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## A meta-analysis of service learning research in middle and high schools

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**A META-ANALYSIS OF SERVICE LEARNING RESEARCH IN MIDDLE AND  
HIGH SCHOOLS**

**Amy E. White, B.A., M.Ed.**

**Dissertation Prepared for the Degree of**

**DOCTOR OF PHILOSOPHY**

**UNIVERSITY OF NORTH TEXAS**

**December 2001**

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This study examines the relationship between service learning innovations and improved academics, self-concept, and social or personal growth in middle and high school students. Meta-Analysis is employed to arrive at effect-size estimates for each construct. A historical overview of service learning is presented and a detailed description of the study selection process is provided.

The data revealed a moderate relationship between service learning participation and academics, self-concept and social or personal growth in middle and high school students. The findings are presented, and some appropriate conclusions are drawn. A discussion of the implications of these findings and recommendations for future research are also provided.



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## TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS .....	iii
LIST OF TABLES .....	v
1. INTRODUCTION.....	1
Background of the Problem	
Rationale for the Study	
Statement of the Problem	
Purpose of the Study	
Research Questions	
Definition of Terms	
Limitations	
Methodology	
Summary	
2. LITERATURE SURVEY .....	10
Introduction	
Foundations of Service Learning	
Public Discussions of Service Learning	
Service Learning in Higher Education	
Service Learning in Middle and High Schools	
Parameters of Service Learning	
The Need for Analysis	
Summary	
3. METHODOLOGY.....	31
4. RESULTS AND DISCUSSION .....	41
5. IMPLICATIONS AND RECOMMENDATIONS .....	51
APPENDICES .....	61
REFERENCE LIST .....	70

## LIST OF TABLES

Table	Page
1. Formulae and Procedures for Converting Study Statistics to $r$ .....	62
2. Formulae for Computing Effect Size Estimates .....	63
3. Foundations/Corporations Asked to Provide Data .....	64
4. Numbers of Observations in Each Construct Category .....	42
5. Effect Size Estimates Derived from Meta-Analysis .....	43
6. Original List of Qualitative Outcome Variables .....	65
7. Outcomes Noted in Qualitative Research Studies .....	46
8. Original List of Qualitative Program Qualities.....	66
9. Qualities for Successful Service Learning .....	48
10. Percentage of Qualitative Studies Containing Each Student Outcome.....	49
11. Percentage of Qualitative Studies Containing Each Program Quality .....	50
12. List of Studies Included in the Analyses.....	66

## CHAPTER 1

### THE PROBLEM

#### Background of the Problem

If one attempts to trace the current condition of schools back to one pivotal event, it would have to be the 1983 publishing of A Nation at Risk (NCEE, 1983). These statements caused what is best described as panic in both public and private sectors, and led to an era of increasing pressures on schools, and everyone involved in them to reform the American educational system, and do it quickly. As long as there have been schools, there have been movements to reform schools; but rarely has there been such hyper-reform as exists in the current education system. The time since the 1990's is certainly not the first period in American history where school reform became an issue. The launch of Sputnik in the 1950's created a rush to science and mathematics reform and the 1960's saw the rise and fall of such reform movements as open space classrooms, and community-based education (Pogrow, 1996). Educators have seen many innovations brought to the forefront with little or no support and consequently, these innovations have fallen by the wayside (Hord, Rutherford, Huling-Austin, & Hall, 1987). Directors of Reading Instruction have wavered over time in the question of phonics versus whole-language instruction. Middle Schools experimented with "open-concept" schools where the walls were abandoned in favor of removable partitions. American education is marked by the number of innovations brought into schools aimed at improving student achievement. Many if not most of them were implemented without a proper foundation in research. The difference now is that the stir caused by the 1983 report caused not only a

rush to reform, but also a rush to judgment, blame, and increasingly Nationalized school standards.

Few periods of school reform history can compare to the rigorous movement created by the 1983 report, A Nation at Risk. This report, produced by the National Commission on Excellence in Education, outlined what would become the most far-reaching reform movement in decades. The impact of A Nation at Risk continues today as schools are asked to create better students, better schools, and better citizens. At the same time, schools are struggling to meet the demands levied on them. Many innovations have been proffered. The accountability movement has seen the dramatic increase in standardized testing. Examples of current reforms include whole language, vouchers, heterogeneous grouping, teacher empowerment and team teaching. Lovers of reform are ecstatic; the traditionalists seem to be on the run (Pogrow, 1996).

The philosophy known as service learning is gaining wider acceptance among educators. The National Service Learning Cooperative defines this method as a teaching and learning method that connects meaningful community service experience with academic learning, personal growth, and civic responsibility. In the 1995 report issued by the Alliance for Service Learning, the authors state, "service learning connects young people to their community by placing them in challenging situations where they associate with adults and accumulate experiences that can strengthen traditional academic studies" (Kunin, 1997). If one listens to service learning proponents, the idea might form that this method could be a valuable tool in the current efforts aimed at National school reform.

So how do educators go about the business of deciding what is best for students in the 21<sup>st</sup> century? The press and even many well-known educators paint a dismal picture

of the lack of progress since the 1983 report. How do those in the business of education choose the innovations to reform the nature of education in America? Peter Drucker arrives at three conclusions regarding the fate of new ideas. First, ideas that become successful innovations represent a solution that is clearly definable, is simple, and includes a complete system for implementation and dissemination. Second, successful innovations start small and try to do one specific thing; and lastly, knowledge-based innovations are least likely to succeed and can succeed only if all the needed knowledge is available (Drucker, 1992). Pogrow (1996) argues that fault lies in the types of reforms educators are seduced into pursuing by a reform/academic research community that is largely out of touch with reality.

In November of 2000, the W.K. Kellogg Foundation produced the Roper Report detailing some of America's beliefs about schools. Most Americans (89%) agree that improving the public education system should be a very high priority. More than eight of ten Americans (83%) strongly agree, "a good education is much more than just reading, writing, and learning to do math" (p 3). More than two-thirds of Americans report that schools have a definite responsibility to: 1) teach students skills that will help them succeed in the workplace (68%) and 2) teach students how to use what they learn in the classroom for real world problems (66%) (Roper, 2000). So if research is not providing the answers to school reform, and the majority of Americans believe that schools should do more than just dispense curriculum, some useful solutions must be offered.

Service learning advocates offer service learning as one such solution. Service learning occurs in many forms and in many settings. Sheckley and Morris (Sheckley, 1997) give several illustrative examples. Second-graders entertain patients at a nursing

home. High school students design and produce anti-drug messages for radio, TV, and newspapers as part of a writing course. College students volunteer in a homeless shelter or soup kitchen to fulfill requirements of a political science curriculum. These, and programs of similar nature are labeled as "service learning". The question then becomes, "Can service learning help schools reform and remold the American educational system?"

### Rationale for Study

This study is particularly timely as many districts wrestle with the issue of improved citizenship among their students. In 1983, Goldberg and Harvey analyzed the findings of the report known as A Nation at Risk (Goldberg & Harvey, 1983; NCEE, 1983). This report, produced by the National Commission on Excellence in Education, outlined what would become the most far-reaching reform movement in decