularly from Federal Government resources. Where particularly promising informational sources were discovered, follow-up E-mails were sent to determine the extent of these resources and any other research being conducted. Numerous publications were ordered from both public and private sources. A library of approximately 500 documents was amassed both from the source in hard copy format and, where not possible, a web copy was downloaded. Fifteen CD-ROMS of data were obtained for reference if needed.

Second, an archive of over five years of relevant national and local newspaper articles relating to the topics of school violence, SRO programs, test score issues, suspensions and expulsions, truancy, and dropout issues were compiled by the researcher. This information was obtained over the Internet from the Eisenhower National Clearinghouse (ENC) Education Headlines (Columbus, Ohio), Jimmy Kirkpatrick's Education News of the Education Writers' Association (Washington, DC), the Education Commission of the States (Denver, CO) daily E-Clips, and the Education Week Magazine Daily Summaries of news stories and significant research reports on the subject. A number of school districts have initiated web pages focusing on their School Resource Programs. These were searched for relative information. The national

organization for SROs, the National Association of School Resource Officers (NASRO), provided information through their web site and publications. The Internet search indicated that the implementation of the SRO concept is well underway nationwide. Several states such as Virginia, North Carolina, and Pennsylvania provided information in the form of local and state SRO survey results. The news and publication search continued and was included through the completion of this research.

Third, a web search indicated that the effectiveness of the SRO concept had not been well researched as yet, although several efforts were underway. This researcher found and obtained copies of all known research on SROs (Appendices B and C.). The search of the traditional library sources provided many documents on subjects such as discipline, school violence, counseling activities, and contemporary discussion of recent events, but yielded virtually no information on the efficacy of the SRO concept.

There were a number of organizations, regional, national, and governmental, where information was available on school violence and SRO programs. The information that was found as a result of this literature search indicated that a study, such as described herein, has not been previously performed. This study was the initial quantitative effort of any extent to investigate, using descriptive and statistical data, the relationship between the environmental changes resulting from the presence of an SRO in the school and any improvements in school well-being as evidenced by student and teacher quantitative measures.

B. Review of the Literature:

Internet searches were performed on various search engines. The results of these searches were followed and the various sites bookmarked and reviewed subsequently.

The searches consisted of entering both “School Resource Officer” and “SRO” into major web crawlers, and search engines. Results were tabulated and some are attached. The government sites provided helpful information on school violence, but relatively little information on SROs. This was strange because of the number of current SRO positions that are federally funded. Again, there was no indication that any significant quantitative research on this topic had been performed.

1. Internet Sources: The Internet results can be categorized into four basic areas.

a. National Organizations:

Two national entities were located that are associated with this subject. The National Association of School Resource Officers (NASRO), located in Florida, is the professional association for SROs. NASRO conducts meetings, conferences, and training courses across the country. It does not conduct research other than surveys. Another national company, National School Safety and Security Services located in Cleveland, Ohio, markets school security related products and services that support SRO activities and also conducts SRO research.

b. Research Organizations and Safety Centers:

Numerous regional organizations were located that appear to track and collect data on school violence. One of the most prominent appeared to be the Center for the Prevention of School Violence (CPSV), established in 1993 and located in Raleigh, NC. This center responded quickly to queries and was actively involved in this subject area. CPSV had not, as yet, performed the type of statistical research similar to this study. The State of North Carolina had been collecting data since 1993 under a state mandate where 115 of 117 school districts had at

least one SRO during the 2003-2004 school year (CPSV, 2003-2004 Fact Sheet). Finally, the Research & Development Center for the Advancement of Student Learning located in Fort Collins, Colorado performed educational research on a variety of topics. Associated with Colorado State University, Front Range Community College and the local school district, this Center completed several qualitative studies of the SRO concept and they are presented in Appendix C.

c. Federal Agencies, Programs, and Documents:

Several federal agencies were found that were good sources of information in the school violence prevention arena. The Federal Bureau of Investigation, Bureau of Justice Statistics, National Criminal Justice Reference Service, Justice Information Center, National Center for Educational Statistics, National School Safety Center, and the Safe and Drug-Free Schools Program maintain websites on the subject area. The violence data these agencies presented were comprehensive, but significant quantitative research in the area of SRO effectiveness had not been performed.

d. SRO Homepages:

These individual school SRO web sites were sponsored by the school, the school district, the local police department, or the individual SRO him/herself. These pages generally described the SRO's purpose, provided for the reporting of problems, gave a biography of the officer, and sometimes provided a picture of the SRO. These web pages were interesting and provided sources for possible future surveys of individuals or schools that have SROs. Very little definitive data or information, however, were available from these sources.

2. Other Information Sources:

The remainder of the literature review concentrated on traditional search sources. These included the Educational Resources Information Center (ERIC), Resources in Education, the Current Index to Journals in Education, the Electric Library, and the Library of Congress. No information could be found other than several general articles from ERIC on narrations of SRO implementation experience within individual schools. ERIC did respond to my query on SRO effectiveness research, but could not provide any information. ERIC recently closed its sixteen information clearinghouses and implemented a new web based query system similar to other popular internet search engines, however much of its archived information has yet to be loaded (Viadero, 2004, September 15).

C. Completed and Pending School Resource Officer Evaluations:

Thirty-three SRO program surveys and evaluations had been performed or were pending at the time of this research. Having obtained copies of all completed research efforts and having communicated with many of the researchers, the SRO historical research record presented here is complete through October, 2004. The majority of the completed and pending evaluations were primarily surveys. Several had some quantitative and qualitative elements. The review and assessment of the twenty-eight completed and five pending SRO evaluations are provided in Appendix C. Although this review was not a meta-analysis, per se, it is a thorough review of the present and near term SRO effectiveness research landscape. This review allowed some comparisons in

methodology and results. Table II.C.1. provides a classification of these thirty three evaluations.

In conjunction with this SRO efficacy evaluation using longitudinal and current year Hamilton County School District (HCSD) data, the SRO evaluation review performed was to effectively assess the practical significance of the provided school data and place them in context. This review of the research landscape of past and planned SRO evaluations was considered important to the research design of this descriptive ex post facto type study for both comparative and historical purposes. An appreciation of the extent and characteristics of these prior and planned SRO research efforts was considered essential to evaluating the significance of the results of this study. At the state level, North Carolina, Mississippi, and Pennsylvania were three states actively involved in current SRO effectiveness research efforts. Several of these reviews had some minor quantitative elements.

The SRO evaluations are arranged in the chronological order in which they were performed to provide the reader with a concise, historical timeline of this building research base. Some of the evaluations included quantitative research elements; some were primarily qualitative; most were simply surveys; and yet others included elements of all of the foregoing methodologies. Evaluating any form of educational research is complex. However, some basic research elements in good research may be observed. The new Elementary and Secondary Education Act (2001) required that school reform programs employ proven strategies and proven methods for student learning, teaching, and school management that are based on scientifically based research and proven to be effective practices (DOE, Desktop Reference, October, 2002). In fact, the term “scientifically based research” occurs 111 times in the text of the NCLB Act. The Act tends to promote randomized trials and quantitative methodology (Glenn, 2004).

Table II.C.1: Completed and Pending School Resource Officer Evaluations	
SRO Evaluation Classification	Number
Survey Evaluations	18
Elements of both Qualitative & Quantitative Evaluations	8
Quantitative Evaluations	3
Qualitative Evaluations	3
Case Study Evaluations	1
Total SRO Evaluations Reviewed	33

The following characteristics are indicators of solid educational research. These elements were condensed from a Department of Education Comprehensive School Reform (CSR) Program Office document on evaluating CSR programs (DOE, CSR Guidance p. 8 & 9, August, 2002). The SRO research encountered exhibited some of these elements. In considering the various SRO studies presented, the reader should look for and assess some of these elements when considering the quality and rigor of the findings presented.

The SRO implementations to date have generally not been performed in conjunction with accompanying comprehensive research activities. The SRO's effectiveness has usually been evaluated after the implementation. These SRO evaluations used the various data and information available after implementation to assess SRO efficacy. The after the fact research design to evaluate the SRO presence, when requested, was either a survey or, of necessity, some variation of an ex post facto treatment. The gold standard of educational research would be randomized field trials where students could be randomly assigned to schools prior to administering the treatment of interest (in this case, the SRO presence). The most notable random design in education was probably

the Tennessee Student / Teacher Achievement Ratio (STAR) experiment on class size reduction that was performed in 1985 and was conducted over a three year period (Tennessee Comptroller Report, April, 2004). The STAR research showed that class size reductions from an average of 22 to 15 students per class demonstrated positive cognitive improvements (Achilles, Finn, and Bain, 1997). Random designs, however, remain difficult to establish in educational settings. There will probably never be a random design for an SRO study due to the nature of this treatment. If SROs were ever discontinued in a school district, it would be very interesting to evaluate the established measured indicators for changes.

Following the World Trade Center and Pentagon attacks on September 11, 2001, additional questions were raised concerning the overall status of school safety. SRO participation in protecting a school from a terrorist event is an issue. The recent school takeover in Beslan, Russia on September 1, 2004 where over 326 teachers and students were killed has re-opened that debate (Lively and Barnes, 2004, September 11). This terrorist incident resulted in 1200 hostages, 338 deaths (half of them children), and the school building being destroyed (Classes, 2004, September 16). Beyond the academic environmental issues raised in this paper due to the SRO's presence, the question of the SRO's role or benefit within a terrorist scenario is a legitimate one for further additional debate. SRO Evaluation Number 25 (Appendix C) was conducted prior to the incident at Beslan, Russia (Lively and Barnes, 2004, September 11). Contracted by the National Association of School Resource Officers (NASRO) at their annual conference in July, 2002, the survey specifically addressed this issue of school terrorist event preparation. In that evaluation, 95 percent of the SROs responding felt that their schools were then vulnerable to a terrorist attack (Trump, 2002).

Knowledge of good research elements can add additional substance in considering the significance of and weight given to the evaluative evidence exhibited in these 28 studies. Some research elements are presented below with statements and questions that can allow a reader to discern good research from mediocre research activities. These studies would require a meta-analysis of these evaluations to discern any impacts. Only an appreciation of the research to date and planned research in the future is intended here. The listing itself is of some value. Since widespread SRO implementations are a relatively recent activity, most of the SRO research efforts are also fairly recent. The five research elements suggested by the CSR guidance document were applied to the twenty eight completed and five pending SRO evaluations listed in Appendix B and reviewed in Appendix C. These elements are described below.

1. Research Design:

Does the study have a straightforward research design which tends to optimize the research questions and answers? Are the subjects selected randomly or are their similar characteristics isolated (or controlled for) as much as appropriate or possible? Are statistical controls used to assist in controlling? Are empirical data used and does the research propose a strong theoretical operational or behavioral base that supports the findings? Were all potential students and schools included in the research effort? Were the data obtained using observation, survey, objective measures, or experimentation? Does the researcher or research organization exhibit a vested interest in the research results one way or another?

2. Research Data Collection:

The research should be performed systematically and use empirical data. Any research results need to be supported by those data. The data should come from multiple sources. The researcher should not attempt to support findings through the use of speculation, conjecture, or personal opinions. The findings should be supported by the presented data. Reliability and validity issues with the data should be addressed. Data collection may often skew the results if not done correctly.

3. Data Analysis:

Rigorous data analysis is a necessary element in good research. High quality data lose their significance if the analyses are not appropriate to the task at hand. The research hypotheses or research questions should be addressed through data comparisons. The study findings should be supported by these statistical tests. The sample sizes should be appropriate and the statistical testing, whether supportive or rejective of the hypotheses, should reflect the gathered information. Enough information should be provided such that other researchers are able to replicate the study results and/or constructively criticize the study findings or methodology. This should be performed through a peer review process if possible.

4. Significance of Results:

“Significance” is both an evaluative qualitative term and a statistical term. Just because an outcome is statistically significant does not mean that the outcome is educationally important or even relevant. Statistical significance should be specified in the research design and determined to assure that the stated outcome did not occur with some confidence due to chance. Practical significance suggests that the measured educational outcomes should be large enough to be of some practical value to the educator. Effect sizes should be stated, if appropriate, and explained as part of the research findings.

5. Research Bias:

Research bias can take many forms. The data gathering process, for example, should be objective. For instance, the following questions deal with a phone survey design. A phone survey may not be totally objective as only the people who have a phone may respond. An urban phone sample may survey a more liberal rather than conservative sample of responders. Any phone survey will only survey those respondents willing to stay on the phone to answer the questions. A daytime survey may exclude male workers. A survey late at night may exclude workers who have to get up early each day or are employed. With regard to the SRO evaluations, some of the surveys were answered by SROs at SRO conventions. SROs as a group have tended to answer questions in a way that served to continue the SRO concept by portraying an SRO's impact in a favorable light . The potential for this type of bias should be recognized by most

readers. Selectivity bias can occur simply due to the sample selected for the research. Church schools with added security may exhibit lower levels of disciplinary problems anyway due to the nature of the school and students. An inner city school with the same level of security added may still have a higher level of comparative behavioral problems. School populations, if used, should, in fact, be comparable as much as possible. Other biases may also exist.

The reviewed SRO evaluations that are discussed in Appendix C offered a complete summary to date of the SRO research that had been performed, is currently in progress, or is planned. It was clear from the descriptive reviews that when an SRO evaluation requirement was coupled with an SRO implementation, stronger and more meaningful results on SRO effectiveness were presented. The recent emphases on more scientific research techniques within the federal No Child Left Behind (NCLB) requirements need to be applied to future SRO program evaluations. The wealth of data incumbent with NCLB, including the "Persistently Dangerous" school labeling and reporting requirements, will provide better (more reliable and valid) comparative data with which to evaluate future SRO programmatic impacts..

D. Review of Environmental Evaluations:

A relationship has been suggested between a student's learning environment and student learning success. The purpose of this environmental section is to suggest that this type of relationship may exist in several areas of the classroom environment. If it does, it may also extend to additional positive effects on the learning environment

provided by the presence of a School Resource Officer. These other effects are, school discipline, teacher quality, student peer factor effects, dress codes, other learning climate factors, and student behavior. Again the intent of this section is not to show causality or relationship, but simply to suggest that the potential for relationship may exist. More research with an experimental design on these independent variables would be required to establish any causality. The increased data provided by the federal No Child Left Behind (NCLB) requirements should better support any future research efforts.

1. School Discipline:

When one discusses effects influencing achievement in school, the subject of school discipline inevitably is considered a primary factor. As educators will say, if classroom decorum is not conducive to learning or, worse, if students are in fear of their personal safety, it is difficult for any learning to occur. The relationship between positive environmental factors and schoolroom learning was always assumed and may seem obvious to educators. Fundamental factors like being warm and dry, sufficient materials, sufficient nutrition, and other environmental factors have driven school policy implementations. School lunch programs, school construction, teacher quality, student dress codes, small school and classroom sizes, and strict disciplinary policies were seen to support a learning environment. The research tie between these factors and student achievement, however, was not well shown as some of these effects seemed obvious. Also, the difficulty of performing experimental research on these factors because of the requirements of random assignment has and continues to be a problem.

Because of decreases in student performances on standardized tests coupled with increases in bad behavior during the 1990s, a study was performed to demonstrate if a linkage existed between student discipline and achievement. A 1998 study, by Paul Barton, Harold Wenglinsky, and Richard Coley, demonstrated an inverse relationship between student achievement on standardized test scores and increasing school disorder (1998). As disorder increased, test scores decreased. This report used National Household Education Survey 1988 data (NELS: 88) of 13,000 eighth graders from 1998 through 1990 and 1992. Titled "Order in the Classroom: Violence, Discipline, and Student Achievement," their report used the scores on the National Assessment of Educational Progress (NAEP) as the achievement measure. This report was an early effort to statistically link disciplinary climate in a school to a student achievement testing measure. It showed, in a quantitative manner through multivariate analyses, that test scores went up when the student's disciplinary climate improved (Portner, 1998, June 17). In testimony before the Congressional Subcommittee on Early Childhood, Youth, and Families hearing on school discipline in March, 1999, Dr. Wenglinsky stated that high levels of student misconduct were negatively impacting student learning potential in the nation's schools (Wenglinsky, March, 1999).

Classroom disciplinary problems which were increasing from 1988 to 1995 were negatively affecting teacher retention. Another study indicated that in the 1998-1999 school year, nine percent of teachers stated that student disciplinary problems caused them to leave the profession. By 1994-1995, this percentage had increased to eighteen percent (Barton, 2000). In a May, 2004 report, Public Agenda indicated that fully one third of teachers have considered quitting

because of classroom discipline issues (Vogel, 2004). In Tennessee, during the 1999-00 school year, 2.6 percent of public school teachers reported being physically attacked while 41.9 percent indicated that student misbehavior interfered with their teaching (DOE, NCES 2002-313, May, 2002).

In response to the increasingly bad behavior in schools, state and federal governments began in the 1990s to enact laws to seriously address student disciplinary issues (Barton, 2000). In 1995, Texas and West Virginia passed "Zero Tolerance" laws which specified the disruptive student behaviors which required suspensions and/or expulsions for certain behavioral issues. Surveys of West Virginia teachers by the American Federation of Teachers in 1994 and again in 1997 demonstrated the law's impact. Teacher satisfaction with disciplinary policies increased from seven percent to seventy one percent. Weapons incidents, teacher assaults, and threats of violence were down markedly (Barton, 2000). The perceived SRO presence at a school may be a stronger factor than actual SRO presence in fostering an improved behavioral environment. In Nashville, Tennessee, 2003 survey results by the Metro Nashville Education Association of 3,898 teachers showed that only 5.1 percent felt that their SROs provided a visible presence (Nashville Public Schools, July, 2003). Nashville has SROs assigned to all their middle and high schools so this low percentage was surprising (Long, 2004, August 16). This is the "perception is reality" argument. In Hamilton County's most serious teacher assault incident, a middle school teacher was beaten with a hammer in front of her class by an estranged husband, ironically, on the day of the month the assigned SRO was appearing in court (Cook, 2001, September 27). The perception of SRO physical presence may be a factor in establishing a safe climate.

Character education initiatives, school police presences, school behavior codes, conflict resolution processes, the establishment of alternative schools, and increases in school overall security measures all have served to improve student behavior within the schools. The seeming increases in nationally reported incidents of random school shootings served to focus the public and, through their increasing concern, the political forces mobilized action on school safety environmental issues and their potential negative affects on student learning (Barton, 2000).

2. Teacher Quality:

Teacher quality, like classroom discipline, is one of those factors that one intuitively feels is entwined with student learning, however, little research has actually shown a relationship to exist until recently. The reasons were the usual ones on the difficulty of structuring research designs with random assignment of students and controlling for the confounding factors in order to establish a relationship. Harold Weglinsky, in a recent study entitled "How Teaching Matters: Bringing the Classroom Back into Discussions of Teacher Quality" showed that teachers who majored in their taught subjects produced students who scored higher on test scores than students whose teachers did not major in those subjects (Weglinsky, 2000). Weglinsky compared teachers who had taken the Praxis II license exams with their students who had taken the eighth grade National Assessment of Educational Progress (NAEP) examinations in science and math. Weglinsky found that the test scores on tests were higher for students with the more qualified teachers (Weglinsky, 2000). Again, causality could not be

shown as many other student factors may have intervened. Michael Podgursky, in a critique of Weglinsky's study, discussed the weaknesses of NAEP race and socio-economic data, lack of random assignment of teachers, and the further lack of longitudinal student data (2001). An American Institute of Research study has shown statistically significant improvements in eighth grade math scores with teachers who are certified, experienced, or have math majors (Greenberg, Rhodes, Ye, and Stancavage, 2004). Other recent examples of certified teacher successes have been documented (Viadero, 2004, April 28). Good teachers intuitively probably produce better students, but, like SRO efficacy, it remains to be shown through stronger research designs. Teachers are becoming more accountable for the performance of their students under the NCLB requirements. Tennessee, for example, now rates its teachers on the most recent three years of test score gains of their students through its value added assessment system (Tennessean, March 16, 2004).

3. Class Size:

Class size reductions to enhance student achievement have been proposed over the years as budgetary pressures push class sizes upward and the demands for improved test scores and student achievement increase pressure for smaller class sizes. In 1979, Glass and Smith produced a meta-analysis that concluded that reduced class sizes (less than twenty) improved student performance (1979). Perhaps the most influential class size reduction experiment was Tennessee's Student-Teacher Achievement Ratio (STAR) study which began in 1985. In the STAR study, researchers tracked 6500 students in seventy

nine schools from kindergarten through third grade. These students were randomly assigned to either a small class with about 15 students, a regular class with about 25 students, or a regular class with a student aide assigned. The students in the smaller classes did significantly better on standardized tests and had fewer disciplinary problems than others (Mosteller, 1995). These benefits, documented in the "Lasting Benefits Study" begun in 1989, persisted through ninth grade in some students when returned to regular classes.

Another meta-analysis of nine class size studies, including the Tennessee STAR study, was completed in 2002. This study showed positive achievement effect sizes for smaller classes in seven of those studies (Goldstein and Yang, 2002).

Smaller class size environments appeared to positively influence learning. Approximately forty states have enacted or are considering class size reduction legislation (Sack, 2002, February 27).

4. Peer Effects:

Recently, the San Francisco based research organization Public Policy Institute of California (PPIC) completed a study in the San Diego public school system which examined several school learning environmental effects (Betts, 2003). Researchers followed the academic progress of 141,000 students over a three year interval from 1997 through 2000, looking at K-12 student performance while controlling for several variables. The research by PPIC found that peer effects had more impact than teacher qualifications on standardized reading and mathematics examinations. Other effects, such as teacher advanced degree

attainment, had more impact on test scores in middle or high school than in the lower grades. It appears that environmental effects can be more complicated than originally thought (Viadero, 2003, September 10). PPIC, using individualized student data rather than class level data, found that students made greater score improvements when the other students in the class began with higher initial exam scores. Also, students who changed from a lower achieving peer group to a higher one experienced a nine percent test score gain. This effect was stronger in the lower grades which experienced less class switching during an academic year. PPIC concluded that cohort influences were quite strong on individual student achievement and needed further study. Interestingly, California initiated an expensive program to reduce class size to twenty or fewer in classes K-3, but the PPIC results show that this effort produced positive results in reading, but not in math. Class sizes had no effect in the higher grades (Betts, 2003).

5. Dress Codes:

School dress codes and uniforms have gone both ways in the environmental performance discussion. Some say that the reduced distractions resulting from standardized clothing rules or outright uniforms resulted in students who were more focused on academics and better behaved. Gang colors with individualized clothing may be a factor. Others have indicated that these measures may appear to be effective and have been substantiated through limited research (Portner, 1996, February 14).

The Long Beach, California School District mandated school uniforms in K-8 schools in 1994. In the years following the change through 1997, school crime

has dropped 76 percent and school attendance reached new highs (Portner, 1998, January 22). Since then, Long Beach has expanded its dress policy to high schools. The students perceive that adult expectations of them are higher with a dress code in place. In response to Long Beach's success and with major problems with its own school discipline issues, the city of Philadelphia began instituting a similar policy in the 2001-2002 school year (Johnson, 2000, May 17).

Dress codes and their relationship to positive learning environments continue to be researched. Intuitively, standardized dress should be conducive to a better learning climate with its reduced distractions, but this has yet to be shown conclusively. The most recent research on student dress codes claimed that uniforms not only improved school safety and classroom behavior, but may increase student test scores and grades (Joftis and Lesser, 2004). Further review of the Joftis research revealed that it was based on survey responses and funded by a school uniform manufacturer. In Hamilton County, thirteen of the twenty middle schools and seven of the thirteen high schools had established dress codes as of the 2003-2004 school year (Carroll, 2003, August 18).

6. Learning Climate:

The research question for this study was designed to determine if the presence of an SRO establishes a sufficiently safe learning environment such that it may be seen in selected outcome measures. Other course participation factors may come into play. A study by the Southern Regional Education Board (SREB) collected eighth grade student achievement data on 3,098 students from the 2000–2001 school year. SREB then coupled those results with college prep

course results from the same students in their ninth grade a year later. What they found was that there was a success relationship between students who took algebra in the eighth grade and then took college prep classes in high schools. The students were more likely to succeed at college prep classes in high school if they had taken eighth grade algebra (SREB Research Brief, 2002). The implication was that if students are exposed to more rigorous courses, their success in later, more advanced courses was improved. A challenging learning environment served to improve student performance. The implication is that a safer learning environment may also improve student performance.

A recent Hamilton County School District school survey issued to parents and others in September, 2003 addressed this issue of a challenging curriculum. The survey process was initiated by local educators to illicit community input into the strategic priorities to be taken by the district in the future. Of 2,500 teacher and 3,800 parental responses, having a “challenging curriculum” ranked as the highest priority from both groups (Newmyer, 2003, December 25).

7. Student Behavior:

Student behavioral impacts on student achievement through learning environmental effects have not been well studied or reported. Obviously, if the learning landscape is chaotic with students overly concerned about their personal safety, significant learning becomes a difficult proposition. Showing an existence of this relationship through rigorous research may be just as difficult as an experimental research design with random assignment would be difficult to

administer. Several items in the literature do indicate, however, that a relationship could exist, mostly through survey and anecdotal evidence.

The U.S. Department of Education surveyed 1,234 public schools during the 1996-1997 school year. The schools represented all 50 states and concentrated on serious violent crime. This type of crime directly relates to the safety of children at school and included suicide, rape, sexual battery, robbery, physical attacks, or fights using some sort of weapon (DOE, NCES 98-030, March, 1998). The study found that the larger and more urban schools had higher rates of serious violent crime. It also found that seventy eight percent of schools at that time had no police presence established and the same percentage were implementing programs to reduce or prevent violence. Public Agenda, a New York research organization, referenced 1998 survey data which indicated (prior to Columbine) over two-thirds of the public felt that order and discipline in the public schools was a serious problem (Johnson and Duffett, 1999). A Canadian study conducted in the spring of 2000 addressed the issue of student feelings of safety and student academic performance. The New Brunswick Department of Education surveyed students, teachers, and a random sample of parents (K-12) and found that a safe learning environment was the best correlate to student achievement (Grobe, 2001). A qualitative dissertation found that students were more comfortable in schools where security measures were employed, especially the School Resource Officer when the SRO related to those students (Stukar, 2002). Finally, the recent 2000 NCES School Survey on Crime and Safety indicated that schools with larger percentages of students scoring low on standardized tests had more violent incidents. Also, the percentage of students

and teachers who considered academics important was inversely related to the prevalence of violent student incidents (DOE, NCES 2004-610, August, 2004).

An article in the *Christian Science Monitor* discussed a 1999 survey of public school students by the Horatio Alger Association, indicating that forty-three percent of teenagers stated that the misbehavior of other students was hurting their classroom learning. The same study found that eighty-three percent of teachers and administrators stated that failure to manage classroom behavior was the most significant impediment to new teacher success in the classroom (Coeyman, 2002, October 8). Clearly, student behavior in the classroom appeared to impact both the teaching and learning environments.

8. Other Factors:

An American Legislative Exchange Council report released in November, 2003 indicated that if a district spends more money on education, test scores will improve (ALEC, 2003). A Health Canada Report released in June, 2004 correlated smoking with academic performance in middle school. The fall 2002 data indicate that twenty-eight percent of those who smoked stated they were doing poorly in school while only six percent of the nonsmoking students provided the same response (Hurst, 2004, June 23).

Another report by WestEd Research linked student health and well-being with student academic achievement. WestEd coupled the California Healthy Kids Survey, administered by the California Department of Education (CDE), with 1998–2002 standardized test scores of students in grades 5, 7, 9, and 11 in over 1700 schools. What they found was that healthier students in terms of substance

abuse, exposure to violence, exercise, nutrition, and overall school climate scored significantly better on standardized tests (Austin, 2003). California uses the Academic Performance Index (API) to measure school level performance. API is a school level measure for school performance based on student scores on achievement tests. Scores in 1998-2002 on the Stanford 9 Achievement Tests in Reading, Language and Mathematics showed that score increases were lower in schools with lower proportions of students who felt safe at school. This was true for both high and low overall performing schools (Hanson and Austin, 2003).

Certainly, other factors may be in play concerning impacts and influences on student performance levels on standardized tests.

9. Summary Environmental Comments:

The No Child Left Behind (NCLB) Act provided for the designation of “persistently dangerous” schools if these schools met certain adverse conditions indicated by their respective states. Students who are enrolled in schools that are designated persistently dangerous or are the victims of a violent crime while at school have the option to transfer to another school (ESEA, Title IX). It is clear that the intent of the NCLB Act was to address this issue of school violence on the learning environment, measure it, and provide for alternatives if the violence levels exceeded state determined levels. The information discussed in this section suggests that environmental factors may influence student learning, but to demonstrate a causal link is difficult.

School disciplinary issues continue to be of interest to the public. Recent surveys by Phi Delta Kappa and the Gallup polling organizations indicated that

eighty-four percent of respondents felt that a lack of discipline in the schools was an impediment to learning and this problem was the second leading category stated for the biggest problem schools now face (Rose and Gallup, 2003). School discipline will continue as an issue related to learning environments as will the other mentioned factors for years to come. The profusion of data that will be provided by NCLB reporting requirements will aid further research with valid and reliable information at the school, system, and state levels. A recent working paper indicated, however, that better overall school and home environments may not make all that much difference in student behavior. A comparison of the sexual proclivities, drug and gang involvement, and other various forms of delinquency between urban and suburban public high schools demonstrated that both types of students were engaging in aberrant behaviors about equally (Greene and Forster, January, 2004).

E. Zero Tolerance:

Zero tolerance as a disciplinary concept began in the late 1980s as recourse to disallowed behaviors related to drug trafficking and violence in schools. A form of mandatory sentencing for behaviors, the purpose was to indicate that certain student activities would not be tolerated and all offenses would be dealt with harshly, usually through suspension or expulsion from school. School districts in California, New York, and Kentucky required expulsion for drugs, fighting, and gang activity (Skiba, 2000). The concept expanded when the Gun Free Schools Amendment to the Elementary and Secondary Education Act was enacted on March 31, 1994. This legislation required all school districts to have policies that would expel a student who brings a gun to school for

a minimum of one calendar year or jeopardize its federal funding (NASBE, 1994). This legislation provided a template for how to deal with violent or drug related activities in the future. This get tough approach was popular with the public and zero tolerance remedies were broadened to include even some activities outside of the schools (Skiba, 2000). The Columbine School tragedy in 1999 accelerated this trend.

Simply put, zero tolerance became a policy that mandated certain punishment consequences, determined in advance, for stated prohibited offenses, regardless of the severity. Sometimes, the authorities could exercise a limited degree of discretion and modify consequences, but usually authorities did not have much latitude. As zero tolerance concepts expanded, newspaper accounts of enforcement excesses abounded as the extreme cases periodically would come to the public's attention. These increasingly expansive definitions of zero tolerance offences resulted in more and more suspensions and expulsions for more trivial actions. The few studies that have addressed whether these policies have actually increased school safety have indicated that no safety benefit has been indicated (DOE, NCES 98-030, March, 1998). The increases in suspensions and expulsions because of these policies may have also created additional problems of racial balance in application (Skiba and Peterson, 1999). Higher dropout rates proceeding from higher expulsion rates may result in higher juvenile crime rates (Civil Rights Project, 2000). Some districts have reversed zero tolerance policies to adopt graduated disciplinary systems that provide more severe consequences for more severe offences. Clearwater High School in Florida has reduced its suspension rate by 65 percent over the last four years while reducing its dropout rate, reducing its frequency of classroom disruptions, and increasing test scores with a more lenient tolerance policy (USA Today, January 2, 2004).

Tennessee's experience with zero tolerance began with the codification of the 1994 Gun Free Schools Act into Tennessee Statute 49-6-3401(g) in 1995. In 1996, two additional requirements were enacted for local school boards to have appropriate procedures and punishments for students who bring weapons or drugs to school or engage in any assaults. Tennessee also allowed the superintendents in its districts to modify expulsions on a case-by-case basis (Tennessee Comptroller Report, 1998). This discretion by superintendents resulted in a wide variance in the application of zero tolerance laws in the state. The number of expulsions went from 552 in 1993-94 to 2,365 in 1996-97 (Tennessee Comptroller Report, 1998). The Tennessee report on zero tolerance issued in 2003 indicated that expulsions increased almost eleven percent from 3,651 in 1999-2000 to 4,047 in 2001-2002 while enrollments remained essentially constant. Hamilton County ranked second in the state with 7.6 violations per 1000 students. The Tennessee Department of Education began tracking these numbers in 1999. Most of the offenses were for drug violations and committed by primarily male eighth graders (Tennessee Comptroller Report, 2003). The number of reported suspension and expulsion zero tolerance incidents in the state did plateau, however, to 4,035 in the 2002-2003 school year (Nashville Tennessean, September 4, 2003). Nationally, expulsions continued to rise. Between 1998 and 2000, expulsions increased from 87,298 to 97,177 by DOE data (Macrae, 2004, September 14). Tennessee districts had the option to make their policies harsher than the state requirements. Several did including Knox County (Knoxville). When a Knoxville high school student, who was expelled because a friend left a knife in his car, committed suicide, the U.S. Circuit Court of Appeals ruled that school district policies were "irrational" (Black, 2004, September).

The zero tolerance policies and their implementation determine the data feed for the suspension and expulsion number reporting schemes. These reporting systems could be

used for comparisons of school zero tolerance policy effects on school discipline outcomes. The validity of these results has been questioned by the Tennessee State Comptroller. He indicated that if zero tolerance was, in fact, working, the yearly totals would be decreasing instead of increasing (Comptroller, September 4, 2003). The most recent Youth Risk Behavior Survey (YRBS), released in May, 2004, indicated that 2.4 million students carried a weapon to school in 2003 and this was an increase over the 2001 level even with all the zero tolerance policies in effect (YRBS, May, 2004). The Centers for Disease Control (CDC) reported that students indicating that they had carried a weapon to school decreased from 11.8 percent in 1993 to 6 percent in 2003 (Truancy, 2004, July 30). It is still not clear whether these zero tolerance policies are actually working from these data. The summative zero tolerance infraction results at the school level determine whether a school is considered "persistently dangerous" as defined under the No Child Left Behind legislation enacted in 2002.

F. Persistently Dangerous:

The No Child Left Behind Act of 2002 requires respective state education agencies to establish school choice policies for students who are determined to be attending a "persistently dangerous" school. The definition of what constitutes a persistently dangerous school was left to the individual states. The law also required that if a student is the victim of a violent criminal offense as determined by state law, that the student be afforded the opportunity to attend a safe school within their district. The states were to identify what persistently dangerous means, the types of offenses that qualify as violent criminal offenses, and provide the safe school option under the NCLB Act. The details of

the NCLB Elementary and Secondary Education Act, Title IX, Part E, Subpart 2, Section 9532, Unsafe School Choice Option are provided in Appendix H.1.

The purpose of including this accountability, tracking, and options within the NCLB Act appears to be an attempt to assure that a learning opportunity, through a positive learning environment, is afforded to all students. If a student is in a persistently dangerous school or that student has been the victim of a violent assault, effective learning may not occur. It is important to indicate that the exercise of either of the two unsafe school options (unsafe school or individual assault) requiring transfer of the student is at the student's choice. The student victim transfers (which also include behavior on school buses) must be performed within 10 days if requested (Riley, 2003, October 28). The transfer policies apply to grades one through twelve and went into effect for student transfers in the 2003-2004 school year (Riley, 2003, August 10).

Tennessee's State Board of Education defined its "persistently dangerous" schools as schools that meet the following criteria (ECS, 2003):

1. Have any violence-related disciplinary actions as reported on the Annual Report of Zero Tolerance Offenses occurred? These actions are possession or use of a firearm or other designated weapon, or the battery of a teacher, School Resource Officer, or school employee; or
2. Have students been victims of a violent crime as defined by the Tennessee Code Annotated (TCA 40-38-111g); and,
3. Are the sum of items in 1 and 2 above equal to or greater than 3 percent of the school's average daily attendance.

If the above condition number 3 exists for one year, the school will be notified. If the above condition continues for a second year, the school must evaluate its safety practices and submit a corrective action plan. A third year requires the Tennessee

Department of Education to designate the school as “persistently dangerous,” notify parents, and submit a second corrective action plan. One normal year of data will drop the persistently dangerous designation. The victim transfer protocol is effective immediately. The Tennessee State Board of Education adopted this policy at their August 23, 2003 Board Meeting (ECS, 2003). The ESEA Part 9552 text and the complete Tennessee Unsafe School Choice Policy are provided in Appendices H.1 and H.2. Within the NCLB Act, this option is called the “Unsafe School Choice Option.” States must certify to the DOE Secretary that they are in compliance with Section 9532 of the ESEA in order to receive their federal funding. For comparison, an analysis of forty-three states that had proposed or adopted unsafe school choice policies as of August, 2003, indicated that more than half used the three years above the three percent percentage total of the school population that Tennessee had adopted for its persistently dangerous designation. But less than one fifth of the states had used Tennessee’s relatively high three percent of the school’s average daily attendance population criteria itself (ECS, 2003).

The states were to report which schools were persistently dangerous by the beginning of the 2003-2004 school year so that students would have the opportunity to transfer if they desired. The reality was that there were only fifty-four schools of the approximately 91,000 public schools in the nation that were so designated and twenty-seven of those were in the Philadelphia, PA City School District. Tennessee was one of forty four states and the District of Columbia that had no dangerous schools designated (Robelen, 2003, September 24). Of the six states that had dangerous schools, three re-evaluated their schools and determined that they actually had none. Texas and Nevada reported no dangerous schools. The list of schools subsequently dropped to thirty-eight schools in only four states for the 2003-2004 school year (Robelen, 2003, October 22).

Two of the dangerous schools were in Brooklyn, New York and they came off the list as New York recently reported that there were no persistently dangerous schools left in that state for the 2004-2005 school year (Spicuzza, September 10). Obviously, when the states were left on their own to designate dangerous schools and explain to the public why they had them, it became quite difficult to be designated as "dangerous" in most of these states. Overly optimistic and rosy information about school safety does not really help anyone. A federal request for the states to review their dangerous school criteria with revised federal guidance has been sent out (Rodriguez, 2004, June 3). The revised guidance requests ask for parental involvement in determining what measures are included in determining the persistently dangerous criteria. The law does not give the federal authorities any control over any revised criteria (Education Week, June 9, 2004).

The reason that this issue of establishing and reporting on violence related student activities was important is that it highlights the validity problems possible with zero tolerance or any revised data measures that are utilized. A school may underreport incidents to avoid the negative issues associated with a persistently dangerous designation in the public arena. Gwinnett County, Georgia for example, discovered it had failed to report eighty-five percent of its 23,000 discipline incidents in the 2001-2002 school year as required by state law. The failure to report these incidents was uncovered and pursued by the local media (Blair, 2003, June 11). Georgia recently reported no persistently dangerous schools for the second straight year (No, 2004, August 5).

The 2002 NASRO Survey of School Resource Officers reported that eighty-nine percent of the SROs indicated that school crimes are being underreported (Paul, 2003, August 20). The validity and reliability of this zero tolerance based data will remain suspect until a consistent federal definition, similar to the FBI UCR data, is adopted for persistently dangerous schools nationwide. The DOE director of the national Safe and

Drug-Free Schools Program indicated that national persistently dangerous definitions for consistent reporting among the states are forthcoming (DODD, 2004, July 5). The system now encourages underreporting and punishes the honest administrator who has to deal with both the problems and their reporting. Calls for the appropriate validity and reliability of graduation rate data reported to the government under NCLB have already been made and the U.S. Secretary of Education has convened an expert panel to investigate these issues (Swanson, 2004, July 28). There was some indication the intent of the NCLB safe school option is having some early impact. Maryland recently placed sixteen Baltimore schools on probation for high rates of violence (Loh, 2004, August 25).

G. Data Quality Issues:

Over the last several years, the Houston Independent School District (HISD) has experienced significant data problems in both graduation rate and school violence reporting (Rees, 2004, March 3). Houston's Sharpstown High School was reporting zero dropouts in the 2001-2002 school year while 30 to 40 percent of its ninth graders enrolled four years earlier were not graduating (Zuniga, J. A. (2004, March 2). The dropout reporting problem appeared to be at its worst just prior to a "snapshot day" at the end of October when the state counted the district students in order to allocate the district funding. This amounted to thousands of dollars per student counted and was probably a motive in the undercounts (Dillon, 2004, November 7). A Manhattan Institute research report using the ninth grade enrollment accounting method and federal data indicated that only 70 percent of public high school students actually graduate. The rate for Tennessee was 60 percent, placing it fourth from the bottom nationally (Greene and

Forster, September, 2003). Tennessee's and the HCSD 2003 reported rates were seventy-six and sixty-nine percent respectively on the state's Department of Education website. To increase its graduation success, the HCSD established an adult high school. The school assists the approximately 1000 students a year who will dropout to stay in school (Carroll, 2004, September 20).

Tennessee's revised methodology, to be used until its SSMS system is implemented (which will track every individual student), will be to compare the number of ninth graders entering high school with those who graduate four years later as recommended in the Greene report (Riley, 2003, October 30). The HCSD recently calculated its 2004 graduation rate by this method and it was only sixty percent (Carroll, 2004, June 16). Graduation data based decisions, like others under NCLB, can be appealed if a school is placed on a target list for not meeting some NCLB requirements. The HCSD recently won NCLB graduation rate appeals under the sixty percent criteria on two of its high schools and lost five others (Two, 2004, September 22). Tennessee has established an ambitious new goal of a 90 percent graduation rate (Education, 2004, June 28).

The 2001-2002 zero dropout number for Sharpstown High School was actually 2,999 dropouts as determined by a Texas Education Agency investigation. The Assistant Principal who reported the HISD dropout anomalies was demoted and transferred to an office the size of a closet (Casey, 2004, June 5). He recently settled a lawsuit with the HISD (Spencer, 2004, June 8). His whistle blowing activities has forever set him apart within the educational community. He has become an educational consultant and is writing a book on his ordeal (Jesness, 2004). This "cooking the books" mentality by HISD administrators on graduation data and intimidation of persons reporting problems with data validity have also carried over into the student violence reporting arena. HISD teachers accused their administrators of not enforcing discipline policies and not

reporting many of the physical and verbal assaults experienced by the teachers. The HISD underreporting of dropout and violence data has been widely reported nationally. Additionally, problems with grade tampering by an HISD high school principal to make his school look good have recently been uncovered (Zuniga, 2004, October 27). The HISD is the largest school district in Texas and the previous superintendent is the current U.S. Secretary of Education, Rodney Paige (Spencer, 2004, June 11).

The HISD teachers reported in a survey that seventy-four percent of them had been verbally abused and fifteen percent physically assaulted, much of it not reported to authorities (Spencer, 2004, March 4). A resultant consequence of this situation was that another teacher survey has showed that nearly half (forty-five percent) of Texas teachers want to quit and nearly two thirds of them (fifty-eight percent) are citing student discipline issues as the primary reason (Nearly, 2004, April 25). Student discipline issues were cited as the reason a Philadelphia high school computer teacher recruited from industry recently left after only two and a half days on the job (Cech, May, 2004).

Recent data disparities between the HISD and the much smaller Katy Independent School District (KISD) showcased the violence data discrepancies that can occur. Katy is a western suburb of Houston with twenty percent of the HISD enrollment. During the 2003-2004 school year through April, the KISD ticketed or arrested one in nine students while the HISD rate was only one in sixty eight students (Graves, 2004, April 18). Does this mean that Katy schools were more dangerous than Houston schools? Probably not, but this rate comparison example highlights the problems with school violence data and differing school district enforcement protocols.

The National Center for Education Statistics indicated that in the 1999-2000 school year, 1.5 million violent incidents occurred in the public schools and, of that number, only 257,000 were reported to the police (DOE, NCES 2004-370, March, 2004). With this

level of reporting (seventeen percent) and so much riding on school disciplinary data levels for the NCLB criteria, it would appear that the validity and reliability of disciplinary data may remain suspect into the future.

The school transfers and tutoring required within the NCLB legislation for persistently dangerous and academically failing schools rely on the discipline and test data provided by the districts through the required NCLB reporting discussed in this research.

Nationally in 2003, suburban districts reported that 21 percent had schools needing improvement while urban systems had 50 percent in this category. This past year (2003-2004) only two percent of transfer eligible students had actually transferred from academically failing schools (Jennings and Hamilton, 2004). A survey of forty one urban school systems found that the number transferring the 2003-2004 school year increased three times from the previous 2002-2003 school year to about 18,000. The number requesting transfers were 44,000, but more than half were turned down for various reasons (Robelen, 2004, January 21). In New York City, there were 1800 transfers for the 2003-2004 school year because students feared for their safety. These students utilized the safe school option of NCLB and transferred prior to the start of classes (Katz, 2004, January 22).

Currently a 46 million dollar national project called the "School Information Partnership" is underway to improve collection and reporting of NCLB data down to the school level. This partnership between the DOE, the Broad Foundation, Just for Kids, and Standard and Poors School Evaluation Services was formed to help with NCLB reporting and better informing parents of schools performance (Kafer, 2004, September 1).

As a result of NCLB reported data, 484 Hamilton County students chose transfers this past school year (2003-2004) while another 450 students choose the tutoring option

based on the NCLB failing schools designations (Carroll and Baydala, 2004, January 22). Those 484 students represented only 14.4 percent of the students that were eligible for transfer. Of the nearly 4,000 students eligible to transfer in the 2004-2005 school year, only 130 have signed up due mainly to late parental notifications (Carroll, 2004, August 31). For comparison, the national transfer rate was only 6.2 percent of those eligible for the 2003-2004 school year (Hoff, 2004, May 19). No persistently dangerous schools were identified in Tennessee as discussed earlier, so there were no transfers under the safe school option.

The point is that these data needed to be valid for the important NCLB student and school consequences that were depending on these data inputs. The students who do not make adequate yearly progress were to be able to take advantage of better schools through the transfer option. As a matter of interest, recent research in Chicago has indicated that the students who transferred to better schools for the 2002-2003 school year did show marked gains in their math and reading test scores after arriving in their new schools. This was a positive indication for the NCLB transfer policy (Rossi, 2004, April 25). The study, however, only looked at twenty-six percent of the 1100 students who transferred and there were no control groups used (Robelen, 2004, May 5). A downside to the emerging NCLB based transfer data was that, since all students are eligible to transfer, the better students may be transferring out of poorly performing schools. Initial data in several Florida counties indicated that the better students are transferring there (Versteeg, 2004, August 27). The same situation has occurred around Washington, DC (Glod, 2004, November 10). This was not the intent of the NCLB legislation.

An interesting development is occurring in the NCLB achievement data measurement arena. States have begun to apply "confidence intervals" in the measurement of their

NCLB testing results to determine whether their average yearly progress was sufficient to meet the state's 2013-2014 goals for student proficiency (Rado and Little, 2003, September 28). A confidence interval is a statistical technique that establishes a band within which one can consider the results valid. Common confidence levels are 99, 95, and 90 percent. The choice varies the range or margin of error of acceptable results, with a higher confidence interval producing a wider range. The range is affected by the number of test scores and their variance. Thirteen states use the 99 percent level which means that the school can be 99 percent sure that the student's true performance level is between the two numbers given. Fourteen states use the narrower 95 percent interval. States can also average two years of data starting with the 2003-2004 results (Rado and Little, 2003, September 28). In Tennessee, 81 percent of schools were able to meet their goals in the 2003-2004 school year. Without the confidence intervals in 2002-2003, only 56 percent met standards (Olsen, 2004, September 8). As to relevance, since the states set the required proficiency score levels for their students, the application of a range of scores to those levels was within their prerogatives. Pennsylvania has recently been criticized for generating "gains" in their proficiency levels by reducing passing scores and applying confidence intervals (Hardy, 2004, October 28). The Hamilton County School District has established a Director of Interventions position to specifically address the schools that have missed these targets (Lott, 2004, September 19).

H. Summary of Applicable Surveys:

National level federal data collection surveys were used throughout this study as sources of information. The most significant of these are described and referenced.

1. Common Core of Data (CCD):

The CCD is the Department of Education's primary database on public elementary and secondary education in the United States. CCD is a comprehensive, annual, national statistical database of information concerning all public elementary and secondary schools (approximately 91,000) and school districts (approximately 16,000), which contains data that are designed to be comparable across all states. The CCD consists of five surveys completed annually by state education departments from their administrative records. Information included are: a general description of schools and school districts, including name, address, and phone number; data on students and staff, including demographics; and fiscal data, including revenues and current expenditures (DOE, NCES 2003-410, July, 2003).

2. Current Population Survey (CPS):

The CPS is a national monthly survey conducted in approximately 50,000 households by the Bureau of the Census for the Bureau of Labor Statistics designed to collect data on labor force participation of the civilian non-institutional population. (It excludes military personnel and inmates of institutions.) In October of each year, questions on school enrollment by grade and other school characteristics are asked about each member of the household (DOE, NCES 2004-77, June, 2004).

3. National Crime Victimization Survey (NCVS):

A national, self-report, household survey conducted by the Bureau of Justice Statistics (BJS) that provides annual estimates of levels and rates of criminal victimization in the United States. Residents of selected households age 12 and older are interviewed about their victimization experiences, including serious violent assaults, rapes, and robberies and whether they reported these crimes to law enforcement officials (DOJ, NCJ 122705, November, 1995).

4. National Household Education Survey (NHES):

The National Household Education Surveys Program (NHES) is a household-based data collection system designed to address a wide range of education related issues. The NHES collects timely data about the educational activities of the U.S. population. NHES surveys have been conducted in 1991, 1993, 1995, 1996, 1999, and 2001. Most NHES surveys have been conducted on a repeating basis to measure the same phenomena at different points in time. The NHES includes surveys on adult education, parent and family involvement in education, before- and after-school programs and activities, civic involvement, early childhood program participation, household library use, school readiness, and school safety and discipline (DOE, NCES 2003-031, May, 2003).

5. School Survey on Crime and Safety (SSOCS):

The School Survey on Crime and Safety (SSOCS) was administered in the spring of 2000 and collected information on crime and safety from school principals in U.S. public schools (DOE & DOJ, NCES 2004-314 & NCJ 201257, October, 2003). After the initial survey, NCES planned to conduct the SSOCS every several years in order to provide continuing updates on crime and safety in U.S. schools. SSOCS 2000 was a nationally representative cross-sectional survey of 2,270 public elementary and secondary schools. The response rate was 70 percent (DOE, NCES 2004-307, November, 2003). Data were collected on such topics as frequency and types of crimes at school, frequency and types of disciplinary actions at school, perceptions of other disciplinary problems, and descriptions of school policies and programs concerning crime and safety.

6. Schools and Staffing Survey (SASS):

The Schools and Staffing Survey collects extensive data on American public and private elementary and secondary schools. Teachers, principals, schools, school districts and library media centers are components of the SASS survey system. SASS provides data on characteristics and qualifications of teachers and principals, teacher hiring practices, professional development, class size and other conditions in schools. SASS data are designed to allow comparisons of public and private schools and staff and permit the analysis of trend data. In addition, SASS data are state-representative for the public sector and affiliation-representative for the private sector. Public schools are also linked to their

respective districts. Public charter schools, their teachers and principals were included in the 1999-2000 administration of the SASS (DOE, NCES 2002-313, May, 2002). The next SASS administration is planned for the 2005-2006 school year (Gewertz, 2002, June 12).

7. Youth Risk Behavior Survey (YRBS):

A national school-based survey conducted biannually by the Centers for Disease Control and Prevention in collaboration with Federal, state, and private-sector partners since 1990. The survey monitors six important health behaviors, including those that may result in violent injuries among both public and private school students in grades 9 to 12 (YRBS, May, 2004).

I. Conclusions:

The review process for this research concentrated primarily on the Internet for two reasons. First, that there was insufficient information from traditional sources on the School Resource Officer topic and further searching did not reveal any additional information. This indicated that the SRO subject was relatively new and the opportunity to fully research this topical area had not yet been availed. Second, because the subject was new and relevant, traditional sources seriously lagged the Internet in the timeliness of information. The topic was obviously quite relevant to educational success in contemporary schools due to the need for a safe school environment to promote learning. The search did provide results on both current completed SRO research and research on environmental effects on student achievement. The Internet search, though

tedious, yielded significant relevant information on research efforts to date. This searching also had the advantage of putting this researcher in contact with many others in the government and academia currently working this topic, providing a good sense of the research “landscape” on this important and relatively little researched subject.

In summary, this research was seminal in the manner in which the issues of SRO effects were approached. The review of the literature indicated that there is probably a connection between the learning environment and student academic achievement. It indicated that classroom discipline issues were important as a learning climate issue with students and as a quality of job issue with teachers. The SRO review conducted in Appendix C indicated that, of the completed SRO studies, few of these evaluations had been set up prior to the SRO implementations and most were some form of survey or qualitative review after the fact. Only a few had any elements of a quantitative evaluation and many could even be considered self serving in that some of the SRO evaluation results tended to support the SRO program's continuation. It was clear from the Federal zero tolerance mandates and the NCLB legislation (officially the ESEA) that there existed a concern at the federal level for dangerous schools, the need for reporting problems, a concern for the perceived negative learning environments of violent schools, and the need for school districts to address these issues programmatically. The comprehensive quantitative evaluation which follows in this research has simply not been performed to date by anyone and directly addresses the achievement and behavioral issues incumbent with an SRO implementation.

CHAPTER III

METHODOLOGY OF THE STUDY

A. Introduction:

The methodological approaches to this study were divided into two sections. The first was the collection and presentation of the data utilized in the study. The second was the use of the descriptive and statistical methods and techniques to analyze the data collected. The collection and manipulation of these data are presented in this chapter.

The data were collected from the Hamilton County Juvenile Court, the Hamilton County School District, the Hamilton County Sheriff's Office, the City of Chattanooga Police Department, and the Tennessee Department of Education for comparison. The SROs from the police departments of Red Bank, Soddy-Daisy, and East Ridge provided data to the Sheriff's Office. Parameters collected for descriptive and statistical comparisons were: juvenile court petition data, school district data, SRO reporting measures, and school level standardized test score and writing test results.

Comparisons considered were: Changes in the number of county juvenile court petitions through the SRO implementation, changes in county school measures through the SRO implementation, changes in SRO reporting measures after the maturation of the SRO presence, and school test score changes with and without an SRO. Additionally, a one year comparison of six middle schools' academic performance with an SRO assigned with six middle schools' academic performance without an SRO assigned was made for the year 2000. In evaluating additional effects, such as low socioeconomic status (SES), city school performance versus county school performance

and high poverty school performance (greater than 40 percent eligible for free or reduced price lunches) with low poverty school performance were compared.

B. Research Questions and Hypotheses:

The four research questions and hypotheses presented in Chapter I are reviewed again for clarity in each section below as the data methodology for each hypothesis is presented.

C. Juvenile Court Petition Methodology:

The research question asked if the Hamilton County Juvenile Court petition measure totals changed since the implementation of the SRO program and a potentially safer educational environment within the Hamilton County Middle and High Schools. Specifically had total Juvenile Court Delinquent Petitions, Unruly Petitions, Truant Petitions, Petitions for Ages 12-14, Petitions for Ages 15-17, Assault Petitions, Drug Petitions, Theft Petitions, Weapons on School Property petitions, and Delinquent petitions by City measure totals associated with Hamilton County middle and high school aged students changed when SRO and non-SRO in place data are compared longitudinally? The Hamilton County Juvenile Court petition data were obtained from the Juvenile Court Administrator for the years 1994 through 2003. The number of petitions by year were further adjusted for population change by using the U.S. Census actual and projected totals for the number of children (under eighteen) in Hamilton County. These data were provided by the Hamilton County Community Research Council (CRC, 2004). A petition rate per 1000 children was then calculated and also compared. Since

the majority of the high school SROs were assigned between 1997 and 1999 and the majority of the middle school SROs were assigned between 1999 and 2000, the hypothesis was that the after SRO assignment year data would show a change from the before SRO assignment year baseline data for the applicable middle and high school age range data indicated. The years 1998 and 2000 were chosen as the average SRO implementation years for the high and middle schools respectively for these before and after data comparisons.

These comparisons were performed for the overall number of petition totals and rates for the various types of petitions indicated. All of these evaluations were descriptive statistics comparisons except for the Weapons on School Property Petitions means for a five year before and after comparison using 1994-1998 versus 1999-2003 data.

D. Hamilton County School District Student Outcomes Methodology:

The research question asked if the student academic or behavioral outcome measures in Hamilton County Middle and High Schools had changed since the SRO Implementations and a potentially safer educational environment within the Hamilton County School District when compared longitudinally (year to year)? The possible outcomes included the results of Scholastic Aptitude Tests (SATs), American College Tests (ACTs), Advanced Placement (AP) exam participation, grade point averages (GPAs), promotion rates, truancy rates, dropout rates, suspension rates, expulsion rates, graduation rates, and any other appropriate school academic and behavioral outcome measures listed in Appendix G that were available.

A comparison of available student outcome measures in SRO and non-SRO middle and high schools within Hamilton County for the school years 1994 through 2003 were to

be made. The comparisons were to be done for the overall totals for the various types of school assessment indicators tabulated, with and without SROs.

E. School Resource Officer Data Methodology:

The merger of the County and City school systems in 1997 resulted in the one school system with the SROs assigned primarily by either the Hamilton County Sheriff's Office (HCSO) or the Chattanooga Police Department (CPD) depending on whether the school was in the county or the city limits respectively. With the merger, the combined school system included 22 high schools and 18 middle schools as indicated in the Appendix A.2 School Data Cut Point data tables.

The SRO data obtained from the Chattanooga Police Department (CPD) were disappointing. The CPD data had many gaps. The 2000 – 2001 school year data were the only full year of complete data obtained from the CPD. Apparently, there was no requirement to track and retain the CPD SRO data. Numerous position changes for the CPD SRO supervisor may have contributed to the lack of SRO archived records.

The Hamilton County Sheriff's Office (HCSO) data beginning in 1996 were well utilized for this research. The SRO had a defined set of indicators to be tracked monthly, reported by the third of the following month, and recorded at the HCSO. Because of that protocol, the HCSO data ranging from 1996 to 2003 were relatively good data with few gaps over the years in question. Annual reports were also compiled summarizing these data. Stability in the SRO Supervisor position contributed to the data reporting consistency.

The research question asked if the SRO implementation and the creation of a potentially safer educational environment affected the number of SRO incident reporting

measures in Hamilton County Middle and High Schools when compared longitudinally year to year or when an SRO had changed. The SRO incident measures included Offense Reports, Consultation Reports, Arrests, Conflict Resolutions, Fights, and Assaults.

The six SRO incident data elements that were used for the analyses were Offense Reports, Consultation Reports, Arrests, Conflict Resolutions, Fights, and Assaults. These were descriptive statistics comparisons and tests of hypotheses were not made.

F. Tennessee Comprehensive Assessment Program Data Methodology:

The research question asked if the student testing outcome measures in Hamilton County Middle and High Schools changed when schools were compared longitudinally year-to-year, with and without an SRO, and between SRO and non SRO schools within the same school year? Test outcome measures included the Writing Assessments, TVAAS Percentile scores, Tennessee Comprehensive Assessment Program (TCAP) average NCE scores in Math, Reading, Science, Language Arts, and Social Studies, and Algebra I NCE scores.

Comparisons of available student testing measures in SRO and non-SRO middle and high schools within Hamilton County for the school years 1994 through 2003 were made. These comparisons were done for the overall totals for the various types of individual school TCAP assessment indicators obtained. The comparisons of these school assessment indicators were done for the longitudinal before and after the SRO presence condition. Comparisons were also made within the same calendar year for the “with” and “without” SRO present condition between multiple schools. These evaluations primarily used the student’s t–test difference of means test.

1. Twelve Middle School SRO Comparisons:

Available measures for each middle school were the TCAP Achievement Test Normal Curve Equivalent (NCE) scores in five subjects for the three grades which were averaged by each year. If the SROs were assigned in the fall of 1999, this approach provided six years of “prior” data and four years of “after” data for the two means to compare. Mean National Percentile (MNP) scores from prior to 1998 were converted to NCE scores for this comparison. If the SRO was assigned in 2000, there were five years of before data and three years of after data to compare. The test year was for the spring assessment that year. Evaluating this extent of data in so many schools over so many years with averaged NCE scores provided a very robust test for any academic change through the SRO implementation independent variable treatment.

A before and after SRO three year TVAAS comparison on the six years of that TCAP Achievement Test data were also performed (Appendices E.15 and E.16). The 7th and 8th grade Writing Test data were compared for the years and changes indicated. The Algebra I test results by school as NCEs were available from 1998 through 2003 and compared. The foregoing analyses yielded four longitudinal measures from the twelve middle schools (48 total comparisons) to review and evaluate for SRO impacts with as much as ten years of longitudinal data per school.

2. Seven High School SRO Comparisons:

Seven high schools also had usable data to compare. The earlier SRO implementations at the high schools coupled with the more recent Gateway Exam implementation reduced available valid “prior” SRO school data for inclusion in this study. Three measures, however, could be compared. The mean scale scores for the Algebra I End of Course tests over four, six, or eight year periods, depending on data availability, were statistically compared. The TVAAS Algebra I “school effect” scores for the years indicated were averaged and compared. Finally, the 11th grade Writing Test results were compared although, in some cases, only one year was available on one chronological side of the SRO placement year. The foregoing analyses yielded three longitudinal measures from the seven high schools (21 total comparisons) to review and evaluate SRO impacts with as much as eight years of longitudinal data per school.

CHAPTER IV

ANALYSIS OF THE STUDY DATA

A. Introduction:

The research question asked if the implementation of the School Resource Officer in a county school system had been effective in providing overall positive changes in school environments that resulted in improved scholarship and decreased adverse behaviors by the students. This study evaluated nineteen schools. This study includes individual school data from as many as ten years. Many of the prior studies have relied on survey data to form conclusions. This study depends on quantitative data exclusively. A qualitative aspect of this study was to allow the availability of the quantitative data to reveal, in a qualitative sense for the researcher, the proper direction and scope of the research landscape.

B. Juvenile Court Data Analysis:

The Hamilton County Juvenile Court data through 2003 were obtained in 2004 from an assistant to the Administrator of the Hamilton County Juvenile Court. Baseline years prior to 1994 were not available.

The first data set compared Hamilton County Juvenile Court petition and petition rate per 1000 juveniles data from 1994 through 2003. Violence measures included Number of Unruly Petitions, Assaults and Aggravated Assaults Petitions, and Weapons on

School Property Petitions. Behavioral measures included Number of Truant Petitions, Possession of Drugs and Paraphernalia Petitions, and Thefts Under Ten Thousand Dollars Petitions. Juvenile court measures included Total Petitions Filed, Number of Delinquent Petitions, and Delinquent Offenses by Address. These petition totals and their associated rates all indicated a marked rise in court activity since 1994. These data are presented in three data tables commencing with six court measures in Table IV.B.1. The asterisked year (*) and the plus sign year (+) correspond, in general, to the first full years SROs were implemented in the high schools (1998 and 1999) and middle schools (2000) respectively. Court activity (Total Petitions) increased thirty-six percent and Total Petitions for Ages 12 through 17 increased sixty-five percent from 1994 to 2003. Corresponding rates increased thirty-four and sixty-one percent. Similar large increases occurred in the Delinquent, Unruly, and Truant Petitions categories. Clearly these categories and their corresponding rates increased substantially over these years. These increases occurred irrespective of the effects of any SRO presence, SRO mitigating activities, or SRO mentoring influences which may have occurred within the school environments for juveniles in general and the twelve to seventeen age groups in particular.

The second data set compared additional violence and behavioral petitions and rates from 1994 through 2003. Assaults, drug offenses, minor thefts, and weapons brought to school indicated increases in assaults and drug activity coupled with decreases in thefts. Weapons on school property showed a small decrease, possibly due to the implementation of Tennessee's zero tolerance policy in 1995 as discussed in Chapter II. A student's t - test on the change (decrease) in the school weapons data for the five years, 94-98, and the five years, 99-03, was computed using a pooled variance. The decrease was not significant at the $\alpha = .05$ level ($p = 0.306$) as shown in Appendix D.

Table IV.B.1: Hamilton County Juvenile Court Petitions And Petition Rates Per Thousand Filed From 1994 To 2003						
Year Under 18 # Rate	Total Petitions Filed	Number of Delinquent Petitions	Number of Unruly Petitions	Number of Truant Petitions	Total Petitions Ages 12- 14	Total Petitions Ages 15- 17
Measure	J. Court	J. Court	Violence	Behavior	J. Court	J. Court
1994 70,265 Rate	5697 81.08	2799 39.84	204 2.90	173 2.46	662 9.42	1960 27.89
1995 70,505 Rate	5884 83.46	3084 43.74	244 3.46	156 2.21	700 9.93	2208 31.32
1996 72,488 Rate	6257 86.32	3363 46.39	192 2.65	181 2.50	646 8.91	1970 27.18
1997 70,490 Rate	6350 90.08	3464 49.14	206 2.92	200 2.84	615 8.72	2552 36.20
1998 + 69,736 Rate	6063 86.94	3324 47.67	167 2.39	162 2.32	728 10.44	2433 34.89
1999 69,790 Rate	5902 84.57	2941 42.14	185 2.65	281 4.03	684 9.80	2095 30.02
2000 * 71,316 Rate	5967 83.67	2967 41.60	233 3.27	261 3.66	846 11.86	1982 27.79
2001 71,196 Rate	6522 91.61	3375 47.40	269 3.78	242 3.40	992 13.93	2177 30.58
2002 71,624 Rate	7588 105.94	4294 59.95	261 3.64	304 4.24	1339 18.69	2797 39.05
2003 71,690 Rate	7765 108.31	4498 62.74	280 3.91	240 3.35	1314 18.33	3004 41.90

Under Eighteen Population - Community Research Council (CRC, 2004).

+ 1998 was the first average effective year of SRO implementation in the HCSD High Schools. High School SRO assignments began in 1996 and completed in 1999.

* 2000 was the first average effective year of SRO implementation in the HCSD Middle Schools. Middle School SRO assignments began in 1999 and completed in 2000.

The “Weapons on School Property” indicator was the only juvenile court category that was specifically related to adverse behavior in the school system itself. This local increase in juvenile assaults and aggravated assaults evidenced in the court data, before and after the establishment of the SRO presence in the school system, precluded a positive conclusion of a SRO favorable influence on young people in the schools. These data are presented in Table IV.B.2.

The third data set compared Hamilton County Juvenile Court delinquent offense petitions by the juvenile defendant’s address (by city) from 1994 through 2003. Five jurisdictions had a same name high school and middle school within jurisdictions (cities), allowing a rough correlation between juvenile court petitions by cities and the schools within those jurisdictions. The total delinquent petitions were for all ages (11 through 17) from those cities, but should be primarily from the 12 to 17 age groups which could also be representative of and relate to the students in the eleven middle and high school juvenile populations within those five cities. No rates were compared for school related cities as there were no city population data for juveniles available.

Assuming that any trends in this juvenile data were primarily from the 12 through 17 age groups, the implementation of an SRO in the listed city-related schools before and after the 1998–2000 SRO implementation years could indicate some positive SRO impact on student behavior. If the SRO were to have had a positive influence on the educational environment, one would expect that the petition levels in those cities would come down. Clearly, all the city petition numbers increased substantially except for those of the city of Signal Mountain. Signal Mountain is an upscale Chattanooga mountain community with normally low levels of juvenile crime problems. Signal Mountain also has no high school. These two factors probably explain the stability in those data. Clearly, any positive SRO impact on the levels of delinquency in these cities

Table IV.B.2: Hamilton County Juvenile Court Serious Offenses Petitions And Petition Rates Per Thousand Filed From 1994 To 2003				
Year Under 18 # Rate	Assaults & Aggravated Assaults	Possession of Drugs & Paraphernalia	Thefts Under Ten Thousand \$	Weapons on School Property
Measure	Violence	Behavior	Behavior	Violence
1994 70,265 Rate	388 5.52	190 2.70	226 3.22	20 0.28
1995 70,505 Rate	339 4.81	282 4.00	256 3.63	20 0.28
1996 72,488 Rate	411 5.67	286 3.95	236 3.26	10 0.14
1997 70,490 Rate	399 5.66	340 4.82	186 2.64	4 0.06
1998 + 69,736 Rate	413 5.92	233 3.34	112 1.61	12 0.17
1999 69,790 Rate	416 5.69	221 3.17	100 1.43	10 0.14
2000 * 71,316 Rate	439 6.16	214 3.00	137 1.92	5 0.07
2001 71,196 Rate	510 7.16	232 3.26	118 1.66	15 0.21
2002 71,624 Rate	629 8.78	303 4.23	118 1.65	8 0.11
2003 71,690 Rate	718 10.02	314 4.38	120 1.67	9 0.13

Under Eighteen Population - Community Research Council (CRC, 2004).

+ 1998 was the first average effective year of SRO implementation in the HCSD High Schools. High School SRO assignments began in 1996 and completed in 1999.

* 2000 was the first average effective year of SRO implementation in the HCSD Middle Schools. Middle School SRO assignments began in 1999 and completed in 2000.

was not evident in these data. These data are presented as Table IV.B.3.

The Hamilton County Juvenile Court data were inconclusive as to any positive impact the SRO program may have had on delinquent activity by middle and high school aged students in the county. In fact, it appeared that delinquent crime in Hamilton County had been increasing substantially each year since 1994. Juvenile crime in Tennessee had been trending downward since 1995 (Cook, 2004, February 20). Hamilton County juvenile crime continued higher in 2003 by another three percent while the level across the state decreased another 32 percent (Combs, 2004, August 15). The Hamilton County delinquency referral rate to juvenile court per 1,000 children under 18 increased from 87.5 in 1996 to 108.3 in 2003 and has increased thirty-one percent since 1999 (CRC, 2004). These different trend directions were anomalous, particularly since the SROs, with their increased law enforcement presence, were being implemented in the schools during this time span. In Hamilton County, female juvenile court involvement had increased 36 percent compared to the male's 12 percent increase from 1996 through 2002 and may help to explain some of the county increase that had been experienced (Heher, 2003, August 4).

In an interview on February 9, 2004, the Administrator of the Hamilton County Juvenile Court indicated that the implementation of the SROs did result in an increase in court referrals as school administrators began using the SROs to enforce school disciplinary policies in addition to the law itself.

In conclusion, the juvenile court data showed that any positive SRO influences on the school learning environment were not apparent in the data trends (assuming that lower court petition numbers would indicate lower levels of juvenile bad behavior or crime). In fact, the court juvenile petition levels increased after the SROs were implemented. The Hamilton County SRO supervisors have indicated that "more active SROs" may actually

Table IV.B.3: Hamilton County Juvenile Court Delinquent Offenses by Address										
City	1994	1995	1996	1997	1998 +	1999	2000 *	2001	2002	2003
Hixson	108	174	193	262	330	271	239	296	320	280
Red Bank	98	125	113	138	134	152	127	128	270	156
Soddy Daisy	85	105	166	140	128	152	79	162	235	328
Ooltewah	82	111	58	92	84	76	113	105	147	168
East Ridge	75	108	136	155	147	131	118	150	156	230
Signal Mountain	34	67	53	44	62	53	37	92	35	46

Address measures are Juvenile Court Offenses. No rate data were calculated.

+ 1998 was the first average effective year of SRO implementation in the HCSD High Schools. High School SRO assignments began in 1996 and completed in 1999.

* 2000 was the first average effective year of SRO implementation in the HCSD Middle Schools. Middle School SRO assignments began in 1999 and completed in 2000.

be causing some of the petition data increases as more juveniles are processed due to the SRO presence (Lazenby, 2004, February 22).

Directly relating juvenile court data and rates to the actual crime levels in the schools may not be appropriate in many cases. This issue of reported juvenile criminal activity levels versus actual juvenile criminal activity levels and what these data really indicated occurred again and again within SRO reporting data significance discussions. The School Board had concerns on disproportionate minority confinement (DMC) issues related to the police holding minority truants for parental pickup (Carroll, 2001, September 18). Hamilton County was one of five target counties in a current Tennessee assessment of DMC issues in its juvenile justice system (OBER, April, 2003).

C. Hamilton County School District Data Analysis:

As indicated in Chapter III on Methodology, the HCSD data were problematic. The school level data that were necessary to support this research were not available. The HCSD personnel were supportive, but the data retained through the school district consolidation in the summer of 1997 did not provide the necessary continuity to support the rigorous comparative and statistical treatments required. These data were required for the longitudinal and same year comparisons to evaluate the SRO implementations which occurred over the same time frame. No HCSD data were used.

D. School Resource Officer Data Analysis:

The six SRO data elements that were used for the SRO data analyses were Offense Reports, Consultation Reports, Arrests, Conflict Resolutions, Fights, and Assaults. These six elements are listed and compared in the following tables. An attempt was made to normalize the SRO reported data, however lack of sufficient separate middle and high school enrollment data by year for the schools affected precluded this approach. These data could be controlled for school enrollment as total enrollment changes were obtained. The public schools' total enrollment for the 1996-1997 school year was 43,527 students in the newly combined city and county school systems (DOE, NCES 2003-410, July, 2003). Yearly enrollments have decreased since the consolidation to 40,660 students by the start of the 2003-2004 school year (Carroll, 2004, September 16). Public school enrollment in Hamilton County decreased a total of 6.6 percent from the 1996-1997 to the 2003-2004 school years. This small decrease of approximately 0.8 percent per year in the public school enrollment was considered to be a relatively constant middle and high school student level over the eight year period for these SRO raw number data element comparisons.

These six SRO data elements were selected because they were consistently measured throughout the period of interest from 1996 through 2003. Misdemeanor, Felony, and Drug Arrests categories were combined into the "Arrests" category. The results of the SRO data collection effort for the Hamilton County School District 1996 to 2003 High School and Middle School SRO Data are presented in the summary tables and discussed separately.

1. High School SRO Data:

The high school SRO data were collected from the Hamilton County SRO supervisor during the research. The City of Chattanooga data were not usable as only one year was obtained. The County and City school system merger in 1997 resulted in the one school system which included 22 high schools and 18 middle schools. The following series of Tables IV.D.1 through 6 summarize these useable collected county data on four high schools.

2. High School SRO Data Analysis:

The following high school data represents the reporting of the seven complete years SROs have been assigned to the high schools since 1996. The initial county high school SRO was assigned in the spring of 1996 and the city high school SROs were assigned in the fall of 1997. Since there were not any prior SRO data, there was no baseline for any comparisons of the before and after violence incident levels from Hamilton County or Chattanooga. The juvenile court data, however, did show that juvenile incident levels in Hamilton County trended upward over this period. The high school SRO incident numbers did generally increase in years subsequent to the initial assignment year. Some data varied widely. For example, the number of Ooltewah High School Consultation Reports ranged over 252, 43, 94, 115, 776, 350 to 230 for the seven year period. The increase from 115 to 776 reports annually one year did correspond to a change in SROs for the 2000 – 2001 school year, but increases in the numbers of these reports were seen that year in almost all schools. The increase in consultations

Table IV.D.1: Hamilton County School District 1996 to 1998 High School SRO Data				
1996 to 1998 SRO High School Data	Ooltewah 1/96 – 5/96	Ooltewah 8/96 – 5/97	Ooltewah 8/97 – 5/98	Central 8/97 – 5/98
1. Offense Reports	51	72	59	79
2. Consultation Reports	54	252	43	101
3. Arrests	17	12	21	14
4. Conflict Resolutions	N/A	30 (2 nd Sem.)	23	4
5. Fights	*	*	8	*
6. Assaults	*	*	*	*

* Not measured

Table IV.D.2: Hamilton County School District 1998 to 1999 High School SRO Data			
1998 to 1999 SRO High School Data	Ooltewah 8/98e- 5/99	Central 8/98 – 5/99	Soddy Daisy 8/98e- 5/99
1. Offense Reports	77	57	80
2. Consultation Reports	94	48	71
3. Arrests	4	16	26
4. Conflict Resolutions	84	8	91
5. Fights	16	7	*
6. Assaults	*	*	*

* Not measured

Table IV.D.3: Hamilton County School District 1999 to 2000 High School SRO Data				
1999 to 2000 SRO High School Data	Ooltewah 8/99 – 5/00	Central 8/99 – 5/00	Soddy Daisy 8/99 – 5/00	Red Bank 8/99 – 5/00
1. Offense Reports	108	97	74	25
2. Consultation Reports	44	70	50	42
3. Arrests	8	24	55	14
4. Conflict Resolutions	115	33	18	0
5. Fights	5	20	21	4
6. Assaults	8	*	*	*

* Not measured

Table IV.D.4: Hamilton County School District 2000 to 2001 High School SRO Data				
2000 to 2001 SRO High School Data	Ooltewah 8/00 – 5/01	Central 8/00 – 5/01	Soddy Daisy 8/00 – 5/01	Red Bank 8/00 – 5/01
1. Offense Reports	114	144	Not Reported	19
2. Consultation Reports	776	286	Not Reported	268
3. Arrests	82	108	Not Reported	10
4. Conflict Resolutions	24	42	Not Reported	10
5. Fights	15	7	Not Reported	3
6. Assaults	24	11	Not Reported	2

Table IV.D.5: Hamilton County School District 2001 to 2002 High School SRO Data				
2001 to 2002 SRO High School Data	Ooltewah 8/01 – 5/02	Central 8/01 – 5/02	Soddy Daisy 8/01 – 5/02	Red Bank 8/01 – 5/02
1. Offense Reports	123	74	Not Reported	35
2. Consultation Reports	350	599	Not Reported	477
3. Arrests	69	60	Not Reported	26
4. Conflict Resolutions	33	22	Not Reported	48
5. Fights	7	8	Not Reported	8
6. Assaults	22	15	Not Reported	185

Table IV.D.6: Hamilton County School District 2002 to 2003 High School SRO Data				
2002 to 2003 SRO High School Data	Ooltewah 8/02e- 5/03	Central 8/02e- 5/03	Soddy Daisy 8/02e- 5/03	Red Bank 8/02e- 5/03
1. Offense Reports	109	71	Not Reported	33
2. Consultation Reports	230	240	Not Reported	463
3. Arrests	83	58	Not Reported	31
4. Conflict Resolutions	17	24	Not Reported	64
5. Fights	8	10	Not Reported	4
6. Assaults	28	18	Not Reported	0

may have been due to an SRO policy change that year or for some other administrative reason, but this is speculative. The preference of the SRO for consultations over resolutions or visa versa may just indicate a difference in style by different SROs. This Ooltewah High School example represented the only change in the SRO incident data corresponding to a change in an assigned SRO that was evident in these data.

The overall arrest rate did stand out, however. The number of arrests may be the most valid and reliable SRO indicator of the six listed as the arrest is the most serious and formal action by an SRO and carries a significant consequence for the student. The arrest rate per high school for the first four years was 20.3 and for the last three years it was 56.6. An increase of almost 300 percent, this increase also tracked with the juvenile court data increases. Coupled with the decreases in enrollment, this increase in arrest rate was notable. Increasing levels of violence in the Hamilton County high schools, resulting in these arrests, may have actually been occurring. Most of the SRO reporting levels, however, tended to increase with SRO presence longevity at the school.

The data were then arrayed in cohort, not calendar, years for comparison (not shown). The years were adjusted with first SRO year data compared with other SRO first year data by school by SRO implementation year. Cohort years compared the data based on the number year the SRO was assigned. The Rain and Brehm report (Appendices B. and C. report number seven) found that the SRO reporting levels peaked in the second cohort year, returning to a lower baseline level in the third year.

For Hamilton County, fights and assaults were combined for the cohort comparison and offense reports and arrests were included, leaving three

categories to compare for this adjusted cohort year review. These data showed an increase in SRO reporting levels in adjusted cohort year four which then persisted at the new higher level. With only three high schools and three categories, these data did not support any general conclusion except that it did, interestingly, differ from the conclusions drawn in the South Carolina study.

3. Hamilton County School District 1999 to 2003 Middle School SRO Data:

The County middle school SRO data were collected from the Hamilton County SRO supervisor during this research. The City of Chattanooga data were not usable as only one useful year that had been retained by the CPD was obtained.

4. Middle School SRO Data Analysis:

The preceding middle school data represented the reporting of the four complete school years SROs had been assigned to the county middle schools beginning with the 1999-2000 school year. Again, since there were no prior SRO data, there were no baselines for comparisons of before and after violence incident levels. As with the high schools, the number of consultation reports increased markedly in the 2000 – 2001 school year. These general increases in reporting levels mirrored that of the high schools and the conclusions are the same.

The arrest rate change in the middle schools was even more pronounced than in the high schools. Over the four school years from 1999 - 2000 to 2002 - 2003,

the arrest rate went up over 700 percent. The average arrest rates per school year were calculated and were 5.8, 12.5, 20.6, and 42.6 respectively over the four year period. This seemed high, but tended to track with the juvenile petition court data for the 12-14 year old age group.

Total juvenile court petitions for the 12-14 year olds increased ninety-two percent over the same four year interval. Over the same interval, the total juvenile court petitions for all juveniles went up thirty-one percent. The six SRO incident data elements listed are Offense Reports, Consultation Reports, Arrests, Conflict Resolutions, Fights, and Assaults. The following series of Tables IV.D.7 through 13 summarize these collected County SRO data.

5. High School and Middle School SRO Data Conclusions:

SRO data can be problematic. An increase in reporting could indicate a growing problem with student behavior or increased enforcement coupled with resultant better student behavior. Reporting levels did tend to go up over time in Hamilton County to a higher than initial plateau. Clearly, SRO school reporting numbers need to be evaluated carefully to determine if the school environment itself is really improving or problem students are simply being weeded out.

Table IV.D.7: Hamilton County School District 1999 to 2000 Middle School SRO Data

1999 to 2000 SRO Middle School Data	Ooltewah 8/99 – 5/00	Red Bank 1/00– 5/00	Loftis 8/99 – 5/00	Brown 1/00– 5/00	Hunter 1/00 – 5/00
1. Offense Reports	24	9	1	22	11
2. Consultation Reports	73	0	36	73	10
3. Arrests	9	5	1	4	10
4. Conflict Resolutions	201	148	20	105	32
5. Fights	8	3	9	24	3
6. Assaults	7	0	0	0	0

Table IV.D.8: Hamilton County School District 2000 to 2001 Middle School SRO Data - Part One

2000 to 2001 SRO Middle School Data	Ooltewah 8/00 – 5/01	Red Bank 8/00 – 5/01	Loftis 8/00 – 5/01	Brown 8/00 – 5/01	Hunter 8/00 – 5/01
1. Offense Reports	131	37	75	75	17
2. Consultation Reports	966	1323	167	639	182
3. Arrests	25	9	6	19	8
4. Conflict Resolutions	467	147	37	74	34
5. Fights	59	36	11	13	10
6. Assaults	3	1	6	35	2

Table IV.D.9: Hamilton County School District 2000 to 2001 Middle School SRO Data - Part Two			
2000 to 2001 SRO Middle School Data	Signal Mtn. 8/00e- 5/01	Soddy Daisy 8/00e- 5/01	East Ridge 2/01 – 5/01
1. Offense Reports	13	29	14
2. Consultation Reports	75	227	504
3. Arrests	3	17	13
4. Conflict Resolutions	5	24	43
5. Fights	1	14	8
6. Assaults	2	1	8

Table IV.D.10: Hamilton County School District 2001 to 2002 Middle School SRO Data – Part One					
2001 to 2002 SRO Middle School Data	Ooltewah 8/01 – 5/02	Red Bank 8/01 – 5/02	Loftis 8/01 – 5/02	Brown 8/01 – 5/02	Hunter 8/01 – 5/02
1. Offense Reports	138	39	33	73	27
2. Consultation Reports	542	1272	184	921	376
3. Arrests	45	24	3	20	13
4. Conflict Resolutions	341	184	71	88	43
5. Fights	15	6	25	11	2
6. Assaults	61	9	6	24	0

Table IV.D.11: Hamilton County School District 2001 to 2002 Middle School SRO Data – Part Two

2001 to 2002 SRO Middle School Data	Signal Mtn. 8/01 – 5/02	Soddy Daisy 8/01 – 5/02	East Ridge 8/01 – 5/02
1. Offense Reports	9	61	24
2. Consultation Reports	165	338	494
3. Arrests	5	33	22
4. Conflict Resolutions	6	11	103
5. Fights	1	10	10
6. Assaults	3	17	17

Table IV.D.12: Hamilton County School District 2002 to 2003 Middle School SRO Data – Part One

2002 to 2003 SRO Middle School Data	Ooltewah 8/02 – 5/03	Red Bank 8/02 – 5/03	Loftis 8/02 – 5/03	Brown 8/02 – 5/03	Hunter 8/02 – 5/03
1. Offense Reports	99	53	35	71	32
2. Consultation Reports	341	87	320	491	170
3. Arrests	50	47	16	55	22
4. Conflict Resolutions	45	35	89	36	23
5. Fights	18	13	6	18	0
6. Assaults	37	13	12	11	0

Table IV.D.13: Hamilton County School District 2002 to 2003 Middle School SRO Data – Part Two

2002 to 2003 SRO Middle School Data	Signal Mtn. 8/02e- 5/03	Soddy Daisy 8/02e- 5/03	East Ridge 8/02e- 5/03		
1. Offense Reports	7	57	92		
2. Consultation Reports	161	379	625		
3. Arrests	7	59	85		
4. Conflict Resolutions	13	31	146		
5. Fights	2	11	15		
6. Assaults	4	19	46		

E. Tennessee Comprehensive Assessment Program Data Analysis:

1. Middle and High Schools Achievement Data Analyses:

Using the SRO Matrix, the middle schools and high schools were evaluated longitudinally with the pre and post SRO academic measures available. The school level data from middle schools were Seventh and Eighth Grade Writing Assessments, TVAAS Percentile scores by subject, grade, and school, Tennessee Comprehensive Assessment Program (TCAP) average NCE Results of annual tests in Math, Reading, Science, Language Arts, and Social Studies, and Algebra I NCE Scores. The school level data from the high schools were the TVAAS Percentile School Effect, the Eleventh Grade Writing Assessment, and the Algebra I Subject Matter Tests.

The high school statistical results are provided in the Appendix F appendices. Both the statistical and descriptive results are summarized in Table IV.E.1. If one discounts the seventeen writing assessments, all of which went up and are thus suspect of a change in measurement or curricular emphasis, the remaining measures showed twenty-one increasing and twenty-nine decreasing. Of the middle school average NCE scores, which were probably the most valid and reliable statistical measures presented in this study, four went up (two significantly) while eight went down (one significantly). Overall, the preponderance of the measures went down with the SRO implementation.

2. SRO Presence Versus SRO Non Presence Factors:

Middle schools with SROs were also compared with middle schools without SROs for the year 2000. The SRO and non SRO middle schools were compared for the year 2000 on the TCAP Normal Curve Equivalent (NCE) test score metric. Approximately half of the middle schools had SROs in 2000 so that was an effective year to compare the six SRO schools versus the six non SRO schools on the SRO independent variable. The differences in Achievement Test NCE averages between these SRO and non SRO schools were evaluated through the differences in means test and are indicated in the Appendix E appendices. Social Economic Status (SES) of the schools was also compared between these groups of schools. SES was suspected to be a possible factor in any differences found in the scores since the schools with the SROs were former city schools and the schools without SROs were in the county. This situation occurred because the city of Chattanooga implemented their SROs prior to Hamilton County. Difference

Table IV.E.1: School Longitudinal SRO Statistical and Descriptive Data Results

Schools	Statistical Test Results Before and After an SRO	Descriptive Comparisons Before and After an SRO
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12 HCSD Middle Schools	Subject Area TCAP Change Results	Statistical Significance ($\rho = .05$) Results	Subject Area TVAAS Results	Writing 8th Grade Test Results	Algebra I Test Results
Dalewood	↓	No	↓	↑	↓
Hixson	↓	No	↓	↑	↓
Tyner	↑	Yes	↓	↑	↑
Lookout Valley	↓	Yes	↓	↑	↓
Orchard Knob	↑	Yes	↓	↑	↓
CSAS	↑	No	↑	↑	↑
Brown	↓	No	↑	↑	↓
Ooltewah	↓	No	↓	↑	↓
Soddy Daisy	↓	No	↓	↑	↓
Loftis	↓	No	↑	↑	↓
Hunter	↑	No	↑	↑	↓
Signal Mountain	↓	No	↓	↑	↓
7 HCSD High Schools	Algebra I Test Results	Statistical Significance ($\rho = .05$) Results	Algebra I TVAAS Results	Writing 11th Grade Test Results	Algebra I Test Results
Hixson	↑	Yes	↑	↑	↑
Tyner	↑	No	↑	N/A	↑
CSAS	↑	Yes	↑	↑	↑
Lookout Valley	↑	Yes	↑	↑	↑
Central	↓	No	↓	N/A	↓
Red Bank	↑	No	↓	↑	↑
Soddy Daisy	↑	Yes	↑	↑	↑
Total Schools	19	19	19	17	19
Total of Measures That Increased	10	6 Significant	9	17	8
Total of Measures That Decreased	9	1 Significant	10	0	11

of means tests demonstrated that there was no statistical difference in either the NCE scores between SRO and non SRO schools ($\rho = 0.064$) or in the corresponding schools' SES levels ($\rho = 0.051$). These results are indicated in Table IV.E.2 and Appendices E.17 and 18.

This research effort has shown that the implementation of an SRO program or any other "program" during the 1998-2000 timeframe did not have any discernable impacts on student behavior or achievement. Note that the middle schools without an SRO had a higher NCE test score average than middle schools with an SRO in 2000, though not significantly higher.

3. Social Economic Status Factors:

The former City of Chattanooga schools had generally lower Social Economic Status (SES) levels than the County schools and this could have possibly explained a portion of the middle school achievement test NCE difference.

The middle schools were re-classified controlling on the SES metric. The high SES schools with less than 40 percent student participation in the USDA free or reduced price lunch program were compared with the low SES schools. A t-test was then performed on the SES controlled schools' NCE and SES means differences. Both of these differences became significant (Δ NCE $\rho = 0.008$ and Δ SES $\rho = 0.010$) when controlling on the SES factor. These results demonstrated the strength of the SES factor on achievement test score performance. The data indicated that Social Economic Status (SES) appeared to be the stronger effect through the data than any SRO effect. A strong relation between test scores and SES factors is not unusual as shown in recent research

Table IV.E.2: Summary of SRO versus non SRO Results in Same Year (2000)

Middle School Summary	Test Results Average NCEs Spring 2000	SES Fall 2000
City Middle Schools With SROs Year 2000	Subject Area Average TCAP NCE Scores for Year 2000 Schools with SROs	Free and Reduced Price Lunch (percent)
Dalewood	36.34	80
Hixson	54.40	35
Tyner	46.60	46
Lookout Valley	49.47	41
Orchard Knob	46.60	91
CSAS	60.87	14
Average NCE score with SROs assigned.	49.05	51.17
County Middle Schools Without SROs Year 2000	Subject Area Average TCAP NCE Scores for Year 2000 Schools without SROs	Free /& Reduced Price Lunch (percent)
Ooltewah	55.34	22
Soddy Daisy	50.08	27
Signal Mountain	68.00	7
Brown	53.91	47
Loftis	62.05	11
Hunter	58.15	18
Average NCE score without SROs assigned.	57.92	22.0
Student's t – test (.05)	$p = 0.064$ Difference of NCE means	
Student's t – test (.05).	$p = 0.051$ Difference of SES means	

indicating that other factors, many times, are present (Viadero, 2004, April 21). These results are given in Table IV.E.3 and Appendices E.19 and 20. SES has been shown to be a strong factor in achievement test results (Hibpshman, 2004). The Hamilton County Middle Schools Director indicated that the biggest achievement gap in the middle schools on standardized tests was “between socioeconomic groups” (Carroll, 2004, May 24).

F. Evaluation of Data Results:

The findings of the foregoing Juvenile Court, Hamilton County School District, SRO, and TCAP Achievement Test results were reviewed. The comparative and statistical evaluations were conducted in accordance with accepted mathematical protocols for this type of study. The results are summarized and presented as to the significance of the findings in Chapter V. This research looked to see if the stated hypotheses could be rejected, possibly indicating whether the presence of SROs in schools could have actually impacted the frequency and pattern of student behaviors, the levels of student achievement in the schools selected, or in the various aggregated data. The recommendations as to what school indicators should be tracked and reported in the future are discussed in Chapter V.

G. Findings of the Study:

The Hamilton County Juvenile Court Data were inconclusive as to any positive impact the SRO program may have had on delinquent activity by middle and high school aged

**Table IV.E.3: Summary of SRO versus non SRO Results in Same Year (2000)
Controlled on 40 Percent SES**

Middle School Summary	Test Results Average NCEs Spring 2000	SES Fall 2000
City Middle Schools Low SES Year 2000	Subject Area Average TCAP NCE Scores for Year 2000 Title I	Free /& Reduced Price Lunch (≥ 40 Percent)
Dalewood	36.34	80
Tyner	46.60	46
Lookout Valley	49.47	41
Orchard Knob	46.60	91
Brown	53.91	47
Average NCE score with SROs assigned.	46.58	61.0
Middle Schools High SES Year 2000	Subject Area Average TCAP NCE Scores for Year 2000 non Title I	Free /& Reduced Price Lunch (< 40 Percent)
Ooltewah	55.34	22
Soddy Daisy	50.08	27
Signal Mountain	68.00	7
Loftis	62.05	11
Hunter	58.15	18
CSAS	60.87	14
Hixson	54.40	35
Average NCE score without SROs assigned.	57.92	19.14
Student's t – test (α = .05)	ρ = 0.008 Difference of NCE means	
Student's t – test (α = .05)	ρ = 0.010 Difference of SES means	

students. Delinquent crime in Hamilton County had increased substantially since 1994 as the national and state trends were going down. The number of children processed through the local juvenile court system increased sixty-one percent from 1994 to 2003. Though some of the increase may be explained by better reporting protocols or the SRO presence itself, a positive SRO influence on student behaviors was not apparent in the data trending on the middle and high school age groups. Total Petitions for ages 12 through 17 increased sixty-five percent from 1994 through 2003, certainly not indicating any positive SRO effect on student behavior spanning the primary SRO implementation years of 1998 through 2000.

The Hamilton County School District data were not usable with the exception of some of the provided testing data. The existence of gaps, the lack of Chattanooga City School data prior to the consolidation in 1997, and proprietary student and teacher concerns resulted in a paucity of available information. Fortunately, excellent TCAP data were available. The importance of setting up a research data collection schema prior to the implementation of any independent treatment such as an SRO program cannot be over emphasized. Educational policy makers must have a data system in place in order to be able to know whether to continue or when to discontinue an applied school treatment.

The SRO data were inconclusive. SRO school reporting numbers need to be evaluated carefully to determine if the school environment itself was really improving or not or if the numbers were just changing. The achievement test data results are summarized in Table IV.G.1. Hamilton County schools SRO reporting did tend to increase over time to a higher than initial plateau similar to the South Carolina SRO (Appendix C. number seven) study (Rain and Brehm, 1999). Without any prior baseline of SRO reporting, only trends in the after SRO data provided this limited comment. Table IV.G.1 indicates that a mix of performance changes surrounding the SRO

Table IV.G.1: Middle School and High School Test Results Summary					
Schools	Statistical Test Results Before and After an SRO		Descriptive Comparisons Before and After an SRO		
12 HCSD Middle Schools	Subject Area TCAP Change Results	Statistical Significance ($p = .05$) Results	Subject Area TVAAS Results	Writing 8th Grade Test Results	Algebra I Test Results
7 HCSD High Schools	Algebra I Test Results	Statistical Significance ($p = .05$)	Algebra I TVAAS Results	Writing 11th Grade Results	Algebra I Test Results
Total Schools	19	19	19	18	19
Total of Measures That Increased	11	7 Significant	9	18	9
Total of Measures That Decreased	8	1 Significant	10	0	10

placements were present. If one discounts the eighteen writing assessments, all of which all went up substantially over the time interval, the remaining testing measures showed twenty-one measures increasing and twenty-nine measures decreasing. Of the middle school average NCE score t-tests, which were probably the most valid and reliable statistical measures presented in this study, four went up (two significantly) while eight went down (one significantly). The decrease of nine of the twelve TVAAS value-added indicators on these middle school data tended to ratify a little or no SRO effect conclusion.

The comparison of the SRO and non SRO schools within the same year (2000) indicated that the SRO staffed schools actually had lower test scores than the non SRO staffed schools, again showing no positive SRO influences could be present. Controlling for the SES factor demonstrated that these TCAP NCE test score differences were probably much more related to those SES factors than any SRO effects. This

comparison was effectively a comparison of the test scores of inner city schools with suburban schools. This finding supports the Hamilton County Middle Schools Director's comments earlier this year indicating that the largest achievement gap in the middle schools on the standardized tests related to the SES factors (Carroll, 2004, May 24).

H. Summary:

The juvenile court data indicated that violent and behavior petition totals and corresponding petition rates by juveniles in Hamilton County, in general, had been increasing substantially since 1993. A decrease in two measures did occur. The under ten thousand thefts and weapons to school both decreased. The weapons measure means decrease (five years before and five years after the SRO placements) wasn't statistically significant. The under ten thousand theft measure and rate decreased approximately 50 percent, but was only one of sixteen total juvenile court measures that went down. The rest increased through the SRO implementation years indicating no SRO effect in those data.

SRO incident reporting data had also been increasing since their assignment in the schools. With the student juvenile court data not well related to the schools and no "before" SRO data to compare, the student achievement data remained to make the case for an improved learning environment and SRO linkage in this research. The quality of the TCAP and TVAAS achievement data were excellent though not controlled for student transfers or SES effects except where indicated. The directional randomness of the academic outcomes indicated in Table IV.B.1. did not support any "SRO Effect" within these academic data results.

In summary, the overall mosaic of quantitative results from the juvenile court data, the SRO reporting data, and the TCAP testing data supported a conclusion of no discernible effect from the SRO's presence at multiple schools and the null hypotheses are all accepted. An "SRO Effect" may, in fact, be present, but this study did not show it. In fact, this study demonstrated on numerous comparisons that there were no measurable improvements in any of the data due to an SRO presence.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. Introduction:

Following many years of decreases since the 1994 peak, there are indications that school violence is showing an increase so far this year (2004). Five years following the 1999 Columbine High School incident in Littleton, Colorado, where 15 died including the shooters; there have been a total of 43 school related deaths in the U.S. (Knickerbocker, 2004, April 20). So far in the 2003-2004 school year Thirty three total have died during the prior two school years (Caldwell, 2004, April 18). Federal reporting lags current reporting (largely from news accounts) by about two years. With the proliferation of SROs assigned to schools since Columbine, one must ask if they are really having an impact or is school violence now increasing again?

B. Summary of the Study:

The purpose of this research was to answer the following research question.

Has the implementation of the School Resource Officer in a county school system been effective in providing overall positive changes in school environments which have resulted in improved scholarship and decreased adverse behaviors by students?

The research has used juvenile court data, county school district data, School Resource Officer (SRO) reporting data, and student school achievement data to determine if there were any changes, through the SRO implementation years, within these data which might indicate that there was any “SRO Effect” on these data. Comparisons of schools before and after an SRO was assigned and comparisons of schools with and without an SRO assigned were made. Multiple quantitative data manipulations were used to triangulate, compare, and discern if there was some pattern with these disparate sources. The SRO research landscape was given to provide a context of prior and pending research activity as a background for this research. The specific research study hypotheses are now presented and answered to summarize the study results.

1. Student Violence, Behavioral, and Juvenile Court Incident Measures:

The comparison of the juvenile court data within Hamilton County for the school years 1994 through 2003 for all juveniles and the disaggregated middle and high school age groups were made. The comparisons were completed for the overall number of occurrences for the various types of incidents. These evaluations were primarily descriptive statistics comparisons. A student's t-test difference of means test was performed on the change in the number of weapons to school measure. This measure was the only court measure found that directly related to the schools. The weapons to school means decrease was not significant ($p = .31$) and is displayed in Appendix D. This result was important to this study, however, as the reduction of weapons to school was a major stated purpose of having the SRO and implementing the zero tolerance policies. This relatively simple outcome was not even achieved by the SRO presence in Hamilton County schools. Descriptive

comparisons of total juvenile court petitions, assaults, aggravated assaults, and drug possessions all increased during the SROs' tenure. Court juvenile activity (total petitions) increased thirty-seven percent and total petitions for the ages 12 through 17, which were the ages subject to SRO influence, increased substantially (sixty-five percent) from 1994 to 2003. The data which could be related to specific schools showed the same increasing trends. The SROs were substantially implemented between 1998 and 2000 in the middle of these continuing increases. All of these local increases occurred while the state and national trends were decreasing. Obviously, the SRO presence did not positively impact student behaviors enough to affect these data and the hypotheses for no student behavioral changes must be accepted. In fact, juvenile behaviors, per the juvenile court data reviewed, actually worsened across the board through the years of this SRO implementation.

2. Hamilton County School District Student Measures:

Comparisons of available student outcome measures in the SRO and non-SRO middle and high schools within Hamilton County for the school years 1994 through 2003 were attempted. These comparisons could not be made due to the paucity of student data available as indicated in Chapter IV.

3. SRO School Incident Measures:

The research question of whether the implementation of the SRO and the creation of a potentially safer educational environment resulted in longitudinal SRO reporting measures to change was determined. Reporting changes when an SRO

was replaced were also evaluated. Comparisons of longitudinal school level SRO data from the middle and high schools in 1996 through 2003 were made as those data were available. These were descriptive statistics comparisons of reporting numbers and arrest rates. Means testing was not used as this technique was not supported by these data. No prior SRO data were available for a statistical difference of means types of comparisons.

There were problems with the Chattanooga Police Department data, but the Hamilton County Sheriffs Office SRO data provided consistent SRO data for analysis. Six categories of the county SRO data were tabulated. These were Offense Reports, Consultation Reports, Arrests, Conflict Resolutions, Fights, and Assaults. The data showed that the levels increased over the SROs' years of tenure, particularly arrest rates in both the middle schools and the high schools. These increases tracked with the juvenile court measure increases over the same time frame. The arrest rate increases were significant due to the general underlying validity and reliability of arrest data. The Hamilton County trending did not comport with other jurisdictions with SRO implementations in that the Hamilton County SRO reporting levels increased and then stayed at a new higher level rather than returning to a lower than peak baseline.

4. Student Testing Outcome Measures:

A comparison of available student testing measures in SRO and non-SRO middle and high schools within Hamilton County for the school years 1994 through 2003 were performed. Those comparisons were done for the overall totals for the various types of individual school TCAP assessment indicators and are shown in Appendices

E and F. The comparisons of these school assessment indicators were completed for a longitudinal comparison before and after the SRO placement and for a same year comparison with and without an SRO in place. These evaluations used the student's t-test difference of means test with an F test check for data homogeneity.

Multiple Tennessee Comprehensive Achievement Program (TCAP) test achievement measures were used including Tennessee's Value Added Assessment System (TVAAS) measure to compare student achievement performance before and after and with and without the SRO implementation present. These comparisons were for the ten years of 1994 through 2003 test data from nineteen middle and high schools as appropriate. The achievement data included the five subject area TCAP Achievement Tests from the three middle school grade levels and the TVAAS results from those grades. Writing and Algebra I test results from both the middle and high schools were also used. These longitudinal comparisons (a total of forty eight) split evenly on how many increased and how many decreased, indicating no SRO impact. The SRO between year comparison was also inconclusive as the non SRO middle schools scored higher than the SRO staffed schools. The findings only became significant (still with the non SRO schools scoring higher) when controlled on social economic status (SES). Economic differences between the former city and county middle schools explained both the significant NCE and SES findings (Appendices E.18 through E.20).

Unfortunately for those who advocate and support having the SROs in the schools, these study results do not indicate the existence of any positive measure changes or effects which could be attributed to having an SRO or any other type of whole school reform treatment in place. This is not to say there were not positive SRO effects, but this research simply was not able to show that any improvements in

the educational environment occurred through either student adverse behavioral decreases or increases in student scholarship through this school district's SRO implementation.

C. Conclusions:

What this study demonstrated is that, in the absence of any compelling alignments in these diverse data results, improved educational environments or better student behaviors through an SRO's proximity, the various national claims of SRO presence and the attendant positive influences on student behavior or achievement cannot be supported. The results of this research could be significant as various governmental jurisdictions struggle with SRO program extent and overall costs. This study's findings will provide new information that may further reveal the extent of the educational or behavioral impact of the SRO presence. The methodologies surrounding these data analyses suggest novel data array frameworks and presentation techniques which could be utilized for SRO research designs in the future. Many of these techniques have never been presented before or to such an extent.

The answer to the SRO efficacy question is important locally and nationally as an economic issue. Currently in Hamilton County, and in many other local school districts across the country, there are discussions on who should pay for the continuance of the SRO program (Carroll, 2004, April 19). Due to the cost of this program, Hamilton County had to re-evaluate its SRO program in June of 2004 as part of an overall school budget reduction necessitated by a county commission vote to not increase property taxes (Gang, 2004, June 30). The SRO program was initially cancelled by the school

superintendent for the 2004-2005 school year (Combs, 2004, July 1). Several of the city jurisdictions (Chattanooga, East Ridge, and Soddy-Daisy), perceiving a safety benefit in having SROs, elected to fund SROs in some of their schools for the 2004-2005 school year. Fourteen of the HCSD middle and high schools retained SRO coverage for the 2004-2005 school year with some of that coverage shared between schools (Carroll, 2004, August 10). The individual schools affected are listed in Appendix A. One of these retained SROs subsequently intervened and diffused a violent confrontation among five high school students (Combs, 2004, September 25).

This SRO debate could have benefited from additional research on SRO efficacy. More data on the benefits of SROs may have buttressed a case to continue the SRO presence at all the local middle and high schools. The Chattanooga City and Hamilton County had maintained their twenty nine SROs since 2000 (DOJ, NCJ 203350, April, 2004).

Hamilton County reflected the experience of other school districts with funding problems. Toledo, Ohio will suspend twelve SROs as of January 1, 2005 for similar reasons (Toledo, 2004, September 12). Last year, districts in California, Oklahoma, South Carolina, Michigan, and other states eliminated SRO positions due to similar budgetary issues. More SRO reductions are expected nationally as the Cops in School Program federal grant money for approximately 6,000 positions runs out and additional grant money for SROs is decreased (Long and Hayasaki, 2004, February 8).

This intersection of reduced SRO budgeting with the recent increase in school violence discussed earlier is of concern. If other school systems across the country had more positive behavioral and educational results with SRO implementations than Hamilton County, reducing their SRO programs may not bode well in the face of increasing school violence. This issue bears watching by those interested in safe and

effective schools. Hamilton County recently completed an “Education Summit” visioning process to improve education and, of the eight major goals developed, a safe school environment was not mentioned as a stated priority or issue (Newmyer, 2004, May 23).

D. Recommendations:

1. Additional School Resource Officer Efficacy Studies:

This research has provided a potential template of what needs to be done to establish the efficacy, if any, of an independent treatment, similar to an SRO, within the school setting. Prior research attempts, as indicated by the numerous SRO evaluation reviews, have yet to demonstrate this connection. With better academic data and a similar research design, the necessary statistical testing could show whether the SRO has had any affect on a school’s educational learning environment. Again, the determination and establishment of the data collection schema prior to the application of the independent variable treatment (the SRO presence) would be a necessary condition for valid research results.

2. Reword Federal “Persistently Dangerous” Definition:

The Federal Department of Education (DOE) should pursue the establishment of consistent definitions for school zero tolerance incident reporting through an expansion of the zero tolerance requirements. The DOE should also establish a national definition of a “persistently dangerous” school and defined reportable behavioral incidents so national reporting data can be valid and reliable. It is

clear that the states, on their own, will tend not to define their schools as dangerous and thus have to deal with the resulting public and political implications.

3. Standardized School Resource Officer Reporting:

The School Resource Officer data collection effort needs to be standardized between the Hamilton County School District SRO providers. SRO data reporting differences between the Chattanooga Police Department and the Hamilton County Sheriff's Office make it difficult to make any data comparisons. Data collection differences currently exist, and the usefulness of the collected data is diminished. If data are collected, it should be beneficial data and available to educators in a useful format across the different agencies involved. Consolidation of the current SRO Program under one jurisdiction should be considered. This could be the school district or the sheriff's department. This reorganization action would provide for some of the organizational consistencies, procedural controls, and ownership this type of school district program needs.

4. Local Disciplinary Task Force:

The Hamilton County School District should consider the establishment of a disciplinary task force to suggest and evaluate measures to improve the district's handling of chronic behavioral problems in its schools. The school district should include members of its partnerships with the juvenile court system and the various SRO jurisdictions discussed in this study. The disciplinary task force

initiative could be fashioned after a similar effort recently completed in the Nashville Metro School District (Long, 2004, May 11). The Nashville program, called "New Beginnings," focused on students in grades five through twelve and attempted to improve the flow and availability of student disciplinary information within the district (Riley, June 29). Some parents remained concerned that the program will disproportionately target minority students (Long, 2004, July 19). Hamilton County's recently completed community visioning process called the "Education Summit" addressed many areas of the educational system. These school district disciplinary process issues should be added to the Education Summit process (Staff, 2004, July 4).

5. Truancy Reduction Program:

Chattanooga has an innovative truancy reduction program. Through threats of possible eviction of tenants from public housing if children living there experience excessive absences from school, local truancy rates have dropped significantly (Putman, 2004, April 29). The eighteen public housing communities, twenty seven affected schools, truancy social workers and the parents work together through an escalating set of consequences to assure that students are attending school (Carroll, 2003, August 16). The use of housing residents as "bus monitors" allow an early indication of child truancy. Truancy rates have dropped five percent in the past year (Putman, 2004, May 24). The total days absent by public housing students dropped twenty nine percent (Housing, 2004, June 25). Tennessee also suspends the driving privileges of truants along with eighteen other states (Salisbury and Oseid, 2004, September 8). The number of revoked

student licenses has decreased 24 percent from the 1998-1999 to the 2002-2003 school year (Tennessee Comptroller Report, January, 2004).

I would strongly recommend that the truancy program be continued and strengthened. Children can not learn if they are not in school.

E. Implications for Further Research:

Tennessee has become known in educational circles for three major initiatives. The first was the Tennessee Student / Teacher Achievement Ratio (STAR) experimental research effort on class size reduction performed in the mid 1980s where these reductions demonstrated some positive cognitive improvements. The second was the pioneering use of test score gains data, beginning in the early 1990s, to calculate value added scores for students, teachers, and schools (TVAAS). Systems similar to TVAAS have been adopted by many states. The third was the Chattanooga Benwood initiative to compensate highly qualified teachers for moving to inner city schools to teach disadvantaged youth. The teachers would subsequently profit from any measured gains in student achievement. The Benwood Initiative was named as one of six valuable education reforms by the Lexington Institute (Holland and Soifer, 2004). The U.S. Secretary of Education recently lauded Chattanooga and its Benwood initiative in his Third Annual Report on Teacher Quality, favorably describing this innovative program (DOE, ED-00-CO-0116, July, 2004). A potential fourth initiative would be the Chattanooga Housing Authority's nexus with the local school system in reducing truancy levels. It should be noted that all of these innovative programs required an element of government support, financing, and leadership outside of the school system to accomplish. Specific research implications and recommendations follow.

1. Continued Research Activities:

These above state and local initiatives on class size reduction, value-added measures, incentives to populate inner city schools with more qualified teachers, and truancy reduction activities need to be studied further, each with a rigorous research design, to evaluate their benefit to continue.

2. School Resource Officer Statewide Impact:

A state initiative supporting a county by county SRO efficacy study would also be in order. The limitations of this study could be well addressed in a comprehensive research design across the state's ninety-five counties using the state TCAP data, TVAAS data, juvenile court data, and school disciplinary data. This postulated research study could settle the SRO efficacy issue for the state and a national audience.

The research design could be similar to a law professor's study on the benefits of concealed carry weapons (CCW) legislation. This national study looked at FBI UCR crime indicators versus the existence of the CCW option for citizens and business owners in every one of the 3,054 counties in the United States. The study found that, virtually everywhere, the existence of a CCW option for citizen to protect themselves corresponded with lower crime levels (Lott, 1998). A similar study comparing school behavior and academic measures would be relatively inexpensive, instructive, nationally significant, and timely.

3. Covert Aversion Research Activities:

This researcher has postulated a behaviorism concept called “covert aversion” which may explain a benefit the SRO may provide in a school setting. A psychology of deterrence, covert aversion results in a type of negative reinforcement by individuals. It increases or strengthens an avoidance behavior when the reinforcement results in the escape from a perceived aversive event. Escape occurs when a student, intent on some mayhem, avoids a potential conflict with an armed SRO by deciding to forego the action to avoid that conflict. Avoidance behavior occurs when the student can prevent or postpone the aversive event indefinitely (i.e. the student behaves). An example might be not going to a high crime area of the school because you may be assaulted if you did. Another example might be leaving a school area because a gang fight was said to be imminent. A student not carrying out an illegal action because an SRO may be in the area would be another example. This covert aversion behavior is manifested by students or teachers who want to avoid potential crime and disruptive students who want to avoid potential SRO reaction or retribution.

Future research should address the psychological deterrence aspect of the SRO presence. This feature may be the SRO's real benefit and value within the learning environment and may be difficult to quantify. The research would take the form of a survey of students and teachers over several years with correlations to actual student and teacher behavioral outcomes.

F. Proposed Indicators of School Well-Being:

School Indicators of Well Being are provided as suggestions of what specific parameters should be tracked and compared to indicate that a healthy school environment exists. The indicators are listed in Appendix G. Since too much data can create almost as much of a problem schools as too little data, these indicators need to be selected carefully. More powerful data analysis tools, similar to TVAAS, need to be developed, better data security systems incorporated, data defined in a more consistent manner, and data products thoroughly understood by the consumers of those data (Johnson, 2004). The educational pipeline from Kindergarten through Grade 16 (K-16) needs to be integrated with these new individualized student indicators so that the entire educational progression for those individuals can be tracked. Ten year commitments between colleges and high schools to improve both pipelines are needed (Olwell, 2004, June 16). The Hamilton County Chamber of Commerce has already taken steps to increase the percentage of college graduates in Hamilton County from the 2004 twenty-one percent value. This level of graduates was below the national average of twenty-six percent (Turner, 2004, June 21).

The frequent existence of educational informational silos between the elementary, middle, high school, and college environments needs to be melded into one data driven chain of K-16 information to be mined by the various consumers so that good data driven decisions can be made and supported (School, 2004). The different consumers of these data should receive tailored reports addressing the issues significant to them, but retain access capability to expanded data pools (For, 2004). These data matrices should be multi-level, longitudinal, tied to local goals and plans, and have clearly identified benchmarks and limits as appropriate (Linn and Baker, 1998).

To emphasize individual student tracking, the Northwest Evaluation Association recommended a "Hybrid Success Model" that establishes growth goals for individuals based on where their proficiencies and weaknesses reside, not simply test score values (McCall, Kingbury and Olsen, 2004). Tennessee has an innovative initiative which will require districts to track the state's 50,000 gifted students with Individualized Education Plans (IEPs) and report on gifted students as a separate group. The IEPs were to begin with the 2004-2005 school year, go beyond NCLB requirements, and reflect the increasing coupling of data with individual student achievement (Riley, 2004, May 20). The roll-up of individual student data to the school level could relate to the proposed School Indicators of Well-Being. Thirty-three other states have established a unique student identification system which allows individuals to be tracked through grade changes and family moves. Disciplinary information tracking through this type of system would also be useful to educators (Borg, 2004, August 21).

Duke University recently introduced a Child Well-Being Index (CWI) using twenty-eight indicators in seven domains with five of the indicators being educational. The composite CWI, similar to a consumer price index, measures an index as a percent of 100 which is equated to the index base year of 1975 (Duke, 2004). Kids Count, an organization that compiles child status data at the national, state, and county level in selected states, publishes that data using multiple indicators. In Tennessee, Kids Count is managed by the Tennessee Commission Children and Youth and partially funded by the Annie E. Casey Foundation. Kids Count collects data from various state and federal agencies and compiles it into annual reports (Brown, 2004). These data examples, to be useful as school indicators, need to be useful at the local level. Local, state, and national data already available should be considered only if relevant at the school and district levels.

In conclusion, these collected and compiled data should be evaluated carefully for usefulness and reviewed frequently for retention. The local K-16 educational process objectives need to permeate these selections. These data should be provided in formats that allow for independent analyses by others, provided in a timely manner, provided with clear implications of what they represent, reported with simple explanations of any limits or yardstick values which may be appropriate, and reported with an absence of “spin” to maintain district credibility (Hamilton and Stecher, 2004). Most importantly, educators should be trained in how to evaluate and interpret these data to assure that they continue to be useful and have access to a process that allows these indicators to be supplemented, modified, or deleted if necessary. Local school board and county commission ownership of this process is crucial for its ultimate success.

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Appendix A: Hamilton County School Resource Officer Data

Appendix A.1: Hamilton County SRO Historical Matrix

SRO information is current as of the beginning of the 2003-2004 School Year.

SROs that were retained for the 2004-2005 School Year are listed on the last page.

High Schools & Middle School Listings Legend:

Magnet School

% SACS Accredited School

* TN Low Performing School (Year 1 - 9/01)

x Benwood Foundation Schools

** TN Low Performing School (Year 2 - 8/02)

*** TN Low Performing School (Year 3 - 8/03)

Bold Years = 1st Effective SRO Year

No.	City High Schools	SRO CPD	Assigned	Initial SRO	Discussion
1.	Brainerd HS	Jeff White	Shaun Hickey	Greg Crews 8/97 - 12/00	1998
2.	Chattanooga CCA HSt #	Jim DiPrimo	8/97		1998
3.	Hixson HS	Roy Grasham	8/99	Mary St. Clair 8/97 – 8/99	1998
4. *	Howard HS of Acad & Tech	Ernest Crow	Anthony Chatman 1/03 – 5/03	John Carter 8/97 – 1/03	4/30/03 – Chatman on admin leave. Not re- assigned.
5.	Tyner Academy of M, S,t& T HSt#	Pedro Bacon	8/97		1998
6.	CSAS HSt#	Marcus Easley	Scott Fulghum	Marcus Easley 1/98 – 8/99	Marcus Easley to Patrol 5/00 1998
7.	Lookout Valley HS	Annette Butler		James Holloway 1/98 – 8/00	SRO covers Lookout Valley MS also.
8.	21 st Century # Academy HS	Samansela Beard		Mitch Moss 8/99 – 8/01	SRO also covers 21 st Century MS 2000
9.	Ooltewah HS	Quarles	8/03	Charles Lowery 1/96 - 3/99 Lonnie Ratchford 2/99 - 3/00 Jody Mays 3/00 – 8/03	Ooltewah HS shifted from HCSD to CPD control for 2003 – 2004 school year. 1996

No.	County High Schools	SRO HCSD	Assigned	Initial SRO	Discussion
1.	Central HS	Janice Byrd	11/03	Shaun Shepherd 8/97 – 4/03 Jody Mays 8/03t– 11/03	1998
2.	Red Bank HS	Tim Mann	8/03	Joe Kerr 8/99t– 8/03	Funding by Red Bank, Signal Mountain, & Walden
No.	Soddy-Daisy	SRO SDPD	Assigned	Initial SRO	Discussion
1.	Soddy Daisy HS	Phil Hamrick	10/00	Bobby Weeks 8/98	Soddy-Daisy Police Dept. 1999
No.	East Ridge	SRO ERPD	Assigned	Initial SRO	Discussion
1.	East Ridge HS	Vaughn Crane	8/97	8/97	East Ridge Police Dept. 1998
	HCSD High School Total	SROs City	SROs Co.	SROs Other PDs	SROs Administrative
	13 plus Washington Alternative	9 + 1 (COPS Grant ~12/01t)	2 (Sale Creek Part Time)	2 (ER, & SD PDs)	1-City, Sgt. Sgt. John Carter 1-County, Lt. Charles O. Lowery, Jr.

County SRO Supervision: Lt. Charles O. Lowery, Jr. Supervisor since 1998.

City SRO Supervision: Sgt. John Carter replaced Sgt. Vaughn on 1/04. Sgt. Dana Vaughn repl. Lt. Tracy Arnold on 4/03. Lt. Tracy Arnold repl. Lt. Jeff Francis on 1/11/02. Deputy Chief Cook – City SRO Liaison.

No.	City Middle Schools	SRO CPD	Assigned	SRO Initially Assigned	Discussion
1.	21 st Century Academy MS #	Samansela Beard		Mitch Moss 8/99	SRO covers 21 st Century HS also. 2000
2. *	CCCA / (Chat.MS) # Chat Middle Museum Magnet #	Heidi White		Mike Short 8/99 **	Bob Green Princ.-1/02 2000 *** 2003 Probation Improving
3. *	Franklin MS	Moreland Wilson		Wilma Brooks 8/99 **	*** 2003 Corrective Action 2000
4. *	Dalewood MS	Reginald Parks	1/03	Anthony Chatman 8/99 – 1/03 **	A. Chatman to Howard HS in 1/03 *** 2003 Corrective Action 2000
5.	Hixson MS %	Troy Cannon		Eddy Chamberlin 8/99	2000
6.	Tyner Middle Academy of M, S, & T #	Michael Kepar		Jason Irvin 8/99 Chad Suttles	2000
7.	Lookout Valley MS	Annette Butler		James Holloway 8/99	SRO covers L. Valley HS also. 2000
8.	East Lake Academy of Fine Arts MS # x	Scott Bales		Willie Truitt 8/99 Annette Butler	2000
9. *	Orchard Knob x MS	Justin Kilgore		Barry Burns 8/99 **	*** 2003 Corrective Action 2000

No.	City Middle Schools	SRO CPD	Assigned	SRO Initially Assigned	Discussion
10.	CSAS MS #	Marcus Easley		Marcus Easley 1/98 – 8/99 Scott Fulghum 8/99	SRO covers CSAS HS also. Marcus Easley to Patrol 5/00
11.	Washington Alternative	Brian Moseley		Shawn Hickey 8/99-12/00 Greg Crews 1/01	2000
12.	CSLA MS #	SRO to be assigned	~ 1/02		2001 COPS in School Grant. 2000

No.	County Middle Schools	SRO HCSD	Assigned	SRO Initially Assigned	Discussion
1.	Ooltewah MS	Lonnie Ratchford	3/00		Stays with County 2000
2.	Brown MS	Arvel Edwards	1/00		2000
3.	Red Bank MS	Harriet White	11/03	Scott Ogradowczyk 1/00 - 8/02 Eric Merkle 8/02 – 11/03	2000
4.	Loftis MS %	Michael Houston	1/00		2000
5.	Hunter MS	Donnie Stokes	8/02	Lisa Starnes 1/00 - 8/02	2000
6.	Signal Mountain MS	Mathew Vandegriff	11/03	Sandy Browne 8/00 – 11/03	2001

No.	County Middle Schools	SRO HCSD	Assigned	SRO Initially Assigned	Discussion
1.	Ooltewah MS	Lonnie Ratchford	3/00		Stays with County 2000
2.	Brown MS	Arvel Edwards	1/00		2000
3.	Red Bank MS	Harriet White	11/03	Scott Ogradowczyk 1/00 - 8/02 Eric Merkle 8/02 - 11/03	2000

	All Schools Summary	SROs City 9-HS, 9-MS	SROs Co. 2-HS, 8-MS	SROs Other PDs 2-HS (ER & SD)	SROs – Supervision 2 (City - 1, County - 1)
	(Ooltewah HS to City)	(+ 2 COPS Grant)			~ 1/02: 2001 COPS in School Grant
	Totals	18	10	2	18 + 10 + 2 = 30 Total SROs

No.	High Schools & Middle Schools	None/ Partial SRO	Assigned	SRO Initially Assigned	Discussion
1.	Sale Creek HS	Steve Walls	8/03	Charles Lowery 8/01 – 8/03	Serving as part time SRO
2.	Sale Creek MS	Steve Walls	8/03	Charles Lowery 8/01 – 8/03	Serving as part time SRO
3.	Sequoyah Vo-Tech			Co.	
4.	Harrison Bay Vo-Tech	None	Transitioned to Adult High School	N/A	To Adult HS 8/2004
5.	Middle College HS @ CSCC	None	Otto Taylor - Princ.	N/A	Established 1/2002
No.	High Schools & Middle Schools	None/ Partial SRO	Assigned		Discussion

Fourteen Schools Retained SRO Coverage For The 2004-2005 School Year:

1. Chattanooga Police Department: Brainerd High School, Howard High School, Hixson High School, Ooltewah High School, Tyner High School, Washington Alternative School, Dalewood Middle School, East Lake Middle School, Hixson Middle School, Orchard Knob Middle School, Tyner Academy.

2. East Ridge Police Department: East Ridge High School, East Ridge Middle School.

3. Soddy-Daisy Police Department: Soddy-Daisy High School.

Appendix A.2: Hamilton County School Data Cut Points

With the formation of middle and high school magnet schools, the tracking of the school name changes proved challenging and multiple names are indicated on the SRO Matrix. Tennessee assigns unique numbers to schools and these were largely maintained through the school consolidation. The individual school numbers assigned by the state are indicated in the data tables comment sections. The Tennessee cities within Hamilton County of East Ridge, Soddy Daisy, and Red Bank provided SROs to their high schools from their respective police departments. The Red Bank SRO was funded by the cities of Signal Mountain, Walden, and Red Bank. The SRO was staffed by the HCSO beginning with the 2002 - 2003 school year.

The individual schools which were included in the SRO data and achievement test data analyses are indicated. Some of the schools had to be excluded due to SRO or test data problems and they are indicated. The combination of the Hamilton County (Tennessee School District No. 330) and Chattanooga City (Tennessee School District No. 331) Systems beginning with the 1997–1998 school year was a confounding factor in this study and may have contributed to some of the data problems experienced. City schools generally retained their assigned numbers through the consolidation of the school systems in 1997.

The middle and high school SRO placement dates in the third column on the preceding charts were used to provide the longitudinal cutting points necessary to evaluate the before and after SRO environmental impact, if any, for the TCAP and TVAAS achievement data review in Chapter IV.

Hamilton County School Data Cut Points: High School SRO Implementation			
High Schools	SRO Jurisdiction	SRO Start	Comments & School No.
Brainerd	Citye CPD	8/97	21
Chattanooga Center for the Creative Arts (CCCA)	Citye CPD	8/97	45
Hixson	Citye CPD	8/99	128
Howard High School of Academics & Technology	Citye CPD	8/97	137
Tyner Academy of Math, Science, & Technology	Citye CPD	8/97	237
Chattanooga School of Arts & Sciences (CSAS)	Citye CPD	1/98	46
Lookout Valley	Citye CPD	1/98	165
21 st Century Academy	Citye CPD	8/99	26
Ooltewah – First SRO placed in County	Citye CPD	1/96	Annexed into the City in 2003 - 160
Central	Countye HCSO	8/97	40
Red Bank	County – HCSO	8/99	175
Soddy Daisy (Missing some SRO Data)	Soddy Daisy PD	8/98	Local Police Cover SRO Position - 220
East Ridge	East Ridge PD	8/97	Local Police Cover SRO Position - 70
Sale Creeke [‡]	County – HCSO	8/03	Part time SRO - 190
Washington Alternative [‡] **	Citye CPD	N/A	Alternative School
Harrison Bay Technology Center * **	No SRO	N/A	Technology School
Sequoyah Technical Center [‡] **	No SRO	N/A	Technology School
Hamilton County Middle College * ** Alternative program for some students.	No SRO	N/A	Chattanooga State Community College
High Schools Totals - 18			

* Schools which were atypical and were not included in this review.

** Schools with anomalous data issues and were not included in this review.

Hamilton County School Data Cut Points: Middle School SRO Implementation			
Middle Schools	SRO Jurisdiction	SRO Start	Comments & School No.
21 st Century Academy ^{e*}	Citye CPD	8/99	No ^e CAP Datae- 26
Chattanooga Middle Museum Magnet – CCCA (Chattanooga Middle) ^{e**}	Citye- CPD	8/99	No ^e CAP Datae- 43
Franklin ^{e*}	Citye- CPD	8/99	No ^e CAP Datae- 6
Dalewood	Citye- CPD	8/99	55
Hixson	Citye- CPD	8/99	129
Tyner Middle Academy of Math, Science, & Technology	Citye- CPD	8/99	239
Lookout Valley	Citye- CPD	8/99	165
East Lake Academy of Fine Arts **	Citye- CPD		No ^e CAP Datae- 64
Orchard Knob	Citye- CPD	8/99	200
Chattanooga School for the Arts & Sciences (CSAS)	Citye- CPD	1/98	46
Chattanooga School for the Liberal Arts	Citye- CPD	None	162
Ooltewah	County – HCSO	3/00	157
Brown	County – HCSO	1/00	35
Red Bank **	County – HCSO	1/00	Two ^e CAP Data Sets - 180
Soddy Daisy	County – HCSO	8/00	225
East Ridge **	County – HCSO	2/01	Two ^e CAP Data Sets - 75
Loftis	County – HCSO	1/00	120
Hunter	County – HCSO	1/00	100
Signal Mountain	County – HCSO	8/00	210
Washington Alternative ^{e*} **	Citye CPD	N/A	
Sale Creek * **	County - HCSO	8/03	Part time SRO - 190
Middle Schools Totals - 21			

* Schools which were atypical and were not included in this review.

** Schools with anomalous data issues and were not included in this review.

Appendix B: School Resource Officer Current and Pending Evaluation Listings

Appendix B: School Resource Officer Current and Pending Evaluation Listings

School Resource Officer Current Evaluation Listing

1. Dickmann, Ellyn, Foster, Ann, & Mowery, Hugh (1995). "School Resource Officer Partnership Evaluation Report Number 1," Research and Development Center for the Advancement of Student Learning, Colorado State University. Issued December 7, 1995.
2. Dickmann, Ellyn, Foster, Ann, & Mowery, Hugh (1996). "School Resource Officer Partnership Evaluation Report Number 2," Research and Development Center for the Advancement of Student Learning, Colorado State University. Issued January 29, 1996.
3. Dickmann, Ellyn, Foster, Ann, & Mowery, Hugh (1996). "School Resource Officer Partnership Evaluation Report Number 3," Research and Development Center for the Advancement of Student Learning, Colorado State University. Issued June 17, 1996.
4. McDaniel, Joanne, (1997). "The North Carolina High School Strategy Survey." Center for the Prevention of School Violence. One of six strategies evaluated in the responses from 307 schools was an evaluation of SRO effectiveness. Issued July, 1997.

5. Dickmann, Ellyn, Foster, Ann, & Mowery, Hugh (1997). "School Resource Officer Partnership Evaluation Report Number 4," Research and Development Center for the Advancement of Student Learning, Colorado State University. Issued September 5, 1997.
6. Chen, Shu, Chang, Kunlun, and Tombs, Barbara S. (1999). "An Evaluation of School Resource Officer Program in Kansas." Kansas Criminal Justice Coordinating Council, Topeka, Kansas. Issued April, 1999.
7. Rain & Brehm Consulting Group, Inc. (1999). "An Overview Report of the School Resource Officer Program in South Carolina." South Carolina Department of Public Safety. Issued June, 1999.
8. Johnson, Ida M. (1999). "School Violence: The Effectiveness of a School Resource Officer Program in a Southern City" *Journal of Criminal Justice*, vol. 27 no. 2: p. 173-92.
9. Knowles, Jeffrey J. (1999). "A Community-Oriented Response to the Safe Schools Issue: A Three-Year Assessment of Toledo's School Resource Officer Program," Ohio Office of Criminal Justice Services, Statistical Analysis Center. Issued August, 1999.
10. Schuiteman, John G., (2000). "DCJS Evaluation of Grant Funded School Resource Officer Programs." Virginia Department of Criminal Justice Services (DCJS), Richmond, VA. Issued March, 2000.

11. Lambert, Eric; Hogan, Nancy; Barton, Shannon (2000). "Evaluation of the Mecosta County Sheriff Department's School Resource Officer Program," School of Criminal Justice, Ferris State University, Big Rapids, MI. Issued June 6, 2000.
12. Schuiteman, John G., (2000). "School Resource Officer Facts, Findings from the Fall DCJS Survey of Virginia School Resource Officer Programs." Virginia Department of Criminal Justice Services (DCJS), Richmond, VA. Issued June 2000.
13. Foster, Ann & Lila Herndon Vizzard. (Fall, 2000). "School Resource Officer Partnership Evaluation" accessed via Internet: A study of the Poudre School District in Fort Collins, Colorado. Dated July 22, 2000.
14. Lambert, Eric, (2001). "Evaluation of the Mecosta County Sheriff Department's School Resource Officer Program," School of Criminal Justice, Ferris State University, Big Rapids, MI. Issued July 17, 2001.
15. White, Joyce; Zinn, Lynn; Adler, Ellen; Grinder, Elisabeth (2001). "An Evaluation of the School Resource Program: A study of six selected sites from 1998-2000." Central Susquehanna Intermediate Unit is Center for Schools and Communities, funded by the Pennsylvania Commission on Crime and Delinquency (PCCD). Issued August, 2001.

16. Trump, Kenneth. (2001). "2001 NASRO School Resource Officer Survey," National School and Safety Services, National Association of School Resource Officers. Issued 10/05/01o
17. Schuiteman, John G. (2001). "Second Annual Evaluation of DCJS Funded School Resource Officer Programs." Virginia Department of Criminal Justice Services (DCJS), Richmond, VA. Issued December, 2001o
18. Humphrey, John A.; Huey, Meredith P. (2001). "School Resource Officer Effectiveness in New Hampshire: A Longitudinal Study."
19. Wilkerson, Deborah M. H. (2001). "The Relationship Between the School Resource Officer and Patterns of Suspensions from School Due to Violence, Gang Activity, and Substance/Alcohol Abuse," Unpublished Dissertation, Graduate School, Saint Louis University, St. Louis, MO.
20. Arora, Alka (2001). "School Safety Study: Phase I, 2000 - 2001" (ARS 15-231.03), Research and Policy Division, Arizona Department of Education. Completed September, 2001.
21. Fabrey, Carol Ann Smith (2002). "School Resource Officers' Experiences in Middle Schools in Western North Carolina: A Qualitative Study," Published Dissertation, Graduate School, Western Carolina University, Cullowhee, North Carolina. March, 2002.

22. Lambert, Eric; Hogan, Nancy; (2001). "Evaluation of the Mecosta County Sheriff Department's School Resource Officer Program," School of Criminal Justice, Ferris State University, Big Rapids, MI. Issued June 21, 2002.

23. Schuiteman, John G. (2002). "Virginia School Resource Officer Facts II, Findings from the Spring 2002 Canvass of Virginia Law Enforcement Agencies." Virginia Department of Criminal Justice Services (DCJS), Richmond, VA. Issued July, 2002.

24. Arora, Alka (2002). "School Safety Study: Phase II, 2001 - 2002" (ARS 15-231.03), Research and Policy Division, Arizona Department of Education. Completed September, 2002.

25. Trump, Kenneth. (2002), "2002 NASRO School Resource Officer Survey," National School and Safety Services, National Association of School Resource Officers. Issued 10/07/02.

26. U.S. Department of Justice Community Oriented Policing Services (COPS) (2003), "COPS Innovations, Promising Strategies from the Field, A National Overview." Issued March 14, 2003.

27. Trump, Kenneth. (2003), "2003 NASRO National Survey of School-Based Police Officers," National School and Safety Services, National Association of School Resource Officers. Issued August 19, 2003.

28. Miller, Amanda K. and Chandler, Kathryn (2003), "Violence in U.S. Public Schools: School Survey on Crime and Safety, NCES 2004-314, Washington, DC. Issued October, 2003.

School Resource Officer Pending Evaluation Listing

1. Pending: Trump, Kenneth. (2004), "2004 NASRO National Survey of School-Based Police Officers," National School and Safety Services, National Association of School Resource Officers. Anticipated to be issued in October, 2004 following the July 25 – 30, 2004 NASRO Annual Conference in Phoenix, AZ.
2. Pending: U.S. Department of Justice Community Oriented Policing Services (COPS) (2002), "COPS Count Survey." The results of the Fall 2002 survey by a contractor, Vistrionix, of all COPS funded positions was to be available in November, 2002. COPS Grantee Announcement on COPS Website.
3. Pending: National Institute of Justice (NIJ) School Resource Officer Evaluation (2002). The Center for the Prevention of School Violence in North Carolina has received a subcontract from Abt Associates to study five SRO programs. Abt is conducting the national study for the NIJ. This study was to provide findings in November, 2002.
4. Pending: Pennsylvania Commission on Crime and Delinquency (PCCD) (2004). The PCCD has funded a study entitled "SRO Projects Comprehensive

Evaluation.” The study is being conducted by Central Susquehanna and Mercyhurst Universities and is reviewing 22 school districts with PCCD funded SROs. The research will attempt to determine best practices of successful SRO programs with surveys and questionnaires. This PCCD study is scheduled to provide findings on June 30, 2004.

5. Pending: Mississippi Department of Human Services will evaluate school districts that have participated in the School Resource Officer Pilot Program specified in Mississippi House Bill 1457 passed in the 2002 Regular Session of the legislature. The Pilot Program was to commence after July 1, 2002 and include all schools that have been on state probation for failure to meet accreditation standards since July 1, 1999. Other schools designated were those most characterized by poor student academic performance or high crime and delinquency. The Pilot Program was to continue through July 1, 2007. The Pilot Program evaluation will consider SRO effectiveness and address any improvement in academic performance, decrease in violence, student participation in SRO administered programs, and assess the opinions of teachers, administrators, students, and parents toward the SRO program. This evaluation was to be conducted prior to January 1, 2007.

Appendix C: School Resource Officer Evaluation Summaries

Appendix C.1e School Resource Officer Current Evaluation Summaries

1. School Resource Officer Evaluation:

- a. Dates of the Evaluation: December 7, 1995.
- b. Title of the Evaluation: School Resource Officer Partnership Evaluation Report
Number 1
- c. Author of the Evaluation: Ellyn Dickman, Ann Foster, Ed.D., Hugh Mowery,
Ph.D.
- d. Publication of the Evaluation: December 7, 1995.
- e. Location of the Evaluation: Poudre School District R-1, Larimer County, Fort
Collins, Colorado
- f. Type of Evaluation: This partnership evaluation is the first of a series of actual evaluations of the school district's SRO program implementation over the next three years. It was conducted by the Research and Development Center for the Advancement of Student Learning of Colorado State University. The results of the evaluations were to be reported to the Poudre R-1 Board of Education, the Fort Collins City Council, and the Larimer County Commission. These results were to be in the form of formal reports in 1996, 1997, and 1998. The evaluations were to evaluate the success of the SRO Program. The SRO Program was to be implemented through an agreement between the School District, the City, the County Commission, and the Larimer County Sheriff's Office signed in the spring of 1995. Initially, three SROs were to be assigned to the three local high schools by the City of Fort Collins with an additional Sheriff's Deputy assigned to county junior highs and elementary schools. The Officers were assigned for the first semester of the 1995-1996 school year. The first report was to be due in

January, 1996. The evaluation process specified that survey data, SRO Weekly Log data, interview results, and city / county crime statistics were to be used in the process.

The purpose of the SRO implementation was stated to be:

1. To provide a safe learning environment for students.
2. To reduce school violence.
3. To improve school and law enforcement personnel collaboration.
4. To improve relations between the students, the staff, and the law enforcement personnel.

- g. Description of the Evaluation: This initial "evaluation" was simply an agreement on the SRO implementation. It describes the evaluative plan and forms the agreement on the number, location, duties, hours, and goals for the SRO implementation itself. It also provides for the partial funding of the SROs by the school district for three years through the 1997-1998 school year. An evaluation of the SRO Program was required to be performed by the agreeing parties in June of each year.
- h. Strengths of the Evaluation: Although this Evaluation Report Number 1 was not actually an evaluation, it is significant in that, prior to the implementation of an educational "treatment," a process was established to evaluate the success of the program. Also significant, the specific expectations of the SRO were specified.
- i. Significance of the Evaluation: This series of evaluations were the only ones found that were programmatically precise in their specificity prior to actual performance. That this series from Larimer County was the first performed certainly made them unusual in this regard.

2. School Resource Officer Evaluation:

- a. Dates of the Evaluation: First Semester, 1995 – 1996 School Year.
- b. Title of the Evaluation: School Resource Officer Partnership Evaluation Report
Number 2.
- c. Author of the Evaluation: Ellyn Dickman, Ann Foster, Ed.D., Hugh Mowery,
Ph.D.
- d. Publication of the Evaluation: January 29, 1996.
- e. Location of the Evaluation: Poudre School District R-1, Larimer County, Fort
Collins, Colorado.
- f. Type of Evaluation: As described in 1. above, this evaluation consisted of
surveys of parents, students, and teachers, tracking of city and county statistical
juvenile crime data, interviews (49), and tabulation of the SRO Weekly Log data.
The results were generally positive in the surveys and interviews. The crime and
SRO data were primarily established as baseline information for future
comparisons.
- g. Description of the Evaluation: Surveys, interviews, and crime / SRO data
tabulation. The results of the interviews indicated that there were several areas
for improvement. The suggestion was made that the program needed to expand
into the junior high schools. Another suggestion indicated that the SRO needed
to spend more time with the students in the schools. The surveys were portrayed
as a pre-test although the SROs were already in place. All results were to be
compared with the subsequent evaluations. The city crime data (juveniles 17 and
under) was considered good and will be used as a baseline. The county data
were not usable. Record systems had changed in the county. School site arrests
will be tracked over the next three years for any changes.

- h. Strengths of the Evaluation: The evaluation will rely on both quantitative and qualitative data in arriving at some conclusions as to SRO impact. Again, the establishment of the evaluative process prior to the program implementation is a strength.
- i. Significance of the Evaluation: Evaluation Number 2 indicated some generally positive survey results with fairly good response rates. Parents were 36 percent, High School Staff were 59 percent, and Junior High / Elementary Staff were 54 percent. Seventy percent of the high school students responded that they approved of having a police officer at their school. The student response rate was not indicated (2725 responded).

3. School Resource Officer Evaluation:

- a. Date of the Evaluation: Second Semester, 1995 – 1996 School Year.
- b. Title of the Evaluation: School Resource Officer Partnership Evaluation Report
Number 3.
- c. Author of the Evaluation: Ellyn Dickman, Ann Foster, Ed.D., Hugh Mowery,
Ph.D.
- d. Publication of the Evaluation: June 17, 1996.
- e. Location of the Evaluation: Poudre School District R-1, Larimer County, Fort
Collins, Colorado.
- f. Type of Evaluation: As described in 1 and 2 above, this evaluation consisted of additional post surveys of parents, students, and teachers (Report # 2 was called a pre-survey), more tracking of city and county statistical juvenile crime data, and tabulation of the SRO Weekly Log data. The results were generally positive in the

surveys. No additional interviews were performed. The crime and SRO data were primarily continued as baseline information for future annual comparisons.

- g. Description of the Evaluation: Surveys, and crime / SRO data tabulation. The results of a group (Agreement Jurisdictions - see Report # 1 above) evaluation in February, 1996 indicated that there were several areas for specific improvement to be implemented in the fall of 1996. The suggestions made were that the program needed to include more community information on the SRO Program in utility bills, increase PTA involvement, more media publicity, and an increased general SRO visibility. Another suggestion indicated that the SRO needed to work on developing a security plan for the school. The spring surveys were portrayed as a post-test although the SROs were already in place for the fall pre-test. All survey results continued to be very positive with little overall change in participation rates or results. The city crime data (juveniles 17 and under) was considered good and 1992- 1994 (three years) was used as a baseline. The 1995 – 1996 data showed an increase in arrest rates. This increase was anticipated due to the increased presence of the SROs. They were mostly for traffic violations. The county data continued unusable. Record systems had changed in the county. School site arrests will be tracked over the next three years for any changes. The presence of the SRO may have been a factor in arrests for more serious offenses. In the 1994 – 1995 school year, there were fourteen juvenile arrests for assault, vandalism, stolen property, harassment, and weapons possession. In the 1995 – 1996 school year, that number dropped to seven. The SRO Weekly Logs showed a decrease in trespass and traffic violations from the first to the second semesters. This may be due to the SRO's presence.

- h. Strengths of the Evaluation: The evaluation continued to rely on both quantitative and qualitative data in arriving at some statements as to SRO impact. Again, the establishment of the evaluative process prior to the program implementation was a strength.
- i. Significance of the Evaluation: Evaluation Number 3 continued the positive survey results with good response rates. SRO contact time with the students and staff increased as they became more a part of the school's routine. Student's answers to "I approve of having the police officer" went from 70 percent to 73 percent from pre to post test. Students feeling comfortable with police officers went from 64 percent to 69 percent. Survey response rates were not given.

4. School Resource Officer Evaluation:

- a. Date of the Evaluation: Spring, 1997.
- b. Title of the Evaluation: The North Carolina High School Strategy Survey.
- c. Author of the Evaluation: Joanne McDaniel, Executive Director, Center for the Prevention of School Violence.
- d. Publication of the Evaluation: July, 1997.
- e. Location of the Evaluation: North Carolina.
- f. Type of Evaluation: This was a telephone Survey of all North Carolina High Schools.
- g. Description of the Evaluation: A total of 307 High Schools were surveyed. The response rate was over 70 percent and 67 percent of the respondents were the principal. Of the remaining responders, 29 percent of the total responders were assistant principals. The phone survey concentrated on the six strategies of the Center's "Safe Schools Pyramid." The pyramid has six levels with a wide base

and comes to a point. The survey questions addressed elements of the six horizontal levels forming the pyramid. The pyramid visually portrays a multiple strategy and comprehensive approach to attaining a degree of school safety. The School Resource Officer (SRO) forms the base level and is the foundation of the pyramid, supporting the other five levels. The six levels from the top down are:

1. School Physical Design and Technology Application.
2. Teen Court and Student Court Operations.
3. S.A.V.E. (Students Against Violence Everywhere) Chapter Operation.
4. Conflict Management and Peer Mediation Programs.
5. Law Related Education (LRE) Activities.
6. The School Resource Officer.

The survey attempted to determine which of these strategies are currently being used in North Carolina High Schools. The effectiveness of these six strategies and the use of any other approaches formed the substance of this survey. A summary of the dominant findings follow.

1. School Physical Design and Technology Application:

Hall Monitoring occurred in 88 percent of the schools to maintain control. 74 percent had performed some sort of assessment of their physical layout with over 86 percent of those performed in the last two years. 60 percent had metal detectors and 19 percent had ID cards and controls on student book bags. Only 24 percent used surveillance cameras.

2. Teen Court and Student Court Operations:

Teen Court is associated with the Juvenile Court system. Student Court is associated with the school discipline system. Students are actively involved in both courts. Adults supervise the processes.

Because these Courts are somewhat new approaches, the survey did not show much usage of these venues. 10 percent of responders used a Teen Court and only 2 schools had a functioning Student Court.

3. S.A.V.E. (Students Against Violence Everywhere) Chapter Operation:

SAVE Chapters are school clubs that promote nonviolence in the community. Started in 1989, there are 225 chapters now in North Carolina. Most of these are in the High Schools. 35 percent of the responding High Schools had SAVE Chapters and typically conducted about 4 activities a year.

4. Conflict Management and Peer Mediation Programs:

These strategies allow students to mediate and manage differences between students. Only 18 percent of the schools had conflict management programs while almost 60 percent engaged in peer mediation. Peer mediation was supported by 97 percent of the teachers.

5. Law Related Education (LRE) Activities:

LRE activities are intended to teach students about the importance of the law and to be law abiding citizens. LRE is usually incorporated into the regular curriculum and not as a separate course. Almost all of the schools utilized LRE in their school.

6. The School Resource Officer:

SROs are usually assigned to a school or several schools in close proximity. They are either sheriff's deputies or city police officers. Occasionally they are hired and managed by the school district itself. They perform the three roles of law enforcement officer, conducting LRE, and law-related councilor. They also serve as positive role models for the students. 79 percent of the schools had SROs with 73 percent of these assigned in the last three years. 88 percent of the schools rated their SRO with a 1 or 2 on a seven point likert scale.

- h. Strengths of the Evaluation: This survey had a relatively high response rate from primarily principals or their assistants so the results should be fairly valid. The SRO, of the six strategies, was the strongest indicated in the summary responses for effectiveness in mitigating school violence.
- i. Significance of the Evaluation: In addition to attesting to the significance of the SRO in generating positive feedback from the respondents, the methodology of the survey allows it to be repeated fairly cheaply in subsequent years in order to evaluate change.

5. School Resource Officer Evaluation:

- a. Date of the Evaluation: Both Semesters, 1996 – 1997 School Year.
- b. Title of the Evaluation: School Resource Officer Partnership Evaluation Report
Number 4.
- c. Author of the Evaluation: Ellyn Dickman, Ann Foster, Ed.D., Hugh Mowery,
Ph.D.
- d. Publication of the Evaluation: September 5, 1997.

- e. Location of the Evaluation: Poudre School District R-1, Larimer County, Fort Collins, Colorado.
- f. Type of Evaluation: As described in 1, 2 and 3 above, this evaluation consisted of additional post surveys of parents, students, and teachers (Report # 2 was called a pre-survey), more tracking of city and county statistical juvenile crime data, and tabulation of the SRO's Weekly Log data. The results were generally positive in the surveys. Additional interviews were performed. The crime and SRO data were primarily continued as baseline information for future annual comparisons.
- g. Description of the Evaluation: Surveys, interviews, and crimet/ SRO data tabulation. The Fort Collins Police baseline data from 1992 through 1995 was compared with the 1995-1996 and 1996-1997 school years' arrest results. The Larimer County data could not be used due to the change of record keeping systems during that time period. All survey results continued to be very positive with little overall change in participation rates or results. The city crime data (juveniles 17 and under) was considered good and 1992 – 1994 (three years) was used as a baseline. The 1995 – 1996 data showed an increase in arrest rates. This increase was anticipated due to the increased presence of the SROs. They were mostly for traffic violations. The presence of the SRO may have been a factor in arrests for some of the more serious offenses. In the 1995 – 1996 school year, there were 38 middle school juvenile arrests. In the 1996 – 1997 school year, that number increased to 55. In the 1995 – 1996 school year, there were 94 high school juvenile arrests. In the 1996 – 1997 school year, that number increased to 139. The increase in the high school numbers was due to the new smoking policy as 36 of those were due to smoking violations. The

supposition is that as the arrest rate goes up due to the continuous presence of the SRO, a safer school environment results. The interview results were also positive. Communication, collaboration, and interactions with students by the SROs have all improved. Students and parents also indicated high levels of acceptance of the SRO. The evaluation recommended increasing the number of assigned SROs within the school district.

- h. Strengths of the Evaluation: The evaluation continued to rely on both quantitative and qualitative data in arriving at many of the statements as to SRO impact. Again, the establishment of the evaluative process prior to the program implementation continued to be a strength.
- i. Significance of the Evaluation: Evaluation Number 4 continued the positive survey results with good response rates. SRO contact time with the students and staff increased as they became more a part of the school's routine. Student's answers to "I approve of having the police officer" went from 73 percent to 77 percent from pre to post test. Two more years were planned for evaluations in this report. The 1997-1998 school year and the 1998-1999 school year. These evaluations were not performed. A year six review was performed for the 1999-2000 school year and issued in the Fall of 2000. This was the final Poudre School District Evaluation and is reviewed as # 13 in this report.

6. School Resource Officer Evaluation:

- a. Date of the Evaluation: April, 1998 Survey, 1997 – 1998 School Year.
- b. Title of the Evaluation: AN EVALUATION OF SCHOOL RESOURCE OFFICER PROGRAM IN KANSAS.
- c. Author of the Evaluation: Shu Chen, Kunlun Chang, Barbara S. Tombs.

- d. Publication of the Evaluation: April, 1999.
- e. Location of the Evaluation: Shawnee Mission School District, Overland Park, Shawnee, and Mission, Kansas (Kansas City Suburbs).
- f. Type of Evaluation: The evaluation was a survey with questionnaires sent to students, teachers, and SROs in selected middle and high schools. The SRO program was initiated in 1993 and later expanded to include all middle and high schools. The District has seven middle schools and five high schools. Four schools were chosen for the survey, 2 middle and 2 high schools. Cluster and stratified sampling techniques yielded a return by 550 students (69 percent) and 162 teachers (81 percent). Since there were so few SROs at the four schools, all seventeen SROs in Johnson County were sent questionnaires and all the SROs (100 percent) returned them.
- g. Description of the Evaluation: The survey was structured to measure six outcome measures that reflected the effectiveness of the SRO program. These six dependent variables to be measured were:
 - a. Perception of School Safety
 - b. Attitudes Toward Police
 - c. Student Behavioral Response towards the SRO Program
 - d. Knowledge Gain on Crime Laws and Penalties
 - e. The School-SRO Partnership
 - f. Participant Satisfaction towards the SRO Program

Each item was measured with 5 or 6 questions. The questionnaires were mailed in April, 1998 and results were analyzed using ANOVA, ANCOVA, and MANOVA techniques. The independent variables factors) were gender, race, and school

levels (grade). The results of the survey showed that on all the factors, the students felt less positive than the SROs and teachers and the SROs and teachers tracked together on their responses. On school safety, the student responses indicated that the presence of a police officer caused them to be more fearful than the teachers/SROs or they started with a higher safety fear initially. The difference in perception of safety (students lower) was statistically significant. Also, on the second factor, attitudes towards police, the students had a significantly less positive attitude towards the police in the schools than the teachers/SROs. On the behavior factor, again, the students were significantly lower than the teachers/SROs on whether the presence of the SROs changed behaviors for the better. This may be more perception than reality. The evaluation of some quantitative discipline data in conjunction with the survey could have provided some additional results. Again, the students were significantly lower on the crime law knowledge gain and a positive school SRO partnership factors. On the final sixth factor, the teacher/SRO responses were again significantly higher than students on the SRO program satisfaction questions.

- h. Strengths of the Evaluation: The survey broke down the comparisons much more than indicated here and provided some interesting data on the subgroups. Comparison of some quantitative data and the addition of a control school without an SRO would have made this evaluation stronger. Interestingly, female students were significantly more positive in their responses on five of the six measures. In conclusion, the survey data did form a solid body of evidence that could serve as a baseline for a subsequent longitudinal study in the district.

- i. Significance of the Evaluation: The major finding to this reviewer was the consistent difference on all issues between the students and the teachers/SROs. The less favorable feelings by the students indicates that the students may see a lot more violence, weapons possession, or bullying behavior than the adults. To the students, the mere presence of an SRO in their school may be sending the message that the adults must think their school is “dangerous.”

7. School Resource Officer Evaluation:

- a. Date of the Evaluation: School Years 1996-97, 1997-98, and 1998-99.
- b. Title of the Evaluation: Evaluation Report; South Carolina Department of Public Safety School Resource Officer Program.
- c. Author of the Evaluation: Catherine E. Brehm and Jeffrey S. Rain, Ph.D.
- d. Publication of the Evaluation: June, 1999.
- e. Location of the Evaluation: South Carolina.
- f. Type of Evaluation: This evaluation was originally proposed as a quasi-experimental study but was limited by the quality of the data. This is not unusual in this type of study. The schools studied were schools that had received funds from the Byrne Memorial Fund to implement SRO programs. The funds went to 35 law enforcement agencies at 53 schools which resulted in 80 SRO positions being implemented. The overall program was managed by the South Carolina Department of Public Safety. The study evaluated these 35 agencies in three cohorts over three years. The first cohort began in July, 1996 (C96), the second in July, 1997 (C97), and the third in July, 1998 (C98) for one, two, and three years duration respectively. Some agencies (4) were funded earlier and they

were included in C96. All the SROs collected data quarterly. New and archival data were collected from the South Carolina Department of Public Safety, the Department of Education, and the schools themselves. Juvenile Offender data from the Uniform Crime Reports (UCRs) was also used. SROs received a training survey in addition.

g. Description of the Evaluation: The evaluation was structured to answer five key questions that reflected the effectiveness of the SRO program. These five questions to be evaluated were:

1. Are the SROs being used in accordance with the intent of the program?
2. Are the SROs receiving adequate training?
3. Are the SROs providing appropriate documentation for program evaluation?
4. Has the SRO Program reduced reported crime incidents at school?
5. Has the SRO Program improved relations between students and the Police?

The first three questions involved program implementation effectiveness. The last two related to SRO impact measurement.

Question #1: The SRO implementations proceeded thru a three year sequence as evidenced by the cohorts. The first year saw a basic implementation of services, the core programmatic elements. The second, these core elements were ingrained into the school programs. The third year, predictably, saw a stabilization and institutionalization of the implementation elements. Over the three years of the SRO implementation, arrests increased by 320 percent, expulsions by over 1000 percent, and suspensions by 4,000 percent.

Interestingly, the authors do not comment on these increases at this point. The increased SRO presence was probably a factor.

Question #2: SROs received the required training. There were some areas where they felt their training was not adequate. Specifically, they indicated more training was needed in exceptional students, sexual harassment, recognizing sexual abuse, drug education, gang prevention, and counseling.

Question #3: The SROs provided numbers of crime incidents, students receiving law and gang education, offender dispositions, referrals to external agencies, SRO training received, and conferences (parents, teachers, and students). All data were provided as required, however, more specific breakdowns of the data would have been more helpful.

Question #4: The crime incident data collected by the SROs covered seven categories; fighting, theft, vandalism, substance abuse, substance possession, weapons violations, and gang activity. The data were adjusted to cohort years (called adjusted years) rather than calendar years for better comparisons.

Aligning the data by calendar year combined the data totals with schools with SROs in their first year with those with SROs in their third year for example. The results were inconclusive. Some indicators exhibited a V shape (up then down) over the three years, others an inverted V shape. Still others varied even differently. Since only district level and not school level data were maintained, schools with and without SROs could not be compared. District data showed that districts with SROs in some of their schools had higher reporting rates (incidents per 100 students) than districts without any SROs. This is probably due to the SRO presence.

Question #5: No survey information was available across the SRO implementation that measured student acceptance of the SRO program. Eleven of the SROs conducted their own surveys of varying sizes which showed a high (over 80 percent) feeling that the SRO presence made the school safer, was a good idea, and the students knew the SRO's name.

- h. Strengths of the Evaluation: This evaluation provides some groundwork within South Carolina to study the overall impact of SROs in the schools. It had elements of both quantitative and qualitative data assessment to triangulate results.
- i. Significance of the Evaluation: The use of cohorts was a good technique on the incident data. Better pre-planning of what data, particularly survey data, was to be collected is indicated. Collection of data by school would have allowed more analysis of the SRO incident data relative to the SRO presence. County or city juvenile crime data changes would have been possibly more revealing as to SRO impact within the schools.

8. School Resource Officer Evaluation:

- a. Date of the Evaluation: 1995 – 1996 School Year.
- b. Title of the Evaluation: School Violence: The Effectiveness of a School Resource Officer Program in a Southern City.
- c. Author of the Evaluation: Ida M. Johnson.
- d. Publication of the Evaluation: Journal of Criminal Justice, Vol. 27 No. 2: pp. 173-92, 1999.
- e. Location of the Evaluation: Only identified as a School District in a Southern City (The city was not identified).

- f. **Type of Evaluation:** The evaluation was a study to determine if the placement of SROs impacted the levels of violence within middle and high schools in the subject city. The city had part time officers patrolling various schools beginning in 1983. In conjunction with a 1995 federal grant, the full time SRO program was initiated in January, 1996. It began with the placement of 18 officers in 9 high schools and 18 middle schools. The evaluation consisted of an SRO questionnaire, teacher and student interviews, and the analysis of SRO reported weekly incident reports and suspension data.
- g. **Description of the Evaluation:** The evaluation had both quantitative and qualitative elements. Observations were combined with data and survey analyses to answer two research questions. First, was the SRO program successful in meeting program goals of creating a safe learning environment? Secondly, what components of the SRO program were working as envisioned? Four of the high schools and one middle school were chosen for interviews of selected administrators, teachers, and students (approximately 70 total interviews). The interviews were conducted in the summer and fall of 1996. Weekly SRO incident reports were submitted during the spring, 1996 semester. These reports captured the number of arrests, drug activities, gang investigations, vehicle searches, locker searches, weapons incidents, trespassers, classes given, and student / teacher counseling sessions held. Finally, school disciplinary data (suspensions) were collected. A parallel development was that all the schools in the study went to school uniforms during the Fall, 1995 semester. The total enrollment of the city's middle and high schools was approximately 22,000 students. At a point in the study, the number

of SROs unexplainably decreases to 17 from 18 and back to 18 in the conclusions.

The majority of the SROs reported in the surveys that the number of disciplinary incidents decreased since the implementation. School administrators, teachers, and students had similar survey results. Overall, the survey results were very positive towards the SRO program. Three years of high school suspension and serious offense data indicated an overall decrease in those areas since the SROs were placed. Data from school years 1994-1995, 1995-1996, and 1996-1997 indicated that the number of occurrences increased in some schools, but the total trend was down. These results were mirrored by the middle schools. Both school type overall trends were substantiated by the survey data where respondents generally felt that crime was down and student behavior was better since the SROs were placed.

- h. Strengths of the Evaluation: The combination of qualitative and quantitative data did not, of course, show any causality, but it demonstrated a strong case for the positive aspects of an SRO presence. The timing of the school uniform policy could have provided the same effects however. A stronger research design could have compared the suspension and offense data with non-SRO schools within the same school years. Also, comparisons of more pre 1996 and post 1996 year data would have established stronger baselines for comparison. Statistical treatment of the quantitative data would have been helpful to the conclusions.
- i. Significance of the Evaluation: This evaluation was a good attempt to combine quantitative and qualitative data to demonstrate the impacts of an SRO presence in a number of schools. The author's approach, when combined with today's

data, particularly achievement data, and some statistical manipulations would provide a strong research design.

9. School Resource Officer Evaluation:

- a. Date of the Evaluation: August, 1999.
- b. Title of the Evaluation: A Community-Oriented Response to the Safe Schools Issue: A Three-Year Assessment of Toledo's School Resource Officer Program.
- c. Author of the Evaluation: Jeffrey J. Knowles.
- d. Publication of the Evaluation: Ohio Office of Criminal Justice Services, Statistical Analysis Center, August, 1999.
- e. Location of the Evaluation: Toledo, Ohio School System.
- f. Type of Evaluation: This evaluation consisted of two surveys completed in late 1996 / early 1997 and late 1998. The 1997 survey was administered to the 17 SROs assigned to the city's junior and senior high schools. Also surveyed were approximately 1600 students and 100 teachers and administrators. The 1998 survey was given to 19 SROs, 1290 students, 131 teachers and administrators.
- g. Description of the Evaluation: The two surveys had approximately 40 questions and were very similar. Many of the questions were identical between the surveys. The response rate for the 1998 survey was 72 percent. The surveys were funded by a Byrne Memorial Grant from the Ohio Office of Criminal Justice Services. The findings of both surveys indicated strong support for the SRO presence by all parties. Increasing concern for gang activity and growing rapport between SROs and students were among the findings.

- h. Strengths of the Evaluation: The surveys were used to not only indicate school support from the at school populations, but also to justify the SRO program within Toledo's budget process as indicated by news articles that were attached to the study by the Project Evaluator (Mr. Knowles).
- i. Significance of the Evaluation: The major finding was the difference between the students and the teachers perceptions on whether a student would report a crime to the SRO. Students agreed that most students would not report a crime 61 percent of the time while only 7 percent of administrators and 26 percent of teachers felt most students would not report a crime.

10. School Resource Officer Evaluation:

- a. Date of the Evaluation: January, 1999 – July, 1999.
- b. Title of the Evaluation: Department of Criminal Justice Services Evaluation of
Grant Funded School Resource Officer Programs.
- c. Author of the Evaluation: John J. Schuiteman, Ph.D.
- d. Publication of the Evaluation: March, 2000.
- e. Location of the Evaluation: Fifty eight (58) SROs in forty one (41) Localities in
Virginia.
- f. Type of Evaluation: This evaluation used data submitted by the SROs and surveys of school staff and students. The SROs provided SRO Quarterly Activity Reports and Student Incident Reports. These data were provided as a condition of the SRO grants provided by the state. The surveys were designed by PolicyWorks, Ltd., a consulting firm located in Richmond, Virginia. The survey results were collated and analyzed by the Crime Prevention Center (CPC) unit of

the Department of Criminal Justice Services (DCJS) of Virginia and PolicyWorks, Ltd.

- g. Description of the Evaluation: The surveys were given to 2,067 school staff members and 11,864 middle and high school students. The SROs provided 3,244 Student Incident Reports (SIRs) and 104 SRO Quarterly Activity Reports (QARs) from the 1998-1999 school year. The findings from the data are summarized below.

1. Student Survey Data: The student survey was a one page form that asked questions about the criminal behavior students were exposed to while at school and at school sponsored events. The survey also asked students about their fears of being the target of various crimes. Seventy eight percent of the students felt somewhat or very safe at school. Females and urban students were lower than others in this measure. Students (32 percent) were most concerned about crime in bathrooms and parking lots. Hallways were indicated 31 percent of the time while classrooms (11 percent) were the lowest category. In the last six months, 35 percent of the students had items stolen. Students, in general, were exposed to more criminal activity than the staff. Seventy one percent reported seeing other students who were punched, slapped, or kicked at school.
2. Staff Survey Data: The staff felt safer at school than the students. Eighty five percent reported feeling safe or somewhat safe. The staff also felt safer at the various school locations. Only 17 percent felt unsafe in the bathrooms and 9 percent in

the classrooms. The staff was very positive in their support of the SRO presence in their schools. Those indicating a strong agreement with having a SRO totaled 90 percent. Additionally, another 6 percent just agreed with having the SRO. Staff support increased as their interaction time with SROs increased.

3. Student Incident Reports (SIRs) Data: The SIR data occurred between September, 1998 and June, 1999. The 3,244 incidents cataloged as either a person or property crime and whether the incident was drug or gang related. Forty eight percent were crimes against persons, 18 percent were property crimes, 10 percent were drug related, 2 percent were gang related, and the remaining 32 percent were in other categories (profanity, tobacco, and, truancy). The largest percentage of school code violations was for tobacco (19 percent), followed by disorderly conduct (14 percent). The offenses occurred mostly outside school buildings (31 percent) and in the classrooms (24 percent). Only 7 percent took place in the bathrooms. Fifty percent resulted in a suspension and/or the filing of a criminal report.
4. SRO Quarterly Activity Reports (QARs) Data: The 56 SROs provided 104 QARs during the spring semester of the 1998-1999 school year. These reports chronicled the use of the SRO between the functions of crime prevention, safety audits, counseling, and as instructors in law related educational activities. The results were positive in all areas. The SROs spent

27 percent of their time patrolling the school, 18 percent investigating incidents, and 10 percent on paperwork. The remaining time was divided between meetings, assessments, law related classes, various student activities, and court appearances.

- h. **Strengths of the Evaluation:** This evaluation uses both quantitative and qualitative data. The survey results can form the basis for future evaluations. The SIR and QAR data can also provide the foundation for future quantitative assessments of the Virginia SRO program. Both data forms support each other in indicating the sagacity of implementing an SRO program.
- i. **Significance of the Evaluation:** The provision for the collection of the data were provided as part of the grant requirements. This assured the data would be consistently gathered and provided for the evaluation. The conduct of the evaluation by the state provided the independence needed to assure objectivity. This evaluation would, however, benefit from a more rigorous data collection and some statistical manipulations of the results. Perhaps with future efforts, this can be incorporated.

11. School Resource Officer Evaluation:

- a. **Date of the Evaluation:** 1999 – 2000 School Year.
- b. **Title of the Evaluation:** EVALUATION OF THE MECOSTA COUNTY SHERIFF DEPARTMENT'S SCHOOL RESOURCE OFFICER PROGRAM.

- c. Author of the Evaluation: Eric Lambert, Nancy Hogan, Shannon Barton. School Of Criminal Justice, Ferris State University, Big Rapids, Michigan.
- d. Publication of the Evaluation: June 6, 2000.
- e. Location of the Evaluation: Three High Schools in Mecosta County, Michigan.
- f. Type of Evaluation: The evaluation consisted of a survey provided to school staffs and incident data collected the year before and the year of the SRO program. The survey and incident data were collected from the high schools where the SRO spent most of his time. One school was dropped because that school obtained their own SRO from another grant. The evaluated schools (grades 9-12) were the Big Rapids, Chippewa Hills, and Morely-Stanwood High Schools. All three schools are part of the Mecosta-Osceola Intermediate School District. The funding for both the SRO and the evaluation was a Byrne Memorial Grant. Receipt of the grant required the evaluation.
- g. Description of the Evaluation: The incident data were not used due to inconsistencies in the collection of that data by the schools involved for the years involved. The evaluation then determined to use only the survey data. Inconsistent and difficult to obtain incident data is a common problem with these evaluations. A total of 135 surveys were sent out and 93 were returned (69 percent response rate). Seventy seven percent of the responders were teachers. The survey asked school staff their perception of various school problems for the 1998-1999 school year and the 1999-2000 school year on a four choice Likert scale. Fourteen areas of school concerns were evaluated. Categories such as tardiness, absenteeism, conflicts, drug use, weapons use, and abuse were used. Means differences indicated significant increases (alpha = .05) were indicated in

all areas on before and after SRO survey measures. The school staffs were also surveyed on their perception of the SRO impact on student behavior during the 1999-2000 school year. The majority of responses (57 percent) indicated the students felt safer with the SRO presence. Realizing that this survey was for the effects of one SRO dividing his time between three schools, one survey question asked if the program should be expanded to more schools. A large majority indicated positive responses on this issue.

- h. **Strengths of the Evaluation:** Again, the provision for an evaluation with an SRO implementation is a plus. The survey, however, asked for opinions in two consecutive years at the same time and then compared them statistically. This comparison would have been stronger if the survey itself could have been administered within the two years. Also, the loss of the quantitative data sources was unfortunate. It points out the importance of planning evaluations sufficiently in advance so that the data sources are valid and reliable.
- i. **Significance of the Evaluation:** The major finding to this reviewer was that this school system was able to show the positive impact of just one SRO assigned to three schools with a relatively simple survey.

12. School Resource Officer Evaluation:

- a. **Date of the Evaluation:** December, 1999 – January, 2000.
- b. **Title of the Evaluation:** School Resource Officer Facts; Findings from the Fall 1999 Department of Criminal Justice Services Survey of Virginia School Resource Officer Programs.
- c. **Author of the Evaluation:** John J. Schuiteman, Ph.D.
- d. **Publication of the Evaluation:** June, 2000.

- e. Location of the Evaluation: Localities in Virginia (129) that sponsored an SRO Program at the end of 1999. These SRO programs had a combined total of 427 SRO positions with 425 of them filled at the time of the survey.
- f. Type of Evaluation: The evaluation was a telephone survey that basically validated the extent of SRO implementations in Virginia.
- g. Description of the Evaluation: The survey asked eleven basic questions on local SRO deployment and presented the information in tabular format. Interestingly, 30 percent of the SRO programs had been in place less than a year. Sheriff's programs constituted 62 percent of the total and 93 percent of the SROs had received formal SRO training. The survey concluded with an update form to be submitted if there was a change.
- h. Strengths of the Evaluation: The survey provided basic information on SROs and became an up to date resource on state SROs.
- i. Significance of the Evaluation: This survey did not evaluate any programs and simply provided basic information on SROs in Virginia.

13. School Resource Officer Evaluation:

- a. Date of the Evaluation: Both Semesters, 1999 – 2000 School Year.
- b. Title of the Evaluation: School Resource Officer Partnership Evaluation Report.
- c. Author of the Evaluation: Ann Foster, Ed.D., Lila Herdon Vizzard, M.P.H.
- d. Publication of the Evaluation: Fall 2000.
- e. Location of the Evaluation: Poudre School District R-1, Larimer County, Fort Collins, Colorado.
- f. Type of Evaluation: Similar to the evaluations described in 1, 2, 3 and 5 above, this evaluation consisted of surveys of parents, students, and teachers, SRO's

weekly log data, and focus group interviews. The evaluation was to determine how well the three SRO partnership goals were met. This evaluation assessed the sixth year of the SRO program in the Poudre School District. This was the final evaluation of this jurisdiction. The SRO program was increased from four to eight SROs and expanded into the middle schools in addition to the high schools. The SRO program goals were to provide a safe learning environment and reduce school violence, improve external interactions with law enforcement authorities, and to improve relations between students, staff, and police at the schools.

g. Description of the Evaluation: The data gathering instruments focused on six response categories to assess if the goals were being met or not. These were the safe learning environment, program knowledge, interactions, personal safety, program satisfaction, and collaboration. A summary of the results of the evaluation follow below.

1. Safe Learning Environment: SRO logs indicated numerous arrests, weapons confiscations, and drug summons. Activity increased as the year progressed. Student surveys indicated 70 percent felt the SRO was a positive addition to the safety environment.
2. Program Knowledge: Parents and students understood the law enforcement aspects of the SRO's job. The other aspects of prevention and law knowledge presentations were not well known.
3. Interactions: Most students indicated that they had not observed a crime at school and about half of those who did were reluctant to report it to the SRO. Junior high students were more comfortable reporting problems to the SRO than high school students. School staff and parents were positive on their interactions with their SRO.

4. **Personal Safety:** Both junior and senior high students felt their property and persons were as safe to a lot safer with the SRO present. High school and junior high parents were strongly in agreement (88 percent to 90 percent) that the SRO should be an integral part of school safety planning.
 5. **Satisfaction:** Parents seemed more positive towards the SRO program than the staff although both agreed on the program merits. SRO interactions with the SRO were split between positive and negative results. Some of the commenters indicated that the SRO money could be better spent elsewhere.
 6. **Collaboration:** Some parents wanted to serve as a gatekeeper to their students interaction with the SRO. The school administrators were perceived as the gatekeeper between the SRO and that school's culture.
- h. Detailed findings from this final evaluation resulted in an action plan to improve the SRO program.
 - i. **Strengths of the Evaluation:** This evaluation was used to formulate an action plan to improve the program. The evaluation itself did not appear as rigorous as the previous efforts.
 - j. **Significance of the Evaluation:** The 1997-1998 and the 1998-1999 school year evaluations were not performed. This year six review performed for the 1999-2000 school year would have been a good opportunity to replicate the earlier Poudre School District evaluations and evaluate the quantitative and qualitative changes over the intervening years. This was the final Poudre School District Evaluation.

14. School Resource Officer Evaluation:

- a. Date of the Evaluation: 2000 - 2001 School Year.
- b. Title of the Evaluation: EVALUATION OF THE MECOSTA COUNTY SHERIFF DEPARTMENT'S SCHOOL RESOURCE OFFICER PROGRAM.
- c. Author of the Evaluation: Eric Lambert, Assistant Professor, School of Criminal Justice, Ferris State University, Big Rapids, Michigan.
- d. Publication of the Evaluation: July 17, 2001.
- e. Location of the Evaluation: Three High Schools in Mecosta County, Michigan.
- f. Type of Evaluation: This evaluation was a continuation of the 1999-2000 survey evaluation effort reviewed earlier. That evaluation consisted of a survey provided to school staffs and incident data collected the year before (1998-1999) and the year of the SRO program (1999-2000). The survey and incident data were collected from the high schools where the SRO spent most of his time. The evaluated schools (grades 9-12) were the Big Rapids, Chippewa Hills, and Morely-Stanwood High Schools. All three schools are part of the Mecosta-Osceola Intermediate School District. The funding for both the SRO and the evaluation was a Byrne Memorial Grant which was continued for a second year. Receipt of the grant required another evaluation. It was decided to again use a survey similar to the first so the results could be compared.
- g. Description of the Evaluation: A total of 135 surveys were again sent out and 61 were returned (45 percent response rate). The lower response rate was probably due to being mailed late in the year and that it was the second year a response was requested. Seventy four percent of the responders were teachers. The survey asked school staff their perception of various school problems for the

2000-2001 school year on a four choice Likert scale. Fourteen areas of school concerns were again evaluated. Categories such as tardiness, absenteeism, conflicts, drug use, weapons use, and abuse were used. Means differences indicated decreases in all areas on second year SRO survey measures compared with the initial year returns.

- h. Strengths of the Evaluation: Again, the grant provision for an evaluation with an SRO implementation is positive. The lack of quantitative data sources was again unfortunate. Had the first evaluation included valid and reliable quantitative data, the evaluation conclusions could have been better supported.
- i. Significance of the Evaluation: The major finding is that this school system was able to show, with relatively simple consecutive surveys, a continued positive impact of having just one SRO assigned to three schools.

15. School Resource Officer Evaluation:

- a. Dates of the Evaluation: 1998 - 1999 and 1999 - 2000 School Years.
- b. Title of the Evaluation: An Evaluation of the School Resource Officer Program: A Study of Six Selected Sites from 1998 – 2000 (Infobase of State Activities and Research: # 2112).
- c. Author of the Evaluation: Joyce White and Lynn Zinn.
- d. Publication of the Evaluation: August, 2001.
- e. Location of the Evaluation: SRO staffed schools in six different school districts in Pennsylvania.
- f. Type of Evaluation: The evaluation was funded with federal money by the Pennsylvania Commission on Crime and Delinquency (PCCD). Surveys were conducted in the Spring of 1999 and 2000 of students, parents, and teachers in

the SRO schools. Students were surveyed a third time in the Fall of 1999. The project completed in December of 2000.

- g. Description of the Evaluation: The Pennsylvania SRO Program itself was initiated with funding from the PCCD in 1997. SROs were placed at the six pilot sites in September of 1998. The PCCD also funded the evaluation of the program at the six pilot sites. The evaluation was conducted by Center for Schools and Communities (CSC), a division of the Central Susquehanna Intermediate Unit, a research organization. The research design and statistical analyses were conducted by Diagnostics Plus, another research organization in State College, Pennsylvania. The surveys were given and the results tabulated and reported by the CSC. The schools, two middle schools, two high schools, and two middle / high school combinations, were located in Abington, Bensalem, and North Fayette Townships and the cities of York, Reading, and Oil City. The SROs received one week of training.

The purpose of the surveys was to evaluate the students' perceptions of safety and changes in safety at the schools, student attitudes towards the SRO and any changes in these attitudes, and assess the same changes in parents or staff members. T tests of survey means differences were calculated and significant differences were discussed. Each survey was profiled and results given. Student, parent, and staff responses were positive towards the SRO's presence and improved with time on the major questions. One indicator that was less positive with time was the percentage of students that stayed home at least once out of fear during the school year. This was probably not an SRO related issue and may have been more due to cultural factors outside the school. The study also utilized the Analysis of Variance (ANOVA) techniques to assess

perceptions of harm across different groups. ANOVAs are comparisons of means differences between groups. The groups were teachers, parents, junior high students, and senior high students. The response means on ten questions were compared and the study discusses the results that were statistically significant. Of the results that were significant (.01) from the four groups in ten areas, junior high students felt in half of them that threats (other student threats, fighting, weapons threats, gang activity, and hate activity) things were worse in junior high than as perceived by students in senior high.

- h. Strengths of the Evaluation: The surveys utilized both quantitative and qualitative elements. The analyses were part of a formal research design that was predetermined and part of the implementing funding. Comparisons between the schools or with non SRO similar schools would have been interesting.
- i. Significance of the Evaluation: The results of the evaluation followed the results of other evaluations and form the basis for future surveys in both those schools and others in Pennsylvania.

16. School Resource Officer Evaluation:

- a. Date of the Evaluation: July 15 – 20, 2001.
- b. Title of the Evaluation: 2001 National Association of School Resource Officers (NASRO) School Resource Officer Survey (first).
- c. Author of the Evaluation: Curtis Lavarello and Kenneth S. Trump.
- d. Publication of the Evaluation: October 5, 2001.
- e. Location of the Evaluation: 11th Annual NASRO Conference in Miami, Florida.
- f. Type of Evaluation: The evaluation was the result of collaboration between Mr. Lavarello and Trump to administer the first survey of a significant number of

SROs. Mr. Lavarello is the Executive Director of NASRO and Mr. Trump is President of National School Safety and Security Services. The developed professional industry survey was given to 1000 SRO registrants and a total of 689 were returned (69 percent). The authors emphasized that the survey was not an academic research effort, but an industry instrument. The survey did, however, represent the first effort to assess a wide number of SROs themselves on SRO and school safety issues. NASRO had approximately 7,000 members plus at the time of the survey.

- g. Description of the Evaluation: The survey asked 61 questions on various aspects of school security and safety implementation issues. The survey reported numerous results as percentages of SROs that felt that this or that question result was the case from their perspective. The major findings were two in number. The SROs felt that clearly their presence improved school safety and that school crime had been under reported to the police prior to their arrivals, but their presence improved that reporting. Interestingly, two thirds of the SROs said they have prevented assaults on faculty and almost a quarter had disarmed someone with a gun on campus. Ninety seven percent of SROs are armed. It is clear from the survey results that SROs are making a positive difference at their schools.
- h. Strengths of the Evaluation: This survey was a simple evaluation of a relatively large number of SROs on the issues that affect them and that they can influence. These results can be built on and added to in future years. Since it is SROs reporting on themselves, evaluation of the results should consider this possible influence on the findings. A stronger research design would marry incident statistics with or without the SRO presence.

- i. Significance of the Evaluation: The survey was the first of its kind and provides a good insight to the issues from the SRO's perspective. Other evaluations from outside the SRO community directed at the SRO would be beneficial.

17. School Resource Officer Evaluation:

- a. Date of the Evaluation: Fiscal Year (FY) 1999 – 2000.
- b. Title of the Evaluation: Second Annual Evaluation of Department of Criminal Justice Services Funded School Resource Officer Programs.
- c. Author of the Evaluation: John J. Schuiteman, Ph.D.
- d. Publication of the Evaluation: December, 2001.
- e. Location of the Evaluation: Seventy eight (78) SROs programs in Virginia.
- f. Type of Evaluation: This evaluation used data submitted by the SROs and surveys of school staff and students. The SROs provided SRO Quarterly Activity Reports and Student Incident Reports. These data were provided as a condition of the SRO grants provided by the state. The survey results were collated and analyzed by the Crime Prevention Center (CPC) unit of the Department of Criminal Justice Services (DCJS) of Virginia.
- g. Description of the Evaluation: The surveys were given to 4,813 school staff members and 36,625 middle and high school students. The SROs provided 8,889 Student Incident Reports (SIRs) and 360 SRO Quarterly Activity Reports (QARs) from July 1, 1999 to June 30, 2000 (FY 2000). The findings from the data in the four major topical areas are summarized below.
 - 1. The Scope and Nature of School Crime: The survey asked questions about the criminal behavior students and staff were exposed to while at

school and at school sponsored events. The survey also asked students and staff about their fears of being the target of various crimes. Eighty five percent of the students felt somewhat or very safe at school. The staff felt safer at school than the students. Ninety six percent reported feeling safe or somewhat safe. In the last year, 40 percent of the students and 36 percent of the staff had items stolen during the year. Students, in general, seemed to be exposed to more criminal activity than the staff. Seventy percent reported seeing other students who were punched, slapped, or kicked at school. The SIRs indicated that 50 percent of the crime was against persons and 50 percent occurred in parking lots or classrooms. Fifty five percent of these incidents resulted in suspensions from school, 30 percent were criminal violations, and 32 percent were referred to juvenile court.

2. SRO Efforts to Prevent or Reduce School Crime: The QARs indicated that the SROs were being successful in their efforts to bolster or increase law enforcement activities within their schools. Of the factors that helped law enforcement within the schools, 61 percent mentioned gaining the trust of the staff, students, and the parents. Factors that hindered this effort were surveyed and approximately half indicated overly protective administrators and teachers. In conclusion, SROs felt that they were reducing the level of violence in their school environments.
3. Student and Staff Opinion of SRO Effectiveness: The large majority of the staff (99 percent) and students (91 percent) agreed or strongly agreed that they would support having an SRO in their school. Both students and

staff majorities indicated that the SRO presence in their schools reduced fighting, bullying, and the overall level of fear.

4. Comparing FY 2000 Findings with FY 1999 Findings: The FY 2000 findings tracked with the earlier FY 1999 data. A small positive trend in the level of school safety was noted. This second evaluation is based on much more data than the first and both sets are in agreement.
- h. Strengths of the Evaluation: This evaluation again uses both quantitative and qualitative data. The survey results can form the basis for future evaluations. The SIR and QAR data can also provide the foundation for future quantitative assessments of the Virginia SRO program. Both data forms support each other in indicating the benefits of an SRO program.
- i. Significance of the Evaluation: The provision for the collection of the data again was provided as part of the grant requirements. This assured that the data would be consistently gathered and provided. The conduct of this evaluation by the state provided the independence needed to assure consistency between both of the efforts. This evaluation would benefit from a more rigorous data collection and statistical manipulations of the results. Comparison with school collected or police student data would have been helpful.

18. School Resource Officer Evaluation:

- a. Date of the Evaluation: The 1999 – 2000 and 2000 – 2001 School Years.
- b. Title of the Evaluation: School Resource Officer Effectiveness in New Hampshire: A Longitudinal Analysis.
- c. Author of the Evaluation: John A. Humphrey and Meredith P. Huey.
- d. Publication of the Evaluation: July, 2001.

- e. Location of the Evaluation: Nine High Schools in New Hampshire with Newly Assigned SROs.
- f. Type of Evaluation: The evaluation consisted of three surveys and some concluding interviews with SROs during their second year at their schools. Described as a Pre and Post Longitudinal Survey, the Pre portion of the survey was conducted at the same time the SROs showed up for work. Both students and teachers participated in the surveys. The first survey was conducted during the first week of the 1999 – 2000 school year, the initial year the SROs were assigned. The second survey was conducted during the last week of that same school year. The third and final survey was completed during the spring of the 2000 – 2001 school year, the second year with the SROs assigned.
- g. Description of the Evaluation: The surveys were conducted by JusticeWorks, an element of the University of New Hampshire, under a grant from the New Hampshire Department of Justice. The three survey results were evaluated as follows. The changes between the first and second surveys were tabulated and evaluated. Then the changes between the first and third survey were similarly assessed. Significant changes were discussed as changes in the percent of responders to the various questions. Although the term “significant” was used in describing results, no evidence of statistical testing was in the report. Simple increases in the SRO favorable responses were taken as evidence of a positive change due to the SRO presence. Survey results were categorized into three areas of evaluation. They were the school environment, the student behavioral patterns, and student and teacher attitudes towards the SROs.

Students felt much safer following the SRO's arrival. Of 100 students that felt unsafe in school in the 1999 survey, 66 felt safe in the second (one year) survey

and 68 felt safe in the third survey (two years). Similar improvements in student behavior and attitudes towards the SRO were also reported. For example, of those students who held unfavorable attitudes towards police in the first survey, 33 percent held a favorable view a year later and 61 percent two years later. Weapons carrying, fighting, marijuana smoking, and bullying behaviors all decreased following SRO implementation.

- h. Strengths of the Evaluation: The survey was simple and direct. It could be given in subsequent years to determine further attitudinal changes. Some statistical testing or comparison with responses from schools without SROs would have added to the effort.
- i. Significance of the Evaluation: This series of surveys was determined prior to the implementation of the change (treatment) of adding the SRO to the school environment. A stronger pre treatment survey would have been a Spring 1999 survey in the schools prior to the SRO's arrival.

19. School Resource Officer Evaluation:

- a. Date of the Evaluation: The 1996 to the 2000 School Years.
- b. Title of the Evaluation: The Relationship Between the School Resource Officer and Patterns of Suspensions from School Due to Violence, Gang Activity, and Substance/Alcohol Abuse.
- c. Author of the Evaluation: Deborah M. Holt Wilkerson.
- d. Publication of the Evaluation: Unpublished Dissertation, Graduate School, Saint Louis University, St. Louis, MO. 2001.
- e. Location of the Evaluation: The study was conducted in one high school in southern Illinois. The purpose of the study was to determine if the presence of an

SRO made a statistically significant difference in the number of suspensions due to three types of student infractions. These infractions were substance or alcohol abuse, violence, and gang activity. A second research question was to see if gender was a further factor in the number of suspensions. The presence of the SRO was expected to possibly improve the learning environment to the extent that suspensions due to student misconduct might be less.

The subject high school population assessed consisted of 2500 ninth and tenth graders who attended the school from 1996 through 2000 with and without the SRO. The experimental group consisted of the 1229 students who attended with the SRO assigned from 1998 to 2000. A control group of 1290 students who attended the same school as freshmen and sophomores from 1996 to 1998 without the SRO assigned was used for comparison.

- f. Type of Evaluation: This quantitative evaluation looked at data for the 1996 – 1998 school years prior to the assignment of the SRO and compared that data with the same data for the 1998 – 2000 school years after the arrival of the SRO. The two groups of students were similar in ages and gender representations. The presence of the SRO was the independent variable. The data were analyzed through a chi-squared technique that compared suspension data before and after the arrival of the SRO at the school. The nonparametric chi-squared analysis determines if any differences seen between expected or random suspension frequencies are significant or could be due to just random effects.
- g. Description of the Evaluation: The evaluation performed the chi-squared analyses on the various combinations of groups and offences. The results showed no differences except for one comparison. The number of female

suspensions increased significantly from 15 to 22 after the SRO was assigned.

This was out of a population of approximately 600 females in both the control and the experimental groups.

- h. Strengths of the Evaluation: This was an elegantly simple comparison of longitudinal data from before and after an SRO was assigned to a school. The results were inconclusive, but could be replicated easily by others on a variety of measures. A larger sample of schools with aggregated data, including achievement results, would strengthen the design.
- i. Significance of the Evaluation: The significance of this evaluation is that even though it assessed only one school on only a few measures, it departed from the typical survey template approach in a refreshing manner. More research efforts in the quantitative quasi-experimental design would be refreshing and informative.
- j.

20. School Resource Officer Evaluation:

- a. Date of the Evaluation: 2000 - 2001 School Year in Arizona.
- b. Title of the Evaluation: School Safety Study: Phase I (ARS 15-231.03).
- c. Author of the Evaluation: Alka Arora.
- d. Publication of the Evaluation: September, 2001.
- e. Location of the Evaluation: Approximately 300 randomly selected Public Schools
across Arizona.
- f. Type of Evaluation: The evaluation was conducted by the Research and Policy Division of the Arizona Department of Education. It consisted of both qualitative and quantitative elements. A survey component assessed 317 randomly chosen schools as to their strategies to promote safety in their respective schools. An

interview component assessed 4 school staff in 16 schools (64 total) as to their insights regarding violence and its prevention in the public schools. The schools were a subset of the survey schools. Personnel interviewed included bus drivers, principals, teachers, SROs, and heads of security. Phase I was conducted during the 2000 – 2001 School Year. The surveys and interviews were completed between December, 2000 and February, 2001. A Phase II was planned for the 2001 – 2002 School Year which was to consist of a re-survey of Phase I schools plus in-depth discussions on school safety with student focus groups in four schools.

- g. Description of the Evaluation: The survey portion was patterned after the National Center for Education Statistics' (NCES) School Survey On Crime and Safety so the local results could be compared with national results. The national results were recently issued for the 1999 – 2000 School Year as "Violence in U.S. Public Schools, 2000 School Survey on Crime and Safety." (NCES 2004-314, October, 2003).

The interview portion of the study emphasized the importance of the presence of the SRO to feelings of school safety. The percent of schools with SROs was 45 percent for middle schools and 35 percent for high schools. In those schools, 80 percent of the students felt safe or very safe. The results of the interviews with the five SROs in the study were very positive towards applying the SRO concept to all schools.

- h. Strengths of the Evaluation: The survey's biggest strength was the way it was patterned after the NCES survey questions. The results of the survey were not subjected to any statistical manipulations. Comparisons of SRO schools with non-SRO schools do not appear to have been performed.

- i. Significance of the Evaluation: The Arizona Department of Education has established a consistent baseline with the NCES format survey to be able to compare longitudinally future survey results.

21. School Resource Officer Evaluation:

- a. Date of the Evaluation: Dissertation submitted at Western Carolina University Graduate School on April 22, 2002.
- b. Title of the Evaluation: School Resource Officers' Experiences in Middle Schools in Western North Carolina: A Qualitative Study.
- c. Author of the Evaluation: Carol Ann Smith Fabrey.
- d. Publication of the Evaluation: March, 2002.
- e. Location of the Evaluation: Twenty Three counties in rural western North Carolina. Western Carolina University is located in Cullowhee, North Carolina.
- f. Type of Evaluation: The evaluation was qualitative in nature and consisted of tape recorded interviews with the SROs.
- g. Description of the Evaluation: The evaluation studied the SRO experience from the SRO's perspective. Questions of what experiences were significant in their daily life and what impacts they felt they had on their school's learning environment were investigated.
- h. Strengths of the Evaluation: This evaluation is one of the few qualitative SRO studies that have been performed. The addition of some quantitative elements to assist in the triangulation techniques used by the author.
- i. Significance of the Evaluation: The long term significance of this evaluation will be primarily for those researchers who might be interested in anecdotal accounts of the SRO experience.

22. School Resource Officer Evaluation:

- a. Date of the Evaluation: 2001 - 2002 School Year.
- b. Title of the Evaluation: EVALUATION OF THE MECOSTA COUNTY SHERIFF DEPARTMENT'S SCHOOL RESOURCE OFFICER PROGRAM.
- c. Author of the Evaluation: Eric Lambert and Nancy Hogan, School of Criminal Justice, Ferris State University, Big Rapids, Michigan.
- d. Publication of the Evaluation: June 21, 2002.
- e. Location of the Evaluation: Three High Schools in Mecosta County, Michigan.
- f. Type of Evaluation: This evaluation was a continuation of the 1999-2001 survey evaluation efforts reviewed earlier. Those evaluations consisted of surveys provided to school staffs and incident data collected the year before (1998-1999) and the year of the SRO program (1999-2000). The survey and incident data were collected from the high schools where the SRO spent most of his time. The evaluated schools (grades 9-12) were the Big Rapids, Chippewa Hills, and Morely-Stanwood High Schools. All three schools are part of the Mecosta-Osceola Intermediate School District. The funding for both the SRO and the evaluations was a Byrne Memorial Grant which was continued for a third year. Receipt of the grant required the third evaluation for the 2001 – 2002 School Year. It was decided to again use a survey similar to the first two so the results could be compared. These questions were based on the School Crime Supplement to the National Crime Survey (U.S. Department of Education, 1998). Again, students were not surveyed due to the permissions required due to privacy and their status as minors.

- g. Description of the Evaluation: A total of 135 surveys were again sent out and 85 were returned (63 percent response rate). Seventy eight percent of the responders were teachers. The survey asked school staff their perception of various school problems for the 2001-2002 School Year on a four choice Likert scale. Fourteen areas of school concerns were again evaluated. Categories such as tardiness, absenteeism, conflicts, drug use, weapons use, and abuse were used. Means differences indicated decreases or no changes in behavioral problem areas for the third year measures compared to the second year SRO survey results. Statistically significant improvements ($p=.05$) were noted in four areas. They were student conflicts, thefts over \$10, alcohol use, and teacher physical abuse. Seventy nine percent of respondents indicated that they would like a full-time SRO at their school.
- h. Strengths of the Evaluation: Again, the grant provision for an evaluation with an SRO implementation is positive. The lack of quantitative data sources was again unfortunate. Had the first and second evaluations included more valid and reliable quantitative data, the evaluation conclusions could have been better supported.
- i. Significance of the Evaluation: The major finding is that this school system was able to show the continued positive impact of just one SRO assigned to three schools with relatively simple consecutive survey techniques. The use of U.S. Department of Education questions allowed for comparison with national trends although this was not included in this study.

23. School Resource Officer Evaluation:

- a. Date of the Evaluation: August, 2001 through March, 2002.
- b. Title of the Evaluation: SCHOOL RESOURCE OFFICER FACTS II; FINDINGS FROM THE SPRING 2002 CANVASS OF VIRGINIA LAW ENFORCEMENT AGENCIES.
- c. Author of the Evaluation: John J. Schuiteman, Ph.D.
- d. Publication of the Evaluation: July, 2002.
- e. Location of the Evaluation: Localities in Virginia (145) that sponsored an SRO Program by the end of the 2002 School Year. These SRO programs had a combined total of 501 SRO positions with 499 of them filled at the time of the survey. The localities consisted of 34 City Police Departments, 24 Town Police Departments, 9 County Police Departments, 2 City Sheriff's Offices, and 76 County Sheriff's Offices with an average of 3.5 positions per program.
- f. Type of Evaluation: The evaluation was a telephone survey that basically validated the extent of SRO implementations in Virginia and presented the results as a resource book.
- g. Description of the Evaluation: The survey asked several basic questions about local SRO deployment and presented the information in a tabular format. Results showed that 85 percent of the SROs were male who had an average experience of 10.4 years as an officer. The remaining females had 8.1 years as police officers. Average SRO experience was 2.2 years, indicating the youth of the Virginia program. Police programs constituted 62 percent of the total with Sheriff's programs the balance. These percentages had reversed since the evaluation issued two years earlier. The survey asked how many schools the individual SRO was responsible for covering. Eighty one percent were assigned

to only one school, twelve percent had two schools, and seven percent had three or more schools to patrol. Most of the two school SROs (56 percent) were covering a high school and a middle school together.

- h. Strengths of the Evaluation: The survey provided basic information on SROs and became an up to date resource on state SROs. One of the attributes indicated for each SRO was the years of experience as an SRO. An attached form was to be sent in if the individual SRO information changed.
- i. Significance of the Evaluation: This survey did not evaluate any programs and simply provided basic information on SROs in Virginia for reference.

24. School Resource Officer Evaluation:

- a. Date of the Evaluation: 2001 - 2002 School Year in Arizona.
- b. Title of the Evaluation: School Safety Study: Phase II (ARS 15-231.03).
- c. Author of the Evaluation: Alka Arora.
- d. Publication of the Evaluation: September, 2002.
- e. Location of the Evaluation: Approximately 300 randomly selected public schools
Across Arizona.
- f. Type of Evaluation: The evaluation was conducted by the Research and Policy Division of the Arizona Department of Education. It consisted of both qualitative and quantitative elements. A survey component assessed the same 317 randomly chosen schools used in the Phase I 2000 – 2001 School Year survey. The survey questions assessed their strategies to promote safety in their respective schools. A focus group component was conducted with students and parents regarding violence and its prevention in six (6) selected schools. These schools were a subset of the survey schools. Each focus group consisted of 5

parents and five students. Phase II was conducted during the 2001 – 2002 School Year. The surveys and interviews were completed between November, 2001 and March, 2002.

- g. Description of the Evaluation: The survey portion was patterned after the National Center for Education Statistics' (NCES) School Survey On Crime and Safety so the local results could be compared with national results. The national results were recently issued for the 1999 – 2000 School Year as "Violence in U.S. Public Schools, 2000 School Survey on Crime and Safety." (NCES 2004-314, October, 2003).

The focus group portion of the study emphasized the importance of the presence of the SRO to feelings of school safety. The information from the groups provided anecdotal evidence that gave perspective to the survey results. There was a consensus that SROs assigned to more than one school are spread too thin and more are needed.

- h. Strengths of the Evaluation: The surveys biggest strength was the way it was patterned after the NCES survey questions. The results of the survey were not subjected to any statistical manipulations. Comparisons of SRO schools with non-SRO schools again are not performed. The focus group discussions of school issues are interesting and supportive overall of the SRO programs in Arizona.
- i. Significance of the Evaluation: The Arizona Department of Education has established a consistent baseline with the NCES format survey to be able to compare longitudinally future survey results. It is a good first effort to build upon.

25. School Resource Officer Evaluation:

- a. Date of the Evaluation: July 14 – 19, 2002.
- b. Title of the Evaluation: 2002 National Association of School Resource Officers
(NASRO) School Resource Officer Survey
(this was the 2st annual survey).
- c. Author of the Evaluation: Kenneth S. Trump.
- d. Publication of the Evaluation: September 25, 2002.
- e. Location of the Evaluation: 12th Annual NASRO Conference in Palm Springs,
California.
- f. Type of Evaluation: The evaluation was the second survey of a significant number of SROs Mr. Trump is President of National School Safety and Security Services. The developed professional industry survey was given to 1000 SRO registrants and a total of 658 were returned (66 percent). Of the returned surveys, 37 percent had also completed the previous initial survey instrument. The author emphasized that the survey was not an academic research effort, but an industry instrument that did not necessarily reflect stringent educational standards. The survey did, however, represent a second effort to assess a wide number of SROs themselves on SRO and school safety issues. NASRO had 9,000 plus members at the time. Some questions from the first survey were repeated. The emphasis this year, however, was on terrorism due to the September 11, 2001 World Trade Center and Pentagon terrorist incidents.
- g. Description of the Evaluation: The survey asked 52 questions on various aspects of school security and safety implementation issues. The survey reported numerous results as percentages of SROs that felt that this or that question result was the case from their perspective. The major findings were

three in number. The overwhelming majority of SROs (95 percent) felt that their schools were vulnerable to terrorist incidents. The SROs felt that their presence continued to improve school safety and that school crime had been under reported to the police prior to their arrivals (89 percent), but their current presence improved reporting (91 percent). The SROs (66 percent) felt that needed training opportunities had decreased during the last year. Interestingly, 90 percent of the SROs felt that students were not adequately educated on firearm safety issues. The SROs indicated that 95 percent were armed at school and 99 percent felt students were not at any greater risk due to the firearm's presence while 90 percent felt that an unarmed SRO did put students at greater risk.

- h. Strengths of the Evaluation: This survey was again a simple evaluation of a relatively large number of SROs on the issues that affect them and that they influence. These results can continue to be built on and added to in future years. Since it is SROs reporting on themselves, evaluation of the results should consider this possible influence on the findings. A stronger research design would marry school incident data with or without the SRO presence for comparisons. This second survey was directed towards the lack of school preparedness for terrorism's impacts and SRO training in that area. In this regard, the survey appears to advocate for an issue and, consequently, advances a bias within the question selection process.
- i. Significance of the Evaluation: The survey was the second of its kind and provides good insight to the issues from an SRO's viewpoint. Additional evaluations from without the SRO community and directed towards the SRO would offer more independence.

26. School Resource Officer Evaluation:

- a. Date of the Evaluation: Case Studies from 1996 to 2000.
- b. Title of the Evaluation: COPS INNOVATIONS - Promising Strategies from the Field: A National Overview
(Agreement # 2001-CK-WX-K092).
- c. Author of the Evaluation: Amy Schapiro.
- d. Publication of the Evaluation: March 14, 2003
- e. Location of the Evaluation: San Diego, California and Hollywood, Florida
- f. Type of Evaluation: This evaluation consists of case studies from eleven police departments who received Office of Community Oriented Policing Services (COPS) grants since 1996 to improve community policing. Two of these studies involved SRO placements within local schools. The San Diego, California and Hollywood, Florida Police Departments' studies describe their successes with SRO implementations using COPS funding.

The COPS Office of the U.S. Department of Justice has awarded over \$715 million to in excess of 2,600 police agencies to fund more than 6,000 SROs through its Cops in Schools (CIS) Program. An additional \$21 million has also been provided to train SROs. A CIS grant provides \$125,000 over three years per SRO position. These case studies serve to showcase their respective departments' self reported successes with the SRO programs supported, in part, by these funds.

- g. Description of the Evaluation: The San Diego City Schools Police Department of the San Diego Unified School District had added 19 additional SROs since 1996 with the COPS funding. They are called Campus Police Officers (CPOs) and were assigned to the District's 16 high schools. The balance covered the

remaining middle schools, junior high schools, charter schools, and child development centers. CPOs are employees of the school district. The School District reports a reduction in violence, property crime, loitering, and gang related activities since the CPOs were deployed. No statistical evidence was supplied or cited to support these claims however.

The Hollywood Florida Police Department was able to double its number of SROs from seven to fourteen since 1999. This allowed the Department to assign SROs to cover all its high schools and middle schools with the balance covering two elementary schools each. Once the additional SROs were in place, the District was able to support numerous new programs to improve student school behaviors. The study admits that while improvements are not supported by any statistical data, improvements in student behaviors are universally reported by police and school district management coupled with positive feedback and reduced complaints from the local community.

- h. Strengths of the Evaluation: The case studies presented are all predictably positive towards the COPS Programs. These self reported and selected results have little practical significance to other school districts, police departments, or communities.
- i. Significance of the Evaluation: Unfortunately, with all the tax money being spent on supported SRO positions across the country, no money appears to have been appropriated to evaluate quantitatively the effect of the SRO's presence. Hopefully, future expenditures of this magnitude will include an evaluative element.

27. School Resource Officer Evaluation:

- a. Date of the Evaluation: June 29 – July 4, 2003
- b. Title of the Evaluation: 2003 National Association of School Resource Officers
(NASRO) School Resource Officer Survey
(this was the 3st annual survey).
- c. Author of the Evaluation: Kenneth S. Trump.
- d. Publication of the Evaluation: August 19, 2003.
- e. Location of the Evaluation: 13th Annual NASRO Conference in Orlando, Florida.
- f. Type of Evaluation: The evaluation was the third survey of a significant number of SROs. Mr. Trump, the survey developer, is President of National School Safety and Security Services. The developed professional industry survey was given to 1,100 SRO registrants and a total of 728 were returned (66 percent).
The author emphasized that the survey was not an academic research effort, but an industry instrument that did not necessarily reflect stringent educational research standards. The survey did, however, represent the third effort to assess a wide number of SROs themselves on SRO and school safety issues. The summary results of the two previous surveys are included as Evaluations Number 16 and Number 25. NASRO has approximately 10,000 members.
- g. Description of the Evaluation: The survey asked 20 questions on various aspects of school security and safety implementation issues. This question total was less than half the totals of the previous two surveys. The survey again reported numerous results as percentages of SROs that felt that this or that question result was the case from their perspective. The major findings were four in number. The overwhelming majority of SROs (90 percent) felt that their schools were still vulnerable to terrorist attacks from the outside and (70 percent)

felt that aggressive behavior by elementary students was on the increase from the inside. SROs felt that significant gaps continued to exist in the adequacy of emergency planning, particularly in repelling terrorism. The underreporting of school crimes by school administrators continued as a problem according to SROs (87 percent). A large number of SROs (41 percent) reported that budget cutting of school safety training by districts continued as a problem.

Interestingly, these four results would seem to indicate that the actual trends in the schools may be moving in the opposite direction from public concerns in these same arenas. The federal and state reporting required by the “persistently dangerous” schools would seem to require accurate reporting for example. Public concerns over terrorism and emergency planning issues continue at a high level.

- h. Strengths of the Evaluation: This survey was again a simple evaluation of a relatively large number of SROs on issues that affect them and that they influence. Since this years survey was only half as long as the first two, comparisons will be difficult. Since the survey consists of SROs reporting on themselves, evaluation of the results should consider this possible influence on the findings. A stronger research design would compare school incident data with or without the SRO presence for instance. The survey appears to advocate for issues important to SROs and, consequently, may advance a bias within the questions selected. Perhaps different questions mailed to all NASRO SROs would provide a more comprehensive response numerically. Not everyone can always attend conferences, especially in the face of the budget cuts these survey results indicate exist.
- i. Significance of the Evaluation: The survey was the third of its kind and again provides good insight to the issues from the SRO’s perspective. Some school or

district based assessments would also be useful on the underreporting issue in light of the persistently dangerous designations by the states. The inclusion of the prior years' survey results was beneficial.

28. School Resource Officer Evaluation:

- a. Date of the Evaluation: 1999 - 2000 School Year.
- b. Title of the Evaluation: Violence in U.S. Public Schools: 2000 School Survey on Crime and Safety (SSOCS).
- c. Author of the Evaluation: Amanda K. Miller and Kathryn Chandler.
- d. Publication of the Evaluation: October, 2003.
- e. Location of the Evaluation: The SSOCS was administered to 2,270 public elementary, middle, and high schools across the country.
- f. Type of Evaluation: The evaluation was a comprehensive survey instrument that was answered by school principals. The Department of Education periodically collects information on school safety in the form of these surveys. This 2000 survey expanded on the usual questions on school crime and violence to include school measures to mitigate crime and other school features or programs that may reduce student criminal activity. This report is the initial analysis of the survey results. SRO implications are mentioned in several sections of the findings.
- g. Description of the Evaluation: The survey showed that, according to the school principals, 71 percent of schools experienced at least one violent incident and 20 percent had a serious violent incident during the 1999 – 2000 school year. Seven percent of the schools accounted for fifty percent of all these incidents however. With regard to the learning environment, schools where students scored well on

standardized tests or they considered academics very important had fewer violent or serious violent incidents and fewer disciplinary problems.

With regard to the employment of SROs, schools who used “paid law enforcement or security personnel” were less likely to experience a violent (62 percent vs. 80 percent) or serious violent (13 percent vs. 26 percent) incident at their schools. The term “SRO” was not used in this study.

- h. Strengths of the Evaluation: The survey was very comprehensive on the central issue of school violence. The apparent contributors to school disorder were discipline problems, the level of student transfers, school disruptions, and the absentee level. The correlations of decreasing violence with the increased presence of SROs and improved academic environment were notable. These findings were not statistically significant, however. The use of the same questions by local or state jurisdictions in future surveys will allow for increased local and national comparisons. The avoidance of the SRO term by the authors was strange though.
- i. Significance of the Evaluation: The SSOCS results serve to ratify previous SRO efficacy studies. The inclusion and comparison of national quantitative data and local data on these same schools would have provided a much stronger research design. These data are readily available to the Department of Education and its Institute of Education Sciences.

Appendix C.2: School Resource Officer Pending Evaluation Summaries

1. School Resource Officer Pending Evaluation:

- a. Date of the Anticipated Evaluation: July 25 – July 29, 2004.
- b. Title of the Evaluation: 2004 National Association of School Resource Officers (NASRO) SRO Survey (this will be the 4th annual survey).
- c. Author of the Evaluation: Probably Kenneth S. Trump.
- d. Publication of the Evaluation: Anticipated November, 2004.
- e. Location of the Evaluation: 14th Annual NASRO Conference in Florida.
- f. Type of Evaluation: The evaluation will be the fourth survey of a significant number of SROs. The first three were Numbers 16, 25, and 27 on the completed SRO evaluations list. Mr. Trump, the usual survey developer, is President of National School Safety and Security Services. The developed professional industry survey is usually given to the approximately 1000 SRO registrants. The survey will represent the fourth effort to assess a wide number of SROs themselves on SRO and school safety issues. The summary results of the three previous surveys are included in this Appendix 2. NASRO has approximately 10,000 members.
- g. Description of the Evaluation: Survey questions on various aspects of school security and safety implementation issues will probably be given on relevant topics.
- h. Significance of the Evaluation: The survey will be the fourth of its kind and will provide good insight to the issues from the SRO's perspective.

2. School Resource Officer Pending Evaluation:

- a. Evaluation Description: This evaluation resulted from a Department of Justice (DOJ) National Institute of Justice (NIJ) Grant solicitation issued in December, 1999. The grant deadline was February 14, 2000. The SRO evaluation was to evaluate the effectiveness of various models and forms of School Resource Programs over a 24 month period. This grant satisfied Strategic Goal # 2 of the DOJ 2000-2005 Strategic Plan. Goal # 2 was to “Prevent and Reduce Crime and Violence by Assisting State, Tribal, Local, and Community Based Programs.”
- b. Title of the Evaluation: A National Assessment of School Resource Officer Programs. This evaluation was funded by the Community Oriented Policing Services (COPS) Office of the Department of Justice and the funds were transferred to the NIJ for oversight per Pam Camerata of the DOJ (2/2003).
- c. Author of the Evaluation: Abt Associates, a research organization, was the recipient of this grant and the issuance date was to be June, 2003.
- d. Publication of the Evaluation: Has yet to be published.
- e. Location of the Evaluation: Selected Community Oriented Policing Services (COPS) funded SRO grantees.
- f. Type of Evaluation: The evaluation was to inventory SRO activities and SRO program effectiveness using COPS grantees’ experiences. The models of the various SRO programs and their integration with the local communities were also to be assessed. SRO model effectiveness and their impact on school safety were to be included.

3. School Resource Officer Pending Evaluation:

- a. Evaluation Description: This evaluation was a subcontract to the above (#2) Department of Justice (DOJ) National Institute of Justice (NIJ) Grant issued in December, 1999. It was issued to the North Carolina Center for the Prevention of School Violence (CPSV).
- b. Title of the Evaluation: A National Assessment of School Resource Officer Programs. This evaluation was funded by the Community Oriented Policing Services (COPS) Office of the Department of Justice.
- c. Author of the Evaluation: Abt Associates, a research organization, was the recipient of this grant and the issuance date was again to be June, 2003. Abt issued the subcontract to the CPSV to study five established North Carolina SRO programs.
- d. Publication of the Evaluation: Originally Fall, 2002. As yet to be published.
- e. Location of the Evaluation: Five selected Community Oriented Policing Services (COPS) funded North Carolina SRO grantees.
- f. Type of Evaluation: The evaluation was to inventory SRO activities and SRO program effectiveness. The models of the various SRO programs and their integration with the local communities were also to be assessed. SRO model effectiveness and their impact on school safety were to be included.

4. School Resource Officer Pending Evaluation:

- a. Evaluation Description: The Pennsylvania Commission on Crime and Delinquency (PCCD) under the Safe and Drug Free Schools and Communities Act initiated a project in 2002 titled "An Evaluation of the School Resource Officer

Projects.” (PCCD Meeting 3/12/02). The evaluation was to initiate on July 1, 2002.

- b. Title of the Evaluation: An Evaluation of the School Resource Officer Projects.
- c. Author of the Evaluation: The evaluation was to be conducted by Central Susquehanna University’s Center for Schools and Communities. School districts currently using SROs (22) will participate through surveys and questionnaires.
- d. Publication of the Evaluation: Completion was planned for 6/30/04, publication of results was to follow with no date given.
- e. Location of the Evaluation: School districts in Pennsylvania (22) utilizing SROs.
- f. Type of Evaluation: The evaluation was to use literature, survey techniques, and data analysis to establish successful SRO models, core components of successful SRO programs, and useful outcome measures for SRO implementations.

5. School Resource Officer Pending Evaluation:

- a. Evaluation Description: Mississippi Department of Human Services will evaluate school districts that have participated in the School Resource Officer Pilot Program specified in Mississippi House Bill 1457 passed in the 2002 Regular Session of the legislature. The Pilot Program was to commence after July 1, 2002 and include all schools that have been on state probation for failure to meet accreditation standards since July 1, 1999. Other schools designated were those most characterized by poor student academic performance or high crime and delinquency. The Pilot Program was to continue through July 1, 2007. The Pilot Program evaluation will consider SRO effectiveness and address any improvement in academic performance, decrease in violence, student

participation in SRO administered programs, and assess the opinions of teachers, administrators, students, and parents toward the SRO program. This evaluation was to be conducted prior to January 1, 2007.

- b. Title of the Evaluation: No title was indicated.
- c. Author of the Evaluation: The evaluation was to be conducted by the Mississippi Department of Human Services prior to January 1, 2007.
- d. Publication of the Evaluation: Evaluation completion was planned for January 1, 2007, with publication of results to follow.
- e. Location of the Evaluation: Affected school districts in Mississippi as indicated above.
- f. Type of Evaluation: The evaluation techniques were not indicated, but it appeared that both quantitative and qualitative elements may be used. The legislation also required the SRO to implement several programs. These were the establishment of a youth crime watch program, a conflict resolution program, and school mentoring programs within the affected schools.

Conclusions: This completes the review of the completed and projected School Resource Officer evaluations that this author was able to locate. The studies that are pending and will add to the body of SRO research if and when they become available. Some may already be available, but not widely distributed. The timings of the completion of these in progress or pending studies are best estimates. My experience indicates that many of these SRO studies tend to experience delays from their original published or projected completion dates.

Appendix D: Juvenile Court Weapons to School Data

**Appendix D: Juvenile Court Weapons to School Data
Difference of Means Students t – test.**

Year	Number
1994	20
1995	20
1996	10
1997	4
1998	12

Years 1994 to 1998

**No SROs
In Place**

Average = 11

Year	Number
1999	10
2000	5
2001	15
2002	8
2003	9

Years 1999 to 2003

**SROs
In Place**

Average = 9.4

F-Test Results: $\rho = 0.2474677$ at $\alpha = .05$

**Homogeneity of Array Variances: F Test Calc;
(Since ρ is $> .05$, Homogeneity is not violated.)**

t - test Results $\rho = 0.3064495$ at $\alpha = .05$

Since ρ is $> .05$, the differences are not significant.

Appendix E: Middle School Academic Indicators Data Sheets

Appendix E.1: Middle School Academic Indicators Explanatory Notes

MNP: Median National Percentile provides norm referenced test results information. 1994 through 1997 data were provided as MNPs and were converted to NCEs for the comparisons.

NCE: Normal Curve Equivalent also provides norm referenced test results information. It is an equal interval measure which can be manipulated arithmetically.

TVAAS: The Tennessee Value Added Assessment System looks back at the previous three years and calculates a percentage score. The TVAAS score is the percent of a normalized year's gain compared to a 50th percentile gain. A gain of 100 % is a normalized cumulative years' gain. Sometimes called a "gains score."

Writing Test: The Writing Test was moved from the Seventh Grade to the Eighth Grade in 2003. In high school, it is given in the eleventh grade. This measure is the percentage of students scoring a 4 or higher on a 6 point skill level scale which is the passing grade. It is a 25 to 30 minute expository essay.

* **Algebra 1 Gateway Test:** This measure was changed from an NCE score to a percent passed score in 2002 negating any further comparisons after that date.

Statistical Testing: NCE yearly averages for each year were calculated. These yearly averages were then averaged for the years before and after the SRO implementation and compared using a two tailed student's t – test for significance at the $\alpha = .05$ level. An

Appendix E.1: Middle School Academic Indicators Explanatory Notes

F - Test was conducted on the NCE average yearly data for homogeneity of variance to assure that the proper t – test was used for the comparison. This comparison of those average test data were also performed at the $\alpha = .05$ level. If the NCE average yearly data for the middle school tested was homogeneous, a less restrictive t – test was conducted. If the F – test results indicated that data homogeneity was violated at the $p = .05$ level (the calculated p was $\leq .05$), the more restrictive two-tailed t – test for non-homogeneous data were conducted. The consideration for homogeneity of data provided a more precise t – test as a function of data variance quality. Statistical results are summarized in Appendix E.14.

Statistics Software Program: The Microsoft Windows 2003 XP Home Edition Excel Spreadsheet Program was used for all statistical calculations. All calculations were conducted at the $\alpha = .05$ level for statistical significance.

Enrollment: School 20 day enrollment numbers are provided to indicate the relative size of the respective schools.

System and School Number: The State of Tennessee assigns each school district and each school in that district a unique identifier number. The Chattanooga City School System was assigned 331 prior to the merger and the Hamilton County School System is assigned 330. Each school has its own unique number in addition to those two system numbers. These numbers are used to link the test and TVAAS summary data to

Appendix E.1: Middle School Academic Indicators Explanatory Notes

each school within the testing databases provided by the Tennessee Department of Education and the SAS Company. The school numbers are indicated on their respective data sheets.

Appendix E.2: Dalewood Middle School Test Data
SRO Assigned: 8/99

School No. 55
2003 20 Day Enrollment = 408

Year	1994	1995	1996	1997	1998	1999	94-99
Sixth	NCE	NCE	NCE	NCE	NCE	NCE	
Reading	38	32	32	27	29	28	
Language	46	39	38	34	33	33	
Math	46	42	32	36	33	34	
Science	34	33	34	37	31	30	
Social Studies	44	41	37	30	33	35	
Totals	208	187	173	164	159	160	
Seventh							
Reading	38	37	34	32	30	33	
Language	45	43	41	39	33	38	
Math	46	37	34	34	34	39	
Science	38	38	36	36	28	35	
Social Studies	42	41	41	37	31	36	
Totals	209	196	186	178	156	181	
Eighth							
Reading	40	34	40	36	36	34	
Language	43	45	46	44	40	39	
Math	45	37	34	37	37	37	Six
Science	42	40	41	39	32	34	Year
Social Studies	47	47	42	40	39	35	NCE
Totals	217	203	203	196	184	179	Mean
NCE Yearly Averages	42.27	39.07	37.47	35.87	33.27	34.67	37.10
Grades 6, 7 & 8 TVAAS				Year One	Year Two	126.4 Ave %	
Writing 7th – 8th	N/A	N/A	N/A	N/A	12.7	33.3	23.0 Ave %
Algebra I NCEs	N/A	N/A	N/A	N/A	54.18	58.29	56.24 Ave

Appendix E.2: Dalewood Middle School Test Data
SRO Assigned: 8/99

School No. 55
2003 20 Day Enrollment = 408

Year	2000	2001	2002	2003	00-03	Results
Sixth	NCE	NCE	NCE	NCE		
Reading	34	33	35	37		
Language	41	34	38	37		
Math	34	31	34	37		
Science	33	29	31	33		
Social Studies	38	30	35	40		
Totals	180	157	173	184		
Seventh						
Reading	30	37	37	36		
Language	39	44	45	38		
Math	36	36	39	39		
Science	31	34	34	32		
Social Studies	36	40	40	37		
Totals	172	191	196	182		
Eighth						
Reading	37	35	38	45		
Language	40	38	42	45		
Math	43	39	42	45	Four	
Science	33	31	38	38	Year	
Social Studies	40	35	39	41	NCE	
Totals	193	178	199	214	Mean	
NCE Yearly Averages	36.34	35.07	37.87	38.67	36.99	- .11 NCE Decrease t - test: two tails p calc = .950
Grades 6, 7 & 8 TVAAS	Year One	Year Two	119.5 Ave %			- 6.9 % Value Added Decrease
Writing 7th – 8th	44.0	54.3	83.1	76.1	64.38 Ave %	+ 41.38 % Increase
Algebra I NCEs	55.64	48.17	*	*	51.91	- 4.33 NCE Decrease

**Appendix E.2: Dalewood Middle School Test Data
NCE Comparison 1994 - 1999 with 2000 - 2003**

Student's t – test

NCE Yearly Averages

Year	1994	1995	1996	1997	1998	1999
	42.27	39.07	37.47	35.87	33.27	34.67

Six Year Average: 37.10333

Year	2000	2001	2002	2003
	36.34	35.07	37.87	38.67

Four Year Average: 36.9875

Homogeneity of Array Variances:

F Test Calc: $p =$ 0.273861

(Since p is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $p =$ 0.949589

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.3: Hixson Middle School Test Data
SRO Assigned: 8/99

School No. 129
2003 20 Day Enrollment = 659

Year	1994	1995	1996	1997	1998	1999	94-99
Sixth	NCE	NCE	NCE	NCE	NCE	NCE	
Reading	55	55	49	52	52	49	
Language	57	58	53	53	56	56	
Math	52	59	52	55	50	49	
Science	51	55	53	54	55	55	
Social Studies	53	60	49	51	53	52	
Totals	268	287	256	265	266	261	
Seventh							
Reading	58	56	53	52	50	51	
Language	62	59	57	55	50	56	
Math	59	55	56	53	52	54	
Science	57	56	59	56	53	54	
Social Studies	58	50	61	52	52	52	
Totals	294	276	286	268	257	267	
Eighth							
Reading	59	56	56	57	54	56	
Language	62	62	61	60	56	57	
Math	60	55	51	56	52	54	Six
Science	59	60	61	58	54	56	Year
Social Studies	60	57	54	56	52	54	NCE
Totals	300	290	286	287	268	277	Mean
NCE Yearly Averages	57.47	56.87	55.00	54.67	52.74	53.67	55.07
Grades 6, 7 & 8 TVAAS				Year One	Year Two	104.4 Ave %	
Writing 7th – 8th	N/A	N/A	N/A	N/A	55.6	53.4	54.5 % Mean
Algebra I NCEs	N/A	N/A	N/A	N/A	64.44	71.54	67.99 Mean

Appendix E.3: Hixson Middle School Test Data
SRO Assigned: 8/99

School No. 129
2003 20 Day Enrollment = 659

Year	2000	2001	2002	2003	00-03	Results
Sixth	NCE	NCE	NCE	NCE		
Reading	53	53	53	53		
Language	55	54	56	55		
Math	49	46	50	52		
Science	56	54	51	52		
Social Studies	56	52	51	52		
Totals	269	259	261	264		
Seventh						
Reading	51	52	52	50		
Language	57	53	53	52		
Math	52	47	52	51		
Science	54	51	47	50		
Social Studies	58	53	53	50		
Totals	272	256	257	253		
Eighth						
Reading	54	55	55	57		
Language	57	58	56	56		
Math	53	54	49	54	Four	
Science	55	55	52	53	Year	
Social Studies	56	52	50	52	NCE	
Totals	275	274	262	272	Mean	
NCE Yearly Averages	54.40	52.60	52.00	52.60	52.90	- 2.17 NCE Decrease t - test: df=8, two tails α crit = .05 ρ calc = .065
Grades 6, 7 & 8 TVAAS	Year One	Year Two	78.1 Ave %			- 26.3 % Value Added Decrease
Writing 7th – 8th	61.5	73.3	82.9	81.7	74.85 % Mean	+ 20.35 % Increase
Algebra I NCEs	70.88	64.66	*	*	67.77 Mean	- 0.22 NCE Decrease

**Appendix E.3: Hixson Middle School Test Data
NCE Comparison 1994 - 1999 with 2000 - 2003**

Student's t – test

NCE Yearly Averages

Year	1994	1995	1996	1997	1998	1999
	57.47	56.87	55	54.67	52.74	53.67

Six Year Average: 55.07

Year	2000	2001	2002	2003
	54.4	52.6	52.0	52.6

Four Year Average: 52.9

Homogeneity of Array Variances:

F Test Calc: ρ = 0.385439

(Since ρ is > .05, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: ρ = 0.065059

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.4: Tyner Middle School Test Data
SRO Assigned: 8/99

School No. 239
2003 20 Day Enrollment = 385

Year	1994	1995	1996	1997	1998	1999	94-99
Sixth	NCE	NCE	NCE	NCE	NCE	NCE	
Reading	45	42	45	34	39	37	
Language	50	51	47	41	45	46	
Math	51	55	45	48	46	46	
Science	39	42	45	37	39	39	
Social Studies	48	49	43	38	41	42	
Totals	233	239	225	198	210	210	
Seventh							
Reading	45	44	41	44	39	39	
Language	49	48	47	45	43	44	
Math	45	45	42	46	42	43	
Science	42	46	41	42	35	40	
Social Studies	44	47	48	46	40	42	
Totals	225	230	219	223	199	208	
Eighth							
Reading	46	41	47	45	44	41	
Language	49	46	53	48	47	46	
Math	45	42	44	46	45	46	Six
Science	45	44	47	47	41	41	Year
Social Studies	48	47	46	44	45	43	NCE
Totals	233	220	237	230	222	217	Mean
NCE Yearly Averages	46.07	45.94	45.40	43.4	42.07	42.33	44.20
Grades 6, 7 & 8 TVAAS				Year One	Year Two	124.0 Ave %	
Writing 7th – 8th	N/A	N/A	N/A	N/A	23.4	17.9	20.6 Ave %
Algebra I NCEs	N/A	N/A	N/A	N/A	60.51	54.37	57.44 Mean

Appendix E.4: Tyner Middle School Test Data
SRO Assigned: 8/99

School No. 239
2003 20 Day Enrollment = 385

Year	2000	2001	2002	2003	00-03	Results
Sixth	NCE	NCE	NCE	NCE		
Reading	45	46	48	48		
Language	49	49	53	57		
Math	44	49	49	53		
Science	48	46	47	47		
Social Studies	47	45	47	48		
Totals	233	235	244	253		
Seventh						
Reading	43	48	48	50		
Language	53	52	52	53		
Math	50	47	48	49		
Science	44	48	45	50		
Social Studies	50	50	48	49		
Totals	240	245	241	251		
Eighth						
Reading	43	46	51	53		
Language	50	52	56	52		
Math	44	49	51	49	Four	
Science	42	44	51	48	Year	
Social Studies	47	47	52	49	NCE	
Totals	226	238	261	251	Mean	
NCE Yearly Averages	46.60	47.87	49.73	50.33	48.63	+ 4.43 NCE Increase T - test: two tails p calc = .0048
Grades 6, 7 & 8 TVAAS	Year One	Year Two	123.6 Ave %			- 0.40 % Value Added Decrease
Writing 7th – 8th	47.7	70.9	81.5	88.9	72.2 % Average	+ 51.6 % Increase
Algebra I NCEs	56.59	61.72	*	*	59.16 %	+ 1.72 NCE Increase

**Appendix E.2: Tyner Middle School Test Data
NCE Comparison 1994 - 1999 with 2000 - 2003**

Student's t - test

NCE Yearly Averages

Year	1994	1995	1996	1997	1998	1999
	46.07	45.94	45.4	43.4	42.07	42.33

Six Year Average: 44.20167

Year	2000	2001	2002	2003
	46.6	47.87	49.73	50.33

Four Year Average: 48.6325

Homogeneity of Array Variances:

F Test Calc: $p =$ 0.979281

(Since p is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $p =$ 0.004881

Conclusion: NCE Difference is significant at the $\alpha = .05$ level.

Appendix E.5: Lookout Valley Middle School Test Data **School No. 165**
SRO Assigned: 8/99 **2003 20 Day Enrollment = 250**

Year	1994	1995	1996	1997	1998	1999	94-99
Sixth	NCE	NCE	NCE	NCE	NCE	NCE	
Reading	49	47	50	51	45	46	
Language	55	46	51	48	46	51	
Math	56	54	46	51	52	55	
Science	49	45	46	52	46	49	
Social Studies	49	50	47	46	46	43	
Totals	258	242	240	248	235	244	
Seventh							
Reading	53	48	55	49	49	48	
Language	60	52	54	49	50	49	
Math	56	52	62	56	52	54	
Science	53	55	59	52	50	48	
Social Studies	51	56	62	49	52	47	
Totals	273	263	292	255	253	246	
Eighth							
Reading	54	56	53	60	49	53	
Language	53	56	57	61	54	55	
Math	55	55	60	65	54	60	Six
Science	55	61	62	56	48	55	Year
Social Studies	52	56	57	57	50	53	NCE
Totals	269	284	289	299	255	276	Mean
NCE Yearly Averages	53.33	52.60	54.74	53.47	49.53	51.07	52.46
Grades 6, 7 & 8 TVAAS				Year One	Year Two	126.6 Ave %	
Writing 7th – 8th	N/A	N/A	N/A	N/A	54.9	50.7	52.8 Ave %
Algebra I NCEs	N/A	N/A	N/A	N/A	48.76	65.51	57.13 Mean

Appendix E.5: Lookout Valley Middle School Test Data **School No. 165**
SRO Assigned: 8/99 **2003 20 Day Enrollment = 250**

Year	2000	2001	2002	2003	00-03	Results
Sixth	NCE	NCE	NCE	NCE		
Reading	46	49	47	43		
Language	51	51	53	45		
Math	51	51	53	53		
Science	44	47	48	39		
Social Studies	48	43	46	45		
Totals	240	241	247	225		
Seventh						
Reading	45	46	46	54		
Language	51	48	50	55		
Math	54	48	50	58		
Science	45	43	41	50		
Social Studies	48	45	46	52		
Totals	243	230	233	269		
Eighth						
Reading	51	52	48	55		
Language	53	55	52	55		
Math	56	57	53	55	Four	
Science	48	48	48	51	Year	
Social Studies	51	49	49	51	NCE	
Totals	259	261	250	267	Mean	
NCE Yearly Averages	49.47	48.8	48.67	50.73	49.42	- 3.04 NCE Decrease t - test: two tails p calc = .018
Grades 6, 7 & 8 TVAAS	Year One	Year Two	108.2 Ave %			- 18.4 % Value Added Decrease
Writing 7th - 8th	54.7	80.8	73.1	88.9	74.4 % Mean	+ 21.6 % Increase
Algebra I NCEs	58.16	54.97	*	*	56.56 Mean	- 0.575 NCE Decrease

**Appendix E.5: Lookout Valley Middle School Test Data
NCE Comparison 1994 - 1999 with 2000 - 2003**

Student's t – test

NCE Yearly Averages

Year	1994	1995	1996	1997	1998	1999
	53.33	52.6	54.74	53.47	49.53	51.07

Six Year Average: 52.45667

Year	2000	2001	2002	2003
	49.47	48.8	48.67	50.73

Four Year Average: 49.4175

Homogeneity of Array Variances:

F Test Calc: ρ = 0.288208

(Since ρ is > .05, Homogeneity is not violated.)

Null Hypothesis Ho: ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: ρ = 0.018018

Conclusion: NCE Difference is significant at the $\alpha = .05$ level.

Appendix E.6: Orchard Knob Middle School Test Data
SRO Assigned: 8/99

School No. 200
2003 20 Day Enrollment = 354

Year	1994	1995	1996	1997	1998	1999	94-99
Sixth	NCE	NCE	NCE	NCE	NCE	NCE	
Reading	45	42	45	34	39	37	
Language	50	51	47	41	45	46	
Math	51	55	45	48	46	46	
Science	39	42	45	37	39	39	
Social Studies	48	49	43	38	41	42	
Totals	233	239	225	198	210	210	
Seventh							
Reading	45	44	41	44	39	39	
Language	49	48	47	45	43	44	
Math	45	45	42	46	42	43	
Science	42	46	41	42	35	40	
Social Studies	44	47	48	46	40	42	
Totals	225	230	219	223	199	208	
Eighth							
Reading	46	41	47	45	44	41	
Language	49	46	53	48	47	46	
Math	45	42	44	46	45	46	Six
Science	45	44	47	47	41	41	Year
Social Studies	48	47	46	44	45	43	NCE
Totals	233	220	237	230	222	217	Mean
NCE Yearly Averages	46.07	45.94	45.40	43.40	42.07	42.34	44.20
Grades 6, 7 & 8 TVAAS				Year One	Year Two	93.4 Ave %	
Writing 7th – 8th	N/A	N/A	N/A	N/A	73.0	72.9	72.9 Ave %
Algebra I NCEs	N/A	N/A	N/A	N/A	49.64	27.83	38.74 Mean

Appendix E.6: Orchard Knob Middle School Test Data
SRO Assigned: 8/99

School No. 200
2003 20 Day Enrollment = 354

Year	2000	2001	2002	2003	00-03	Results
Sixth	NCE	NCE	NCE	NCE		
Reading	45	46	48	48		
Language	49	49	53	57		
Math	44	49	49	53		
Science	48	46	47	47		
Social Studies	47	45	47	48		
Totals	233	235	244	253		
Seventh						
Reading	43	48	48	50		
Language	53	52	52	53		
Math	50	47	48	49		
Science	44	48	45	50		
Social Studies	50	50	48	49		
Totals	240	245	241	251		
Eighth						
Reading	43	46	51	53		
Language	50	52	56	52		
Math	44	49	51	49	Four	
Science	42	44	51	48	Year	
Social Studies	47	47	52	49	NCE	
Totals	226	238	261	251	Mean	
NCE Yearly Averages	46.60	47.87	49.74	50.34	48.64	+ 4.44 NCE Increase t – test Two tails p calc = .0049
Grades 6, 7 & 8 TVAAS	Year One	Year Two	88.1 Ave %			- 5.3 % Value Added Decrease
Writing 7th – 8th	94.2	93.1	95.2	93.1	93.9 Ave %	+ 21.0 % Increase
Algebra I NCEs	32.53	30.75	*	*	31.64 Mean	- 7.10 NCE Decrease

**Appendix E.6: Orchard Knob Middle School Test Data
NCE Comparison 1994 - 1999 with 2000 - 2003**

Student's t - test

NCE Yearly Averages

Year	1994	1995	1996	1997	1998	1999
	46.07	45.94	45.4	43.4	42.07	42.34

Six Year Average: 44.20333

Year	2000	2001	2002	2003
	46.6	47.87	49.74	50.34

Four Year Average: 48.6375

Homogeneity of Array Variances:

F Test Calc: $\rho =$ 0.985445

(Since ρ is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $\rho =$ 0.004871

Conclusion: NCE Difference is significant at the $\alpha = .05$ level.

Appendix E.7: CSAS Middle School Test Data
SRO Assigned: 8/99

School No. 46
2003 20 Day Enrollment = 217

Year	1994	1995	1996	1997	1998	1999	94-99
Sixth	NCE	NCE	NCE	NCE	NCE	NCE	
Reading	60	61	59	59	65	59	
Language	60	56	59	59	67	63	
Math	63	56	60	64	62	55	
Science	55	61	60	56	63	59	
Social Studies	59	62	57	58	64	60	
Totals	297	296	295	296	321	296	
Seventh							
Reading	60	61	64	62	61	64	
Language	64	65	64	62	65	65	
Math	58	59	56	58	61	61	
Science	54	61	64	59	57	60	
Social Studies	64	61	67	63	62	60	
Totals	300	307	315	304	306	310	
Eighth							
Reading	66	60	61	65	63	62	
Language	59	62	60	64	65	63	
Math	52	47	59	51	58	69	Six
Science	59	53	59	64	59	58	Year
Social Studies	61	55	66	64	63	62	NCE
Totals	297	277	305	308	308	314	Mean
NCE Yearly Averages	59.60	58.67	61.00	60.53	62.33	61.33	60.58
Grades 6, 7 & 8 TVAAS				Year One	Year Two	112.6 Ave %	
Writing 7th – 8th	N/A	N/A	N/A	N/A	63.4	83.6	73.5 Ave %
Algebra I NCEs	N/A	N/A	N/A	N/A	49.52	56.98	53.25 Mean

Appendix E.7: CSAS Middle School Test Data
SRO Assigned: 8/99

School No. 46
2003 20 Day Enrollment = 217

Year	2000	2001	2002	2003	00-03	Results
Sixth	NCE	NCE	NCE	NCE		
Reading	57	62	61	63		
Language	60	65	65	63		
Math	56	58	63	55		
Science	57	58	59	57		
Social Studies	58	58	58	61		
Totals	288	301	306	299		
Seventh						
Reading	59	61	62	61		
Language	60	64	67	66		
Math	59	57	58	60		
Science	58	57	57	58		
Social Studies	62	60	59	59		
Totals	298	299	303	304		
Eighth						
Reading	64	61	61	67		
Language	66	59	62	65		
Math	72	64	68	64	Four	
Science	62	59	60	58	Year	
Social Studies	63	60	58	59	NCE	
Totals	327	303	309	313	Mean	
NCE Yearly Averages	60.87	60.20	61.20	61.07	60.84	+ .28 NCE Increase t – Test two tails p calc = .716
Grades 6, 7 & 8 TVAAS	Year One	Year Two	122.3 Ave %			+ 9.7 % Value Added Increase
Writing 7th – 8th	80.7	95.8	98.6	94.3	92.4 Ave %	+ 18.9 % Increase
Algebra I NCEs	58.42	56.13	*	*	57.28	+ 4.03 NCE Increase

**Appendix E.7: CSAS Middle School Test Data
NCE Comparison 1994 - 1999 with 2000 - 2003**

Student's t – test

NCE Yearly Averages

Year	1994	1995	1996	1997	1998	1999
	59.6	58.67	61	60.53	62.33	61.33

Six Year Average: 60.57667

Year	2000	2001	2002	2003
	60.87	60.2	61.2	61.07

Four Year Average: 60.835

Homogeneity of Array Variances:

F Test Calc: ρ = 0.108003

(Since ρ is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: ρ = 0.715827

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.8: Brown Middle School Test Data					School No.35	
SRO Assigned: 1/00					2003 20 Day Enrollment = 597	
Year	1996	1997	1998	1999	2000	96-00
Sixth	NCE	NCE	NCE	NCE	NCE	
Reading	54	49	50	49	45	
Language	59	55	53	55	46	
Math	64	59	52	50	44	
Science	55	55	51	50	46	
Social Studies	54	53	55	49	48	
Totals	286	271	261	253	229	
Seventh						
Reading	59	56	53	55	45	
Language	68	60	57	56	52	
Math	53	53	49	51	44	
Science	59	54	52	53	47	
Social Studies	59	53	52	50	53	
Totals	298	276	263	265	241	
Eighth						
Reading	55	59	56	56	51	
Language	64	62	60	58	55	
Math	60	57	52	51	53	Five
Science	61	56	54	53	49	Year
Social Studies	57	55	56	56	54	NCE
Totals	297	289	278	274	262	Mean
NCE Yearly Averages	58.73	55.73	53.47	52.80	48.80	53.91
Grades 6, 7 & 8 TVAAS			Year One	Year Two	107.0 Ave %	
Writing 7th – 8th	N/A	N/A	65.4	60.5	55.4	60.43 Ave %
Algebra I NCEs	N/A	N/A	72.48	71.85	62.04	68.79 Mean

Appendix E.8: Brown Middle School Test Data **School No.35**
SRO Assigned: 1/00 **2003 20 Day Enrollment = 597**

Year	2001	2002	2003	01-03	Results
Sixth	NCE	NCE	NCE		
Reading	47	48	51		
Language	49	50	56		
Math	45	47	50		
Science	45	47	49		
Social Studies	46	48	49		
Totals	232	240	255		
Seventh					
Reading	49	48	48		
Language	50	49	51		
Math	48	52	49		
Science	47	44	46		
Social Studies	51	49	48		
Totals	245	242	242		
Eighth					
Reading	51	49	53		
Language	55	52	53		
Math	48	48	54	Three	
Science	48	50	49	Year	
Social Studies	50	50	52	NCE	
Totals	252	249	261	Mean	
NCE Yearly Averages	48.60	48.73	50.53	49.29	- 4.62 NCE Decrease t – test two tails p calc = .085
Grades 6, 7 & 8 TVAAS	Year One	Year Two	112.3 Ave %		+ 5.3 % Value Added Increase
Writing 7th – 8th	71.5	85.0	78.3	78.27 Ave %	+ 17.84 % Increase
Algebra I NCEs	48.72	*	*	48.72	- 20.07 NCE Decrease

**Appendix E.8: Brown Middle School Test Data
NCE Comparison 1996 - 2000 with 2001 - 2003**

Student's t – test

NCE Yearly Averages

Year	1996	1997	1998	1999	2000
	58.73	55.73	53.47	52.8	48.8

Five Year Average: 53.906

Year	2001	2002	2003
	48.6	48.73	50.53

Three Year Average: 49.2866

Homogeneity of Array Variances:

F Test Calc: ρ = 0.161621

(Since ρ is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: ρ = 0.084715

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.9: Ooltewah Middle School Test Data **School No. 157**
SRO Assigned: 1/00 **2003 20 Day Enrollment = 1050**

Year	1996	1997	1998	1999	2000	96-00
Sixth	NCE	NCE	NCE	NCE	NCE	
Reading	54	54	53	54	53	
Language	58	55	58	60	60	
Math	56	62	54	53	51	
Science	55	55	55	55	55	
Social Studies	51	54	55	51	53	
Totals	274	280	275	273	272	
Seventh						
Reading	60	59	54	53	53	
Language	66	62	58	60	59	
Math	62	59	51	55	52	
Science	59	56	53	56	55	
Social Studies	68	56	53	52	53	
Totals	315	292	269	276	272	
Eighth						
Reading	61	62	59	57	56	
Language	63	65	65	61	60	
Math	63	61	57	57	58	Five
Science	66	60	56	57	56	Year
Social Studies	61	59	58	54	56	NCE
Totals	314	307	295	286	286	Mean
NCE Yearly Averages	60.20	58.60	55.94	55.67	55.34	57.15
Grades 6, 7 & 8 TVAAS			Year One	Year Two	121.4 Ave %	
Writing 7th – 8th	N/A	N/A	51.5	54.5	71.1	59.03 Ave %
Algebra I NCEs	N/A	N/A	75.67	66.78	53.61	65.35 Mean

Appendix E.9: Ooltewah Middle School Test Data **School No. 157**
SRO Assigned: 1/00 **2003 20 Day Enrollment = 1050**

Year	2001	2002	2003	01-03	Results
Sixth	NCE	NCE	NCE		
Reading	54	53	54		
Language	57	57	57		
Math	53	53	55		
Science	53	54	53		
Social Studies	51	52	54		
Totals	268	269	273		
Seventh					
Reading	54	54	54		
Language	58	59	57		
Math	52	51	60		
Science	54	51	56		
Social Studies	53	55	55		
Totals	271	270	282		
Eighth					
Reading	56	54	59		
Language	58	58	63		
Math	58	52	55	Three	
Science	53	54	57	Year	
Social Studies	52	52	56	NCE	
Totals	277	270	290	Mean	
NCE Yearly Averages	53.87	53.94	56.34	54.72	- 2.43 NCE Decrease t - test two tails p calc = .135
Grades 6, 7 & 8 TVAAS	Year One	Year Two	107.1 Ave %		- 14.3 % Value Added Decrease
Writing 7th – 8th	77.0	87.8	91.6	85.47 Ave %	+ 26.44 % Increase
Algebra I NCEs	47.64	*	*	47.64 Mean	- 17.71 NCE Decrease

**Appendix E.9: Ooltewah Middle School Test Data
NCE Comparison 1996 - 2000 with 2001 - 2003**

Student's t – test

NCE Yearly Averages

Year	1996	1997	1998	1999	2000
	60.2	58.6	55.94	55.67	55.34

Five Year Average: 57.15

Year	2001	2002	2003
	53.87	53.94	56.34

Three Year Average: 54.7166

Homogeneity of Array Variances:

F Test Calc: $\rho =$ 0.646786

(Since ρ is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $\rho =$ 0.134600

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.10: Soddy Daisy Middle School Test Data **School No.225**
SRO Assigned: 8/00 **2003 20 Day Enrollment = 654**

Year	1996	1997	1998	1999	2000	96-00
Sixth	NCE	NCE	NCE	NCE	NCE	
Reading	48	50	47	37	45	
Language	53	53	50	46	49	
Math	54	53	49	46	44	
Science	48	50	49	39	48	
Social Studies	46	47	51	49	47	
Totals	249	253	246	217	233	
Seventh						
Reading	52	52	51	39	43	
Language	55	53	55	44	53	
Math	53	50	51	43	50	
Science	53	49	50	40	44	
Social Studies	53	46	50	46	50	
Totals	266	250	257	212	240	
Eighth						
Reading	56	55	50	41	43	
Language	60	59	53	46	50	
Math	60	60	52	46	44	Five
Science	59	59	52	41	42	Year
Social Studies	54	52	51	49	47	NCE
Totals	289	285	258	223	226	Mean
NCE Yearly Averages	53.6	52.53	50.73	43.47	50.08	50.08
Grades 6, 7 & 8 TVAAS			Year One	Year Two	91.6 Ave %	
Writing 7th – 8th	N/A	N/A	63.0	62.6	62.4	62.7 Ave %
Algebra I NCEs	N/A	N/A	70.70	67.02	74.14	70.62 Mean

Appendix E.10: Soddy Daisy Middle School Test Data School No.225
SRO Assigned: 8/00 2003 20 Day Enrollment = 654

Year	2001	2002	2003	01-03	Results
Sixth	NCE	NCE	NCE		
Reading	46	48	54		
Language	49	53	59		
Math	49	49	50		
Science	46	47	51		
Social Studies	45	47	52		
Totals	235	244	266		
Seventh					
Reading	48	48	50		
Language	52	52	53		
Math	47	48	49		
Science	48	45	50		
Social Studies	50	48	49		
Totals	245	241	251		
Eighth					
Reading	46	51	53		
Language	52	56	52		
Math	49	51	49	Three	
Science	44	51	48	Year	
Social Studies	47	52	49	NCE	
Totals	238	261	251	Mean	
NCE Yearly Averages	47.87	49.73	51.20	49.60	- .48 NCE Decrease t - test two tails p calc = .135
Grades 6, 7 & 8 TVAAS	Year One	Year Two	80.3 Ave %		- 11.3 % Value Added Decrease
Writing 7th - 8th	83.9	92.7	91.6	89.4 Ave %	+ 26.7 % Increase
Algebra I NCEs	64.33	*	*	64.33 Mean	- 6.29 NCE Decrease

**Appendix E.10: Soddy Daisy Middle School Test Data
NCE Comparison 1996 - 2000 with 2001 - 2003**

Student's t – test

NCE Yearly Averages

Year	1996	1997	1998	1999	2000
	53.6	52.53	50.73	43.47	50.08

Five Year Average: 50.082

Year	2001	2002	2003
	47.87	49.73	51.2

Three Year Average: 49.6

Homogeneity of Array Variances:

F Test Calc: $p =$ 0.313876

(Since p is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $p =$ 0.851125

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.11: Loftis Middle School Test Data **School No.120**
SRO Assigned: 1/00 **2003 20 Day Enrollment = 782**

Year	1996	1997	1998	1999	2000	96-00
Sixth	NCE	NCE	NCE	NCE	NCE	
Reading	55	59	60	58	57	
Language	62	66	66	65	60	
Math	71	73	65	65	60	
Science	55	66	62	60	59	
Social Studies	53	60	60	58	57	
Totals	296	324	313	306	293	
Seventh						
Reading	64	63	59	60	57	
Language	70	71	68	67	66	
Math	66	68	63	62	59	
Science	64	63	60	62	58	
Social Studies	65	60	57	58	61	
Totals	329	325	307	309	301	
Eighth						
Reading	60	62	63	59	60	
Language	65	69	68	65	65	
Math	60	62	63	62	63	Five
Science	64	66	62	56	61	Year
Social Studies	57	60	61	57	61	NCE
Totals	306	319	317	299	310	Mean
NCE Yearly Averages	62.07	64.53	62.47	60.93	60.27	62.05
Grades 6, 7 & 8 TVAAS				Year One	Year Two	101.2 Ave %
Writing 7th – 8th	N/A	N/A	73.5	78.4	88.1	80.0 Ave %
Algebra I NCEs	N/A	N/A	80.56	73.84	71.63	75.34 Mean

Appendix E.11: Loftis Middle School Test Data **School No.120**
SRO Assigned: 1/00 **2003 20 Day Enrollment = 782**

Year	2001	2002	2003	01-03	Results
Sixth	NCE	NCE	NCE		
Reading	53	59	57		
Language	58	63	62		
Math	61	59	57		
Science	56	58	56		
Social Studies	51	56	57		
Totals	279	295	289		
Seventh					
Reading	59	58	59		
Language	64	67	66		
Math	64	65	66		
Science	58	56	58		
Social Studies	62	60	59		
Totals	307	306	308		
Eighth					
Reading	59	62	59		
Language	63	69	66		
Math	65	63	66	Three	
Science	60	61	60	Year	
Social Studies	56	59	58	NCE	
Totals	303	314	309	Mean	
NCE Yearly Averages	59.27	61.00	60.40	60.22	- 1.83 NCE Decrease t - test: Two tails p calc = .130
Grades 6, 7 & 8 TVAAS	Year One	Year Two	109.9 Ave %		+ 8.7 % Value Added Increase
Writing 7th – 8th	88.9	90.8	93.1	90.93 Ave %	+ 10.93 % Increase
Algebra I NCEs	74.70	*	*	74.70 Mean	- .64 NCE Decrease

**Appendix E.11: Loftis Middle School Test Data
NCE Comparison 1996 - 2000 with 2001 - 2003**

Student's t – test

NCE Yearly Averages

Year	1996	1997	1998	1999	2000
	62.07	64.53	62.47	60.93	60.27

Five Year Average: 62.054

Year	2001	2002	2003
	59.27	61	60.4

Three Year Average: 60.2233

Homogeneity of Array Variances:

F Test Calc: $p =$ 0.470634

(Since p is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $p =$ 0.130461

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.12: Hunter Middle School Test Data **School No.100**
SRO Assigned: 1/00 **2003 20 Day Enrollment = 902**

Year	1996	1997	1998	1999	2000	96-00
Sixth	NCE	NCE	NCE	NCE	NCE	
Reading	54	56	56	53	56	
Language	56	59	64	63	60	
Math	58	61	60	56	56	
Science	61	65	61	58	60	
Social Studies	56	55	60	55	55	
Totals	285	296	301	285	287	
Seventh						
Reading	54	58	57	58	53	
Language	61	62	63	61	61	
Math	56	57	59	57	53	
Science	56	61	58	58	55	
Social Studies	55	54	57	56	55	
Totals	282	292	294	290	277	
Eighth						
Reading	61	55	56	60	58	
Language	65	63	63	64	62	
Math	56	57	54	58	60	Five
Science	63	60	58	58	56	Year
Social Studies	57	54	58	58	58	NCE
Totals	302	289	289	298	294	Mean
NCE Yearly Averages	57.93	58.47	58.93	58.20	57.20	58.15
Grades 6, 7 & 8 TVAAS			Year One	Year Two	116.0 Ave %	
Writing 7th – 8th	N/A	N/A	57.9	59.8	67.6	61.77 Ave %
Algebra I NCEs	N/A	N/A	59.38	86.91	82.71	76.33 Mean

Appendix E.12: Hunter Middle School Test Data **School No.100**
SRO Assigned: 1/00 **2003 20 Day Enrollment = 902**

Year	2001	2002	2003	01-03	Results
Sixth	NCE	NCE	NCE		
Reading	55	59	61		
Language	55	62	64		
Math	57	57	59		
Science	56	60	60		
Social Studies	53	58	59		
Totals	276	296	303		
Seventh					
Reading	57	58	62		
Language	60	62	67		
Math	54	58	60		
Science	54	55	60		
Social Studies	56	59	61		
Totals	281	292	310		
Eighth					
Reading	57	60	67		
Language	61	66	70		
Math	56	58	65	Three	
Science	58	61	65	Year	
Social Studies	53	58	64	NCE	
Totals	285	303	331	Mean	
NCE Yearly Averages	56.13	59.40	62.93	59.49	+ 1.34 NCE Increase t - test: two tails p calc = .566
Grades 6, 7 & 8 TVAAS	Year One	Year Two	137.1 Ave %		+ 21.1 % Value Added Increase
Writing 7th – 8th	84.2	92.2	91.8	89.4 Ave %	+ 27.63 % Increase
Algebra I NCEs	69.09	*	*	69.09 Mean	- 7.24 NCE Decrease

**Appendix E.12: Hunter Middle School Test Data
NCE Comparison 1996 - 2000 with 2001 - 2003**

Student's t – test

NCE Yearly Averages

Year	1996	1997	1998	1999	2000
	57.93	58.47	58.93	58.2	57.2

Five Year Average: 58.146

Year	2001	2002	2003
	56.13	59.4	62.93

Three Year Average: 59.4866

Homogeneity of Array Variances:

F Test Calc: $p =$ 0.009009

(Since p is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $p =$ 0.566425

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.13: Signal Mountain Middle School Test Data School No. 210
SRO Assigned: 8/00 2003 20 Day Enrollment = 358

Year	1996	1997	1998	1999	2000	96-00
Sixth	NCE	NCE	NCE	NCE	NCE	
Reading	67	68	70	69	66	
Language	74	77	73	73	69	
Math	76	80	69	69	67	
Science	69	78	71	68	66	
Social Studies	64	69	71	65	65	
Totals	350	372	354	344	333	
Seventh						
Reading	65	70	65	67	65	
Language	68	75	70	69	70	
Math	69	68	64	67	64	
Science	68	73	64	67	65	
Social Studies	75	77	67	67	72	
Totals	345	363	330	337	336	
Eighth						
Reading	68	67	71	68	70	
Language	77	76	74	73	72	
Math	66	70	72	72	71	Five
Science	78	66	71	67	68	Year
Social Studies	71	64	69	70	70	NCE
Totals	360	343	357	350	351	Mean
NCE Yearly Averages	70.33	71.87	69.4	68.73	68.00	69.67
Grades 6, 7 & 8 TVAAS			Year One	Year Two	121.8 Ave %	
Writing 7th – 8th	N/A	N/A	73.0	72.9	94.2	80.3 Ave %
Algebra I NCEs	N/A	N/A	92.29	88.69	83.69	88.22 Mean

Appendix E.13: Signal Mountain Middle School Test Data School No. 210
SRO Assigned: 8/00 **2003 20 Day Enrollment = 358**

Year	2001	2002	2003	01-03	Results
Sixth	NCE	NCE	NCE		
Reading	64	68	67		
Language	68	71	71		
Math	63	71	76		
Science	65	69	67		
Social Studies	61	66	67		
Totals	321	345	348		
Seventh					
Reading	68	65	69		
Language	67	67	66		
Math	67	66	62		
Science	62	64	70		
Social Studies	65	67	66		
Totals	329	329	333		
Eighth					
Reading	66	68	70		
Language	70	75	73		
Math	71	71	72	Three	
Science	66	62	65	Year	
Social Studies	69	67	67	NCE	
Totals	342	343	347	Mean	
NCE Yearly Averages	66.13	67.8	68.53	67.49	- 2.18 NCE Decrease t - test: two tails p calc = .080
Grades 6, 7 & 8 TVAAS	Year One	Year Two	111.2 Ave %		- 10.6 % Value Added Decrease
Writing 7th – 8th	93.1	95.2	93.1	93.8 Ave %	+ 13.5 % Increase
Algebra I NCEs	80.23	*	*	80.23 Mean	- 7.99 NCE Decrease

**Appendix E.13: Signal Mountain Middle School Test Data
NCE Comparison 1996 - 2000 with 2001 - 2003**

Student's t – test

NCE Yearly Averages

Year	1996	1997	1998	1999	2000
	70.33	71.87	69.4	68.73	68

Five Year Average: 69.666

Year	2001	2002	2003
	66.13	67.8	68.53

Three Year Average: 67.4866

Homogeneity of Array Variances:

F Test Calc: ρ = 0.878787

(Since ρ is $>$.05, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: ρ = 0.079823

Conclusion: NCE Difference is not significant at the $\alpha = .05$ level.

Appendix E.14: Middle School Summary Statistical Data

Schools	Statistical Test Results Before and After an SRO		Descriptive Comparisons Before and After an SRO		
12 HCSD Middle Schools	Subject Area TCAP Change Results	Statistical Significance ($p = .05$) Results	Subject Area TVAAS Results	Writing 8th Grade Test Results	Algebra I Test Results
Dalewood	↓	No	↓	↑	↓
Hixson	↓	No	↓	↑	↓
Tyner	↑	Yes	↓	↑	↑
Lookout Valley	↓	Yes	↓	↑	↓
Orchard Knob	↑	Yes	↓	↑	↓
CSAS	↑	No	↑	↑	↑
Brown	↓	No	↑	↑	↓
Ooltewah	↓	No	↓	↑	↓
Soddy Daisy	↓	No	↓	↑	↓
Loftis	↓	No	↑	↑	↓
Hunter	↑	No	↑	↑	↓
Signal Mountain	↓	No	↓	↑	↓
Total Schools	12	12	12	12	12
Total of Measures That Increased	4	2 Significant	4	12	2
Total of Measures That Decreased	8	1 Significant	8	0	10

Appendix E.14: Middle School Summary Statistical Data

Middle and High School Overall Test Results Summary					
Schools	Statistical Test Results Before and After an SRO		Descriptive Comparisons Before and After an SRO		
12 HCSD Middle Schools	Subject Area TCAP Change Results	Statistical Significance ($\rho = .05$) Results	Subject Area TVAAS Results	Writing 8th Grade Test Results	Algebra I Test Results
7 HCSD High Schools	Algebra I Test Results	Statistical Significance ($\rho = .05$)	Algebra I TVAAS Results	Writing 11th Grade Results	Algebra I Test Results
Total Schools	19	19	19	17	19
Total of Measures That Increased	10	6 Significant	9	17	8
Total of Measures That Decreased	9	1 Significant	10	0	11

Appendix E.15: Middle Schools' TVAAS 1999 and 2000 Statistical Data

1999 TVAAS Averages							
Middle School Summary - School Numbers Indicated							
TCAP NRT Value Added Data by Subject Indicated – Source: SAS, Cary, NC							
TVAAS = Cumulative % of Normal USA Gain – Three Year Averages							
School - Number	Subject	Read	Lang.	Math	Sci.	Social	Ave. %
Dalewood - 55	Score '99	125	159	120	133	95	126.4
Hixson - 129	Score '99	124	124	88	122	64	104.4
Tyner - 239	Score '99	115	161	128	126	90	124
Lookout Valley - 165	Score '99	127	167	152	124	63	126.6
Orchard Knob - 200	Score '99	85	95	85	133	69	93.4
CSAS - 46	Score '99	128	140	110	119	66	112.6

2000 TVAAS Averages							
Middle School Summary - School Numbers Indicated							
TCAP NRT Value Added Data by Subject Indicated – Source: SAS, Cary, NC							
TVAAS = Cumulative % of Normal USA Gain – Three Year Averages							
School	Subject	Read	Lang.	Math	Sci.	Social	Ave. %
Brown - 35	Score '00	101	114	77	109	134	107.0
Ooltewah - 157	Score '00	111	160	94	136	106	121.4
Soddy Daisy - 225	Score '00	90	89	84	113	82	91.6
Loftis - 120	Score '00	101	118	75	110	102	101.2
Hunter - 100	Score '00	109	137	95	116	123	116.0
Signal Mountain - 210	Score '00	143	146	93	116	111	121.8

Appendix E.16: Middle Schools' TVAAS 2002 and 2003 Statistical Data

2002 TVAAS Averages							
Middle School Summary - School Numbers Indicated							
TCAP NRT Value Added Data by Subject Indicated – Source: SAS, Cary, NC							
TVAAS = Cumulative % of Normal USA Gain – Three Year Averages							
School - Number	Subject	Read	Lang.	Math	Sci.	Social	Ave. %
Dalewood - 55	Score	109.4	155.7	112.3	97.2	122.9	119.5
Hixson - 129	Score	87.9	93	60.4	66.1	82.9	78.1
Tyner - 239	Score	106.2	163.2	96.1	119.5	132.8	123.6
Lookout Valley - 165	Score	100.6	132.8	116.2	74.8	116.5	108.2
Orchard Knob - 200	Score	73.8	100.2	89.2	84.5	93	88.1
CSAS - 46	Score	108.1	124	137	125.5	116.7	122.3

2003 TVAAS Averages							
Middle School Summary - School Numbers Indicated							
TCAP NRT Value Added Data by Subject Indicated – Source: Tennessee Education Department TVAAS Website							
TVAAS = Cumulative % of Normal USA Gain – Three Year Averages							
School	Subject	Read	Lang.	Math	Sci.	Social	Ave. %
Brown - 35	Score	111.4	138.0	105.0	106.7	100.4	112.3
Ooltewah - 157	Score	108.7	104.7	106.6	102.8	112.6	107.1
Soddy Daisy - 225	Score	80.4	82.1	70.7	89.2	79.2	80.3
Loftis - 120	Score	102.7	142.5	117.7	92.1	94.4	109.9
Hunter - 100	Score	137.2	170.8	112.5	133.6	131.4	137.1
Signal Mountain - 210	Score	116.7	122.5	115.6	88.1	113.0	111.2

Appendix E.17: Middle Schools' School Resource Officer NCE Data

Middle School NCE Means Comparison SRO versus Non SRO Schools in the Same Year	With SROs 2000
	36.34
TCAP Five Subject NCE Averages	54.4
	46.6
	49.47
	46.6
	60.87
Middle Schools with SRO NCE Average:	49.04666667
	Without SROs 2000
	53.91
TCAP Five Subject NCE Averages	55.34
	50.08
	62.05
	58.15
	68
Middle Schools without SRO NCE Average:	57.92166667
Homogeneity of NCE Array Variances: F Test Calc: $\rho =$	0.580549153
Since ρ is > .05, Homogeneity is not violated.	
Null Hypothesis Ho: (m1 = m2)	
NCE Difference Probability Calculated: $\rho =$	0.063952554
Conclusion: Difference is not significant at the .05 level.	

Appendix E.18: Middle Schools' Social Economic Status Statistical Data

	With SROs 2000 SES
Middle School SES Means Comparisons	
SRO versus Non SRO Schools in the Same Year	
	80
School SES Values: Percent of Students participating	35
in the USDA Free or Reduced Price Lunch Program.	46
	41
	91
	14
Middle Schools with an SRO SES Average:	51.1666667
	Without SROs 2000 SES
	22
School SES Values: Percent of Students participating	27
In the USDA Free or Reduced Price Lunch Program	7
	47
	11
	18
Middle Schools without an SRO SES Average:	22
Homogeneity of SES Array Variances: F Test Calc: $\rho =$	0.144980194
Since ρ is $> .05$, Homogeneity is not violated.	
Null Hypothesis $H_0: (m_1 = m_2)$	
SES Difference Probability Calculated: $\rho =$	0.05114628
Conclusion: Difference is not significant at the .05 level (close however).	

Appendix E.19: Middle Schools' Low Social Economic Status Statistical Data

Middle School SES Means Comparisons for the Year 2000	
High SES Schools:	High SES 2000
	80
School SES Values: Percent of Students participating in the USDA Free or Reduced Price Lunch Program.	46 41 91 47
Middle Schools with High SES - Average:	61.0
Low SES Schools:	Low SES 2000
	22
School SES Values: Percent of Students participating in the USDA Free or Reduced Price Lunch Program.	27 7 11 18 14 35
Middle Schools with Low SES - Average:	19.14285714
Homogeneity of SES Array Variances: F Test Calc: $\rho =$ Since ρ is $< .05$, Homogeneity is violated.	0.028579
Null Hypothesis $H_0: (m_1 = m_2)$ SES Difference Probability Calculated: $\rho =$	0.009882
Conclusion: Since ρ is $< .05$, difference is significant at the $.05$ level.	

Appendix E.20: Middle Schools' Low Social Economic Status NCE Data

**Middle School NCE Means Comparisons
Controlling on SES for the Year 2000**

High SES Schools NCEs:	High SES 2000
School SES Values: Percent of Students participating in the USDA Free or Reduced Price Lunch Program.	55.34 50.08 68
TCAP Five Subject NCE Averages	62.05 58.15 60.87 54.4
Middle Schools with High SES – Average NCE:	58.41286
Low SES Schools NCEs:	Low SES 2000
School SES Values: Percent of Students participating in the USDA Free or Reduced Price Lunch Program.	36.34 46.6
TCAP Five Subject NCE Averages	49.47 46.6 53.91
Middle Schools with Low SES – Average NCE:	46.584
Homogeneity of SES Array Variances: F Test Calc: $\rho =$ Since ρ is $> .05$, Homogeneity is not violated.	0.790621
Null Hypothesis H_0: ($m_1 = m_2$) SES Difference Probability Calculated: $\rho =$	0.007919
Conclusion: Since ρ is $< .05$, difference is significant at the $.05$ level.	

Appendix F: High School Academic Indicators Data Sheets

Appendix F.1: High School Academic Indicators Explanatory Notes

School Year versus Test Year: The year indicated on the data sheets is the year the tests were taken, usually in the spring of that year. For example the test data for 1999 would be labeled 1999 as this was the year those data were developed. The 1999 data were for the 1998-1999 school year.

Mean Scale Scores (MSS): Mean scale scores measure performance on a continuum and are also an equal interval measure which allows mathematical manipulation. They are often used to measure changes in performance. For the high schools, Algebra I mean scale scores are used to compare student performance before and after the SRO presence.

TVAAS: The Tennessee Value Added Assessment System looks back at the previous three years and calculates a percentage score. The TVAAS score is the percent of a normalized year's gain compared to a 50th percentile gain. A gain of 100 % is a normalized cumulative years' gain. Sometimes called a "gains score."

TVAAS School Effect: For the high schools, the TVAAS "School Effect" averages for the Algebra I scores were used and compared. The School Effect is the TVAAS value added percentile measure that calculates the gain over the previous three years based on a normalized gain. The 50th percentile is the national mean gain that is in the middle. 1996 was the first year a TVAAS school effect was calculated for the Algebra I measure.

Appendix F.1: High School Academic Indicators Explanatory Notes

Writing Test: The Writing Test is given in the eleventh grade. This measure is the percentage of students scoring a 4 or higher on a 6 point skill level scale which is the passing grade. It is a 25 to 30 minute expository essay.

* **Algebra 1 Gateway Test:** This measure was changed from an NCE score to a percent passed score in 2002 negating any further comparisons after that date.

Statistical Testing: Mean scale score averages for each year were compared. These yearly averages were then averaged for the years before and after the SRO implementation and compared using a two tailed student's t – test for significance at the $\alpha = .05$ level. An F - test was conducted on the NCE average yearly data for homogeneity of variance to assure that the properly restrictive t – test was used for the comparison. This comparisons of those average test data were also performed at the $\alpha = .05$ level. If the MSS average yearly data array variances before and after SRO presence for the middle school tested exhibited homogeneity, a less restrictive t – test was conducted. If the F – test results indicated that data homogeneity was violated at the $p = .05$ level (i.e., the calculated p was $\leq .05$), the more restrictive two-tailed t – test for non-homogeneous data were conducted. The consideration for homogeneity of data provided a more precise t – test as a function of data variance quality. Statistical results are summarized in the Appendix F.9 data sheets for the individual schools.

Appendix F.1: High School Academic Indicators Explanatory Notes

Statistics Calculations and Software Program: The Microsoft Windows 2003 XP Home Edition Excel Spreadsheet Program was used for all statistical calculations. All probability (ρ) calculations were conducted at the $\alpha = .05$ level for statistical significance. F - Tests for homogeneity of data set variances were conducted with one tail tests and t - tests for differences of means tests were conducted with two tailed tests.

Enrollment: School 20 day enrollment numbers are provided to indicate the relative size of the respective schools.

System and School Number: The State of Tennessee assigns each school district and each school in that district a unique identifier number. The Chattanooga City School System was assigned 331 prior to the merger and the Hamilton County School System is assigned 330. Each school has its own unique number within those two system numbers. These numbers are used to link the testing and TVAAS summary data to each school within the testing databases provided by the Tennessee Department of Education and the SAS Company. The school numbers are indicated on their respective data sheets.

Appendix F.2: Hixson High School Test Data
SRO Assigned: 8/99

School Number 128
2003 20 Day Enrollment = 1032

+ Year	1996	1997	1998	1999	96-99 Summary
Algebra I Mean Scale Score	497.4	493.6	493.0	518.1	500.53 Points
TVAAS Percentile School Effect	62	47	43	84	59.0 Ave %
Writing 11th Grade	N/A	N/A	61.3	67.3	64.3 Ave %

Year	2000	2001	2002	2003	00-03 Summary	Results
Algebra I Mean Scale Score	541.6	531.9	526.9	518.4	529.70 Points	+ 29.17 SS Increase t - test: two tails p calc = .009
TVAAS Percentile School Effect	87	No Data	14	13	38.0 Ave %	- 21 % Value Added Decrease
Writing 11th Grade	75.8	85.4	79.9	75.0	79.03 Ave %	+ 14.73 % Increase

**Appendix F.2: Hixson High School Test Data Student's t – test
Algebra I Scale Score Comparison 1996 - 1999 with 2000 - 2003**

Algebra I Yearly Averages

Year	1996	1997	1998	1999
	497.4	493.6	493.0	518.1

Four Year Average: 500.525

Year	2000	2001	2002	2003
	541.6	531.9	526.9	518.4

Four Year Average: 529.700

Homogeneity of Array Variances:

F Test Calc: ρ = 0.746696

(Since ρ is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: ρ = 0.008907

Conclusion: Since ρ is $< .05$, the Algebra I Scale Score difference is significant at the $\alpha = .05$ level.

Appendix F.3: Red Bank High School Test Data
SRO Assigned: 8/99

School Number 175
2003 20 Day Enrollment = 1320

Year	1996	1997	1998	1999	96-99 Summary
Algebra I Mean Scale Score	523.7	519.1	509.4	533.8	521.50 Points
TVAAS Percentile School Effect	83	66	41	82	68.0 Ave %
Writing 11th Grade	N/A	N/A	55.8	71.5	63.6 Ave %

Year	2000	2001	2002	2003	00-03 Summary	Results
Algebra I Mean Scale Score	527.6	527.8	541.8	520.9	529.53 Points	+ 8.03 SS Increase t - test: two tails $\rho = 0.277$
TVAAS Percentile School Effect	65	No Data	57	40	54.0 Ave %	- 14.0 % Value Added Decrease
Writing 11th Grade	66.1	75.6	90.7	87.3	79.9 Ave %	+ 16.3 % Increase

**Appendix F.3: Red Bank High School Test Data Student's t – test
Algebra I Scale Score Comparison 1996 - 1999 with 2000 - 2003**

Algebra I Yearly Averages

Year	1996	1997	1998	1999
	523.7	519.1	509.4	533.8

Four Year Average: **521.5**

Year	2000	2001	2002	2003
	527.6	527.8	541.8	520.9

Four Year Average: **529.525**

Homogeneity of Array Variances:

F Test Calc: ρ = 0.820123

(Since ρ is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: ρ = 0.276724

Conclusion: Since ρ is $> .05$, the Algebra I Scale Score difference is not significant at the $\alpha = .05$ level.

Appendix F.4: Tyner High School Test Data
SRO Assigned: 8/97

School Number 237
2003 20 Day Enrollment = 536

Year		1996	1997		96-97 Summary
Algebra I Mean Scale Score		455.6	467.4		461.5 Points
TVAAS Percentile School Effect		18	28		23.0 Ave %
Writing 11th Grade		N/A	N/A		N/A Ave %

Year		1998	1999		98 - 99 Summary	Results
Algebra I Mean Scale Score		471.0	485.4		478.2 Points	+ 16.7 SS Increase t - test: two tails $p = 0.215$
TVAAS Percentile School Effect		30	51		40.5 Ave %	+ 17.5 % Value Added Increase
Writing 11th Grade		33.0	40.7		36.85 Ave %	N/A %

**Appendix F.4: Tyner High School Test Data Student's t – test
Algebra I Scale Score Comparison 1996 - 1997 with 1998 - 1999**

Algebra I Yearly Averages

Year	1996	1997
	455.6	467.4

Two Year Average: **461.5**

Year	1998	1999
	471	485.4

Two Year Average: **478.2**

Homogeneity of Array Variances:

F Test Calc: $p =$ **0.87406**

(Since p is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $p =$ **0.214663**

**Conclusion: Since p is $> .05$, the Algebra I Scale Score difference
is not significant at the $\alpha = .05$ level.**

Appendix F.5: Central High School Test Data
SRO Assigned: 8/97

School Number 40
2003 20 Day Enrollment = 1129

Year		1996	1997		96-97 Summary
Algebra I Mean Scale Score		528.0	516.3		522.15 Points
TVAAS Percentile School Effect		89	67		78.0 Ave %
Writing 11th Grade		N/A	N/A		N/A Ave %

Year		1998	1999		98 - 99 Summary	Results
Algebra I Mean Scale Score		512.7	514.1		513.4 Points	- 8.75 SS Decrease t - test: two tails $p = 0.215$
TVAAS Percentile School Effect		58	56		57.0 Ave %	- 21.0 % Value Added Decrease
Writing 11th Grade		75.2	81.2		70.2 Ave %	N/A %

**Appendix F.5: Central High School Test Data Student's t – test
Algebra I Scale Score Comparison 1996 - 1997 with 1998 - 1999**

Algebra I Yearly Averages

Year	1996	1997
	528.0	516.3

Two Year Average: **522.15**

Year	1998	1999
	512.7	514.1

Two Year Average: **513.40**

Homogeneity of Array Variances:

F Test Calc: $p =$ **0.151632**

(Since p is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $p =$ **0.275814**

Conclusion: Since p is $> .05$, the Algebra I Scale Score difference is not significant at the $\alpha = .05$ level.

Appendix F.6: CSAS High School Test Data **School Number 46**
(Chattanooga School for the Arts and Sciences)
SRO Assigned: 1/98 **2003 20 Day Enrollment = 446**

Year	1996	1997	1998		96-98 Summary
Algebra I Mean Scale Score	484.8	484.8	508.9		492.83 Points
TVAAS Percentile School Effect	39	21	54		38.0 Ave %
Writing 11th Grade	No Data	No Data	63.1		63.1 Ave %

Year	1999	2000	2001		99-01 Summary	Results
Algebra I Mean Scale Score	533.3	547.0	539.9		540.07 Points	+ 43.2 SS Increase t - test: two tails $p = 0.277$
TVAAS Percentile School Effect	89	79	No Data		84.0 Ave %	+ 46.0 % Value Added Increase
Writing 11th Grade	71.7	81.0	65.6		72.77 Ave %	+ 9.6 % Increase

**Appendix F.6: Chattanooga School for the Arts and Sciences (CSAS)
High School Test Data**

Student's t – test

Algebra I Scale Score Comparison 1996 - 1998 with 1999 - 2001

Algebra I Yearly Averages

Year	1996	1997	1998
	484.8	484.8	508.9

Three Year Average: 492.8333

Year	1999	2000	2001
	533.3	547	539.9

Three Year Average: 540.066

Homogeneity of Array Variances:

F Test Calc: ρ = 0.390305

(Since ρ is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: ρ = 0.006192

Conclusion: Since ρ is $< .05$, the Algebra I Scale Score difference is significant at the $\alpha = .05$ level.

Appendix F.7: Lookout Valley High School Test Data **School Number 165**
SRO Assigned: 1/98 **2003 20 Day Enrollment = 240**

Year	1996	1997	1998		96-98 Summary
Algebra I Mean Scale Score	501.4	500.2	514.7		505.43 Points
TVAAS Percentile School Effect	57	44	69		56.7 Ave %
Writing 11th Grade	N/A	N/A	62.3		62.3 Ave %

Year	1999	2000	2001		99-01 Summary	Results
Algebra I Mean Scale Score	557.5	549.5	549.67		552.22 Points	+ 46.79 SS Increase t - test: two tails $p = .001$
TVAAS Percentile School Effect	91	81	No Data		86.0 Ave %	+ 29.3 % Value Added Increase
Writing 11th Grade	68.6	76.0	68.3		70.97 Ave %	+ 8.67 % Increase

**Appendix F.7: Lookout Valley High School Test Data Student's t – test
Algebra I Scale Score Comparison 1996 - 1998 with 1999 - 2001**

Algebra I Yearly Averages

Year	1996	1997	1998
	501.4	500.2	514.7

Three Year Average: 505.4333

Year	1999	2000	2001
	557.5	549.5	549.67

Three Year Average: 552.223

Homogeneity of Array Variances:

F Test Calc: $\rho =$ 0.487774

(Since ρ is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $\rho =$ 0.000937

Conclusion: Since ρ is $< .05$, the Algebra I Scale Score difference is significant at the $\alpha = .05$ level.

Appendix F.8: Soddy Daisy High School Test Data
SRO Assigned: 8/98

School Number 220
2003 20 Day Enrollment = 1667

Year	1996	1997	1998		96-98 Summary
Algebra I Mean Scale Score	502.9	515.8	514.7		511.13 Points
TVAAS Percentile School Effect	59	64	62		61.7 Ave %
Writing 11th Grade	N/A	N/A	54.3		54.3 Ave %

Year	1999	2000	2001		99-01 Summary	Results
Algebra I Mean Scale Score	557.4	549.5	545.4		550.77 Points	+ 11.6 SS Increase t - test: two tails $\rho = 0.002$
TVAAS Percentile School Effect	83	95	N/A		89.0 Ave %	+ 27.3 % Value Added Increase
Writing 11th Grade	73.2	78.5	81.5		77.73 Ave %	+ 23.43 % Increase

Appendix F.7: Soddy Daisy High School Test Data Student's t – test
Algebra I Scale Score Comparison 1996 - 1998 with 1999 - 2001

Algebra I Yearly Averages

Year	1996	1997	1998
	502.9	515.8	514.7

Three Year Average: 511.1333

Year	1999	2000	2001
	557.4	549.5	545.4

Three Year Average: 550.767

Homogeneity of Array Variances:

F Test Calc: $p =$ 0.842212

(Since p is $> .05$, Homogeneity is not violated.)

Null Hypothesis H_0 : ($m_1 = m_2$)

t - test for two tailed $\alpha = .05$

Probability Calculated: $p =$ 0.001869

**Conclusion: Since p is $< .05$, the Algebra I Scale Score difference
is significant at the $\alpha = .05$ level.**

Appendix F.9: High School Summary Statistical Data

Schools	Statistical Test Results Before and After an SRO		Descriptive Comparisons Before and After an SRO		
7 HCSD High Schools	Algebra I Test Results	Statistical Significance ($p = .05$) Results	Algebra I TVAAS Results	Writing 11th Grade Test Results	Algebra I Test Results
Hixson	↑	Yes	↑	↑	↑
Tyner	↑	No	↑	N/A	↑
CSAS	↑	Yes	↑	↑	↑
Lookout Valley	↑	Yes	↑	↑	↑
Central	↓	No	↓	N/A	↓
Red Bank	↑	No	↓	↑	↑
Soddy Daisy	↑	Yes	↑	↑	↑
Total Schools	19	19	19	17	19
Total of Measures That Increased	10	6 Significant	9	17	8
Total of Measures That Decreased	9	1 Significant	10	0	11

Appendix F.9: High School Summary Statistical Data

Middle and High School Overall Test Results Summary						
Schools	Statistical Test Results Before and After an SRO			Descriptive Comparisons Before and After an SRO		
12 HCSD Middle Schools	Subject Area TCAP Change Results	Statistical Significance ($\rho = .05$) Results		Subject Area TVAAS Results	Writing 8th Grade Test Results	Algebra I Test Results
7 HCSD High Schools	Algebra I Test Results	Statistical Significance ($\rho = .05$)		Algebra I TVAAS Results	Writing 11th Grade Results	Algebra I Test Results
Total Schools	19	19		19	17	19
Total of Measures That Increased	10	6 Significant		9	17	8
Total of Measures That Decreased	9	1 Significant		10	0	11

Appendix G: Indicators of School Well-Being Summary

Appendix G: Indicators of School Well-Being Summary

Background: During the conduct of this research, I came in contact with many school indicators and have developed a listing of data that were of particular value. Too many indicators leave educators awash in a sea of data and too few may not cover the issues of concern. I have proposed the “Indicators of School Well-Being,” listed in Appendix G, to address the appropriate data, in my opinion, that would indicate and track the educational health of a school system. A good example would be the percentage of eighth grade students that take Algebra I. Although this percentage may be small, it is a good precursor of student success on NAEP and other tests due to the rigor of the subject (SREB, 2004). These Indicators of School Well-Being would be in the following six major data collection and tracking areas. They are Student Assessment, Teaching Environment, Student Learning Environment, Kindergarten through Grade 16 Pipeline, School Discipline, and School Administration. I have limited these data areas to the school environment only, not the community or home. The school district would have a comprehensive five to ten year plan, approved jointly by the school board and the county commission, addressing the goals and objectives of the school district relative to these indicators and their achievement timelines. This plan would define the specific indicators, be updated annually, indicate the data systems used, and the indicator goals to be met. The National Center for Educational Statistics provided an excellent roadmap and model for establishing a crime, violence, and discipline data system in a 2002 recommendations publication produced by a two year national task force that studied this topic (DOE, NCES 2002-312, July, 2002).

The National Center for Education Statistics initiated an annual series of youth

Appendix G: Indicators of School Well-Being Summary

indicators in 1989 that went beyond the school building and focused on areas like home environments and early childhood experiences (DOE, NCES 96-027, September, 1996). In 1994, six federal agencies formed the Federal Interagency Forum on Child and Family Statistics (FIFCFS) with a focus towards collecting data on children and youth. They issued their first report, "America's Children: Key National Indicators of Well-Being" in 1997 with twenty five indicators in the areas of Economic Security, Health, Behavior, Social Environment, and Education. Seven of the indicators in the first edition addressed educational measures (FIFCFS, 1997). The seventh edition has almost the same seven educational indicators and was considered in my current compilation of Indicators of School Well-Being (FIFCFS, 2003). In 2004, FIFCFS issued "America's Children in Brief: Key National Indicators of Well-Being, 2004." This report ratified the decreasing violence against children aged 12 to 17. It has dropped from 44 incidents per 1000 in 1993 to 11 per 1000 in 2002 (FIFCFS, NCJ 205911, 2004). The Office of Juvenile Justice and Delinquency Prevention now collaborates with 20 other agencies in producing these indicators (DOJ, NCJ 205976, August, 2004). The significance of these indicator reports is that they provide good examples of data that are currently compiled at the local, national, and international levels. The proposed indicators follow.

1. Student Assessment Indicators:

- a. TCAP Achievement Test Scores (Grades 3-8).
- b. Writing Test Score Results (scoring 4 through 6), (Grades 5, 8, and 11).
- c. Eighth Graders taking Algebra I (%) – College and NAEP success Indicator. #
- d. Scholastic Aptitude Test (SAT) Results.

Appendix G: Indicators of School Well-Being Summary

- e. American College Test (ACT) Results.
- f. SAT / ACT Results in the top 20% nationally per 1000 Graduates ("Measuring Up 2004" Report Metric).
- g. End of Course (EOC) Test (English I and Math Foundations II) Results.
- h. Gateway Graduation Exam (Algebra I, Biology, and English II) Results.
- i. Advanced Placement (AP) Exams per 1,000 11th and 12th graders. *
- j. AP Exam percentage of students scoring 3 or higher. *
- k. AP Exam Bonuses for students scoring 3 or higher (consider).
- l. Challenge Index; Number of AP Exams given divided by the number of graduating seniors. +
- m. Tennessee Value Added Assessment System (TVAAS) Indicators.
- n. Student Grade Point Average.
- o. Student Tennessee Lottery (Hope) Scholarship Qualification Rate.
 - # Measure from the Southern Regional Education Board (SREB, 2004).
 - * Measures from the National School Board Association Educational Vital Signs Report (EVS, 2004).
 - + Measure developed by Jay Mathews, Washington Post. Indicates college preparation levels (Mathews, 2003, December 2).

2. Student Environmental Indicators:

- a. Student Teacher Ratio.
- b. Budget expenditures per Student.
- c. Computers per Student.

Appendix G: Indicators of School Well-Being Summary

- d. Social Economic Status (SES) accounting.
- e. Student Teacher Conference Rate.

3. Teaching Environmental Indicators:

- a. Teacher Turnover Rate.
- b. Teacher Absentee Rate.
- c. Teacher Average Sick Days.
- d. Teacher Unfilled Position Rate.
- e. Teacher Substitute Request Rate.
- f. Teacher Substitute Filled Rate.
- g. Teacher Certifications.
- h. Teacher Advanced Degrees.
- i. Teacher TVAAS Levels.

4. Kindergarten through Sixteen (K-16) Progression Indicators:

- a. Ninth Grade Algebra participation Rate.
- b. Challenging Courses participation Rate.
- c. High School Graduation Rate.
- d. College Acceptance Rate - 2 Year and 4 Year.
- e. Remedial Required Course Rate.
- f. College Persistence Rate – Enrolled in College Year Two.
- g. College Completion Rate – Two Year and Four Year.

Appendix G: Indicators of School Well-Being Summary

5. Student Disciplinary Indicators:

- a. Expulsions.
- b. Suspensions.
- c. Truancy Indicators.
- d. Bullying Indicator (to be developed locally).
- e. Number Transferred to an Alternative School.
- f. Zero Tolerance Reporting (Firearm or other Weapon, Battery of a Teacher, other school employee, or a School Resource Officer).
- g. Victims of a Violent Act.
- h. SRO Reporting (Develop with School Indicators).
- i. School Reporting (Develop with SRO Indicators).

6. School Administrative Indicators:

- a. Capital Budget.
- b. Operating Budget.
- c. School TCAP Grades.
- d. School TVAAS Scores.
- e. Teacher Summary Data (TVAAS, Degrees, Certifications, Attendance, etc).
- f. Safety Plan Last Updated.
- g. Safety Plan Last Exercised.
- h. Five Year Plan Milestone Achievement Status.
- i. Ten Year Plan Milestone Achievement Status.

Appendix H: Unsafe School Choice Option

**Appendix H.1: Text of Elementary and Secondary Education Act Title IX, Part E,
Subpart 2, Section 9532**

SEC. 9532. UNSAFE SCHOOL CHOICE OPTION.

(a) UNSAFE SCHOOL CHOICE POLICY- Each State receiving funds under this Act shall establish and implement a statewide policy requiring that a student attending a persistently dangerous public elementary school or secondary school, as determined by the State in consultation with a representative sample of local educational agencies, or who becomes a victim of a violent criminal offense, as determined by State law, while in or on the grounds of a public elementary school or secondary school that the student attends, be allowed to attend a safe public elementary school or secondary school within the local educational agency, including a public charter school.

(b) CERTIFICATION- As a condition of receiving funds under this Act, a State shall certify in writing to the Secretary that the State is in compliance with this section.

Appendix H.2: Tennessee Unsafe School Choice Policy

TENNESSEE STATE BOARD OF EDUCATION

UNSAFE SCHOOL CHOICE POLICY

AUGUST 22, 2003

No later than the beginning of the 2003-04 school year, every local education agency (LEA) shall implement the Unsafe School Choice Policy approved by the State Board of Education as mandated under Section 9532 of the No Child Left Behind Act of 2001 (ECS, 2003). The LEA shall provide any student who attends a persistently dangerous school, or any student who has been the victim of a violent crime while at school, the opportunity to attend a safe school.

Section 1: Persistently Dangerous Schools

Any public elementary or secondary school, with the exception of a school established specifically for serving suspended or expelled students or students with behavioral disabilities, shall be considered persistently dangerous if it meets the following criteria for three consecutive years:

1. Has violence-related disciplinary actions as reported on the Annual Report of Zero Tolerance Offenses. Violence-related disciplinary actions shall be defined as any of the following: possession/use of a firearm, battery of a teacher or school employee (including a school resource officer assigned to the school), and possession/use of a weapon other than a firearm (a more detailed description of each of these offenses is provided in Section 3 of this policy); or

2. Has students who have been the victim of a violent crime at school as defined in Section 2 of this policy; and,
3. The sum of violence-related disciplinary actions and/or incidents of student victimization identified in criteria # 1 and criteria # 2 above are equal to or greater than 3% of the school's average daily membership.

Required Actions

Year 1: Any school meeting the criteria identified above shall receive notification from the Tennessee Department of Education. The district shall direct available federal and state resources to the school to identify problems and implement corrective action.

Year 2: Any school meeting the criteria for the second consecutive year shall evaluate its current school safety practices and submit a corrective action plan to the Tennessee Department of Education.

Year 3: Any school meeting the criteria identified above for three consecutive years shall be designated by the Tennessee Department of Education as a persistently dangerous school. Within 30 days of receiving notice of the designation the director of schools shall:

- 1) Notify the parents or guardians of all students attending the school that the school has been designated by the Tennessee Department of Education as a persistently dangerous school and provide for all students to be given safe school choice as provided for under the No Child Left Behind Act of 2001.

- 2) Submit a corrective action plan to the Commissioner of Education outlining the specific actions and timetable that the school will follow to insure the safety of students and faculty

Right to Appeal

A school designated as a persistently dangerous school shall have the right to appeal the designation. The appeal must be submitted by the director of schools to the Commissioner of Education within 15 calendar days of being notified of the persistently dangerous designation and must present clear evidence that the school provides a safe and disciplined learning environment for all students. A committee of practitioners appointed by the Commissioner of Education shall review the appeal within 15 calendar days.

Removal of Designation

Upon implementation of the approved corrective action plan and the completion of one school year with a level of dangerous incidents below the criteria established above, a school shall no longer be considered persistently dangerous.

Section 2: Victim of a Violent Crime at School

A student shall be considered the victim of a violent crime at school when the following criteria are met:

1. Evidence is found to reasonably indicate that the student has been the victim of any of the applicable offenses identified in TCA 40-38-111(g) or the attempt to commit one of the applicable offenses as defined under TCA 39-12-101; and,
2. The offense occurred while the student was attending school or traveling to or from school on a school bus.

Required Actions

1. The building administrator or a designated representative of a school where an alleged incident of student violent crime victimization has occurred shall immediately report the incident to the appropriate law enforcement agency.
2. Promptly following an investigation by appropriate law enforcement personnel, the building administrator or a designated representative shall determine whether or not reasonable evidence exists to indicate that a student has been the victim of a violent crime. Identification of a perpetrator and/or the filing of criminal charges shall not be considered a prerequisite for determining that a student has been victimized.
3. Upon determination that a student has been victimized, and within ten school days of the event, the director of schools shall offer the student and his/her parent(s) or guardian(s) safe school choice.
4. The building administrator or a designated representative shall file a report with the Tennessee Department of Education as requested by the Commissioner.

Parental Notification

Every public school shall annually notify parents that if their child is the victim of a violent crime at school, the child has the right to attend another grade-appropriate public school in the district.

Section 3: Definitions

For the purposes of this policy, the following definitions shall apply:

Safe School Choice: The student and his/her parent(s) or guardian(s) are provided an opportunity to transfer to another school within the local education agency (LEA) that is safe for the student. To the extent possible, the LEA shall allow transferring students to transfer to a school that is making adequate yearly progress and has not been identified as being in school improvement, corrective action or restructuring. The LEA is encouraged to take into account the needs and preferences of the affected students and parents. The LEA shall assume necessary transportation costs associated with the student attending a safe school. An LEA with only one school at a particular grade level may choose to facilitate a transfer to a school in another school district; however, such transfer shall not be required.

Violence-related disciplinary actions: A violence-related disciplinary action is one taken for any of the following offenses:

1. Possession or use of a firearm, as defined in 18 U.S.C. § 921.
2. Battery of a teacher or school employee (including a school resource officer assigned to the school). For purposes of this policy, battery is defined as

intentional or reckless physical contact with a person without his or her consent that causes bodily injury.

3. Possession or use of a weapon other than a firearm (as defined in TCA 39-17-1309).

Violent Crime: Any of the following applicable offenses as identified and defined in T.C.A. 40-38-111(g): Aggravated arson, Aggravated assault, Aggravated child abuse and neglect, Aggravated kidnapping, Aggravated rape, Aggravated robbery, Aggravated sexual battery, Aggravated spousal rape, Spousal rape and spousal sexual battery, Aggravated vehicular homicide, Carjacking, Criminally negligent homicide, Especially aggravated burglary, Especially aggravated kidnapping, Especially aggravated robbery, First degree murder, Incest, Kidnapping, Rape, Rape of a child, Reckless homicide, Second degree murder, Sexual battery by an authority figure, Sexual battery, Stalking, Statutory rape, Vehicular assault, Voluntary manslaughter.

Appendix I: Tennessee School Testing Program Data Issues

Appendix I: Tennessee School Testing Program Data Issues

Background: The evaluation of student achievement testing results provided potentially the most comprehensive and compelling data describing any learning environmental changes from the SRO implementation which may have occurred within the schools in question over the 1994-2003 time period. Much has been written on the necessity of a safe learning environment as a condition for student learning. Feelings of anxiety about personal safety and concerns over this issue is often indicated as an impediment to learning and, in one recent study, was characterized as follows "...school safety is one of the main challenges for the American middle school." (Juvonen, Kaganoff, Augustine, and Constant, 2004). The School Resource Officer organizations have consistently inferred that learning improves with safety. Unfortunately, as seen in the SRO evaluations conducted to date and reviewed as a part of this research, increased learning attendant to increased school safety had yet to be shown in a quantitative manner by using achievement test scores. The School Violence Resource Center stated that "...few, if any, studies exist that examine the correlation between SROs and academic achievement" (SVRC, 2001). The intent of this research was to remedy that research void.

1. Achievement Test Data Sources:

The data used in the achievement test results portion of this research came from the five sources listed below:

a. Tennessee Department of Education, Nashville, TN:

The Assessment and Evaluation Division, Tennessee Department of Education, Nashville, TN, through the Executive Director, provided the Algebra I 1998-2001 NCE school level scores and the 1994-2003 TVAAS school level scores,

b. Tennessee Department of Education, State Assessment Office, Knoxville, TN:

The State Assessment Office Director provided the school level TCAP Achievement Test scale scores, 1998-2003 Writing Test school level scores, and 1994-1997 Algebra I TVAAS school level scores.

c. The SASS in Schools Division of the SAS Institute Software Company in Cary, NC:

The manager of SSAS in Schools provided the TCAP Achievement Test school scale scores and the 1990-2000 TVAAS school level scores (Education Week, July 12, 2000).

d. Hamilton County School District (HCSD) Electronic District Information Book (EDIB):

The HCSD Information System Manager provided the 2000-2001 EDIB consisting of 1999, 2000, 2001 HCSD school year Data on a CD-ROM.

e. Tennessee Department of Education, Nashville Website:

The 2002-2003 and earlier HCSD Report Cards consisting of the TCAP and TVAAS school and grade level scores. State and federal reporting accountability systems for identifying schools needing

improvement were merged for the 2003-2004 school year (Tennessee Comptroller Report, April, 2004).

2. Achievement Measures Utilized for Comparisons:

The selection of the actual metrics to use was dictated by the availability of the data and the appropriateness of the measures. These measures are evaluated here. The data available included Normal Curve Equivalent (NCE) scores of norm referenced test (NRT) data, Median National Percentile (MNP) scores of NRT and criterion referenced test (CRT) data, Tennessee Value Added Assessment System (TVAAS) scores. TVAAS scores are normalized to 100 percent equaling a normal years "gain" considering a minimum of the current and prior two years data. Writing Test scores using the percent passing scores were also compared. All measures were at the grade and school levels. Changes in these quantitative achievement measures could indicate an improvement in or degradation of a school's learning environment. School achievement measure changes have been used in a number of recent studies to evaluate the effectiveness of school level educational treatments, most notably some of the Comprehensive School Reform (CSR) efforts. This research uses these same measures to note changes which may have occurred at the time of the HCSD's implementation of its SRO Program. A brief description of the achievement change measures used in this study with additional background on other usages follows.

3. Mean National Percentiles (MNPs):

Using changes in MNP scores, a WestEd 2003 California study related school level score increases on the Stanford Achievement Test (SAT-9) in three subject areas to lower levels of vandalism and theft (Hanson and Austin, 2003). Edison Schools, which run for profit educational programs in approximately 150 schools nationally, used change in MNPs to gauge improvement in its Fifth Annual Report on School Performance issued last year (Edison, 2003). Edison shifted to using “z” scores of CRTs for comparisons in its Sixth Annual Report (Edison, 2004). A cumulative MNP gain was used in the 2001 CSR evaluation of the Memphis School System (Ross, Wang, and Alberg, 2001). This research uses a cumulative percent of normalized gain scores for the TVAAS comparisons.

4. Scale Scores (SSs):

SSs measure performance on a continuum and are equal interval which allows mathematical manipulation. SSs are often used to measure changes in performance. Following up on an earlier attempt (Viadero, 1998, June 17), an Educational Testing Service (ETS) researcher used scale score differences to investigate value added changes in National Assessment of Educational Progress (NAEP) data (Coley, 2003). NAEP data currently does not have a value added component within its methodology. The ETS effort was an attempt to measure more closely to “... what actually happens in schools” which is the knowledge imparted to students as value added or learning gained (Reid, 2004, March 17). A more recent major study in Arizona schools by the Goldwater

Institute compared charter school and public school performance gains using scale score changes to show those improvements (Skiba and Peterson, 1999).

5. Normal Curve Equivalent (NCEs):

Michael Russell, a researcher at Boston College, evaluated the changes in MNPs, SSs, and NCEs as measures of improvement and preferred the latter two since they were interval, not ordinal measures (Russell, 2000, 7-5). NCEs were initially used in order to have a measure that did not have the comparable problems of grade equivalent scores from different tests (McCall, Kingbury, and Olsen, 2004). In a follow-on article, Russell clearly preferred using a “Standardized Growth Expectation” (SGE) over the MNP, SS, and NCE measures as it utilizes z-scores and effect sizes for better change definition and comparison (Russell, 2000, 7-6). The SGE measure approximates the TVAAS methodology itself. Manhattan Institute researcher Jay Greene advocated more z-score methodology usage also (Greene, Winters, and Forster, February, 2003). More recently, the Council of Great City Schools issued its “Beating the Odds IV” report on reading and math gains by inner city youth in 61 districts nationwide. In the data analyses, MNPs and SSs were converted to NCEs throughout (without explanation or justification however) as part of the research data reduction process (Casserly, 2004). This same methodology was used in this research for the Hamilton County middle schools for the 1997 and earlier Achievement Test data (MNPs were converted to NCEs). The kurtosis (degree of peakedness) of the NCE distribution is leptokurtic (smaller variance) compared to the MNP kurtosis which tends towards a platykurtic distribution (larger variance) for the

same information (Hinkle, Wiersma, and Jurs (1994). NCE differences would then be smaller than MNP differences for the same scale scores changes. In other words, MNPs provide for more score spread while yielding the same statistical results.

Hamilton County itself has looked at differences in Achievement Test NCEs to evaluate changes in its "Benwood" Schools Comprehensive School Reform project (Miller, 2004, February 23). The Benwood schools were nine Chattanooga inner city elementary schools targeted with a grant from the Benwood Foundation to improve test scores, especially reading (Mathews, 2004, February 10). All nine of these schools demonstrated statistically significant increases in each of the five TCAP subject areas over the last two years (Cary, 2004, February 25). The HCSD Benwood schools have also used their average TVAAS scores on the TCAP Achievement Test results to indicate their overall positive performance (Carroll, 2002, May 20 and July 29).

The HCSD received a National Education Association Foundation grant to evaluate over the next five years test score differences in five inner city middle schools to reduce the achievement test "gap" between whites and minorities. The grant will fund various programs and progress and will probably be measured by NCE score differences as was the case with the Benwood schools (Sher, 2004, June 3). The Benwood school third graders who were able to read at grade level increased fifty percent using NCEs while teacher turnover declined fifty percent over two years during the Benwood initiative (New, 2004, June 27).

The Tennessee Education Department has further indicated that the averaging of the five TCAP Achievement Test subject areas tested and their associated TVAAS scores can provide legitimate measures of performance

(Carroll, 2003, April 9). The Tennessee Institute for Public Policy (TIPP) averaged both TCAPs and TVAAS results in a 2001 report ranking all Tennessee schools (TIPP, 2001). Most recently, Peter Goldschmidt, et al, indicated that since NCEs are relative measures, SSs will provide the better measure for the gains treatments. However, since the NCEs are more readily available, they can still be used for arithmetic comparisons as both NCE and SS measures are very highly correlated (above .94) with each other (Goldschmidt, Choi, and Martinez, 2004). It appears that the averaging of TCAP Achievement Test NCE results is an accepted achievement measure and the averaging of both TVAAS and NCE scores is the technique used in this study.

6. Tennessee Value Added Assessment System (TVAAS):

The TVAAS measures were averaged as indicated. The TVAAS methodology was developed as a result of the initiation of the Tennessee Comprehensive Assessment Program (TCAP). In 1990, Tennessee passed a legislative initiative to improve education in Tennessee with the TCAP system. TCAP Achievement Tests were annually given to grades 2 through 8 in five subjects. These subjects were Reading, Language, Math, Science, and Social Studies. This was followed by the pioneering TVAAS legislation in 1992 requiring that a value added measure on those tests begin in the 1993 school year (Pipho, 1998). TVAAS was developed at the University of Tennessee (Archer, 1999, May 5). TVAAS was later applied to other measures such as the TCAP End of Course Tests in the high schools (Sanders, 1998). The TVAAS statistical methodology is a multi-variate (multiple subjects), repeated measures (multi-year), and three level

(student, school, and district) nested hierarchical linear model (HLM) which takes three or more years of longitudinal TCAP scores and calculates a student effect, a school effect, and a teacher effect using the student gains on the test scale scores (Betebenner, 2004). These results can be aggregated to the district level. TVAAS has the advantage of, in effect, controlling for potentially confounding factors such as socio-economic status (SES), student transfers, racial make-up, class sizes, school locations, and prior achievement levels as these factors appeared minor in comparison to the teacher effectiveness measure. The TVAAS system showed that teacher effectiveness was, by far, the dominant factor, other than the students themselves, in gains achieved (Long and Hayasaki, 2004, February 8). In summary, TVAAS effectively controls for the other confounding factors with its gains approach treatments (Goldschmidt, 2004). The scaled scores provided the starting bases for the student gains calculations. Tennessee's TVAAS approach is the most ambitious and detailed value added system in the country (Lockwood, Doran, and McCaffrey, 2003). TVAAS uses the norm referenced data components of TCAP and will be converted to using criterion referenced data as required to measure progress per the current NCLB requirements (Tennessee Comptroller Report, April, 2004). Classified as a "cross classified nested three level multivariate model," TVAAS can reach back over as many as five years though only three years are needed for one subject for one cohort. The three levels are the student, the school, and the district while the teacher "effect" crosses all of those levels (Lockwood, Doran, and McCaffrey, 2003). A more recent value-added model comparison evaluation called TVAAS a "layered mixed effects model" as opposed to a HLM (Hibpsman, 2004).

Value added systems have been adopted by a total of 21 states following its implementation in Tennessee a decade ago (Raffaele, 2004, March 17). Of the three hundred school districts currently using the methodology (one hundred thirty-seven in Tennessee), not all are using the results to improve instruction which is the real benefit of these data (Pierce and Murray, 2004). Using the student value added results should cornerstone any school district's data driven decision making protocols.

Sufficient "gains" (TVAAS teacher scores) by teachers in Tennessee will count towards being considered "highly qualified" per the No Child Left Behind (NCLB) requirements as approved by the U.S. DOE (Tennessee Comptroller Report, April, 2004). All teachers are required to be highly qualified by the 2005-2006 school year (2003-2004 for Title I schools) per the NCLB requirements. Tennessee recognizes a teacher's importance in the classroom and has determined that the TVAAS measures it (Riley, 2004, March 16). As indicated in the previous section on NCEs, the averaging of the TVAAS scores to show overall results is also accepted and used in this research.

7. The Benwood Program:

In addition to using TVAAS scores to meet the highly qualified NCLB requirements in Tennessee, the HCSD has received national attention for its program to staff Chattanooga inner city schools with highly qualified teachers by offering various financial and career incentives to teachers. Twelve exceptional teachers, picked in part with their TVAAS scores, transferred to the Benwood schools for financial incentives in 2002 to improve school test scores. The

incentives were financed by the Community Educational Alliance (CEA), a business leaders' group in Chattanooga (More, 2002, September 9). The teachers also received additional bonuses directly related to their TVAAS scores. A TVAAS score of 115 percent yielded the teacher \$5,000; an extra \$1,000 per teacher was paid if the school reached 115 percent, and \$2,000 per teacher was paid if the school reached 120 percent. The principal received a \$10,000 bonus if a school TVAAS level of 115 percent or higher was attained (Gang, 2002, March 13). Third year bonuses were paid in the spring of 2004. Future payments, if any, will be made from Title I funds as this was the final year of the three year program (Gang, 2004, May 15). It is important to determine who the good teachers are so that their techniques can be replicated for other teachers and they can also be rewarded. It was also found that having a good teacher continued to raise a student's performance two to three years into that student's future (Crane, 2002).

The National Council on Teacher Quality has praised Tennessee for using the TVAAS scores to evaluate whether teachers are highly qualified (Tracy and Walsh, 2004). Nationwide, the Denver, Colorado teachers union recently voted to add a pay-for-performance package called "ProComp" that will recognize the gains in student test scores (Waldman, 2004, March 30) The teachers passed the program by a 59 to 41 percent margin and it will go into effect in January, 2006 if voters approve of the tax increase required to fund the program (Rocky Mountain News, 2004, March 20). Virginia is also evaluating rewarding exceptional teachers to transfer to low performing schools (Hendrie, 2004, May 19). The Education Trust, a Washington, DC educational research organization, supported the value added system as the best way to reward the truly effective

teachers and assure that the students who need these effective teachers get them (Cary, 2004). The growing recognition of the benefit of value added scores and when they are used in this manner testifies to their strength as a valid and reliable measure of student gains. The National Center for Fair and Open Testing warns against using only one years' data to reward or sanction teachers due to the fluctuations in these data (Neill, Guisbond; Shaeffer, Madden and Legeros, 2004).

Vita

Ross Frederick (Rick) Rogers, III was born in Bossier City, Louisiana on August 27, 1944. His father was a career Air Force Officer and he was raised in Japan, France, and all over the United States. He attended high school in Redlands, California, graduating with honors in 1962. Receiving a Presidential Appointment to the United States Naval Academy, he graduated with an Engineering Degree in 1966. Following graduation and commissioning as a Naval Officer in the U.S. Navy, he commenced nuclear submarine training, qualifying in submarines aboard the USS Nathaniel Greene (SSBN 636) in 1968. Following a final tour as Chief Engineer aboard the USS Ray (SSN 653), he resigned honorably from the Navy in 1974, joining the U.S. Atomic Energy Commission. Following successively more responsible managerial assignments within the military, the government, and the nuclear utility industry, he retired in 2004 as a senior executive from the Tennessee Valley Authority.

Mr. Rogers obtained his M Ed. Degree, Magna Cum Laude, in Education from Georgia Southern University in 1982 and is currently completing his Doctorate in Education, Summa Cum Laude, from the University of Tennessee in Knoxville, Tennessee. He also holds a Chief Nuclear Engineer designation from the U.S. Navy and a Senior Reactor Operators License from the U.S. Nuclear Regulatory Commission.

Mr. Rogers currently resides with his wife, DeLane, on Signal Mountain, Tennessee.

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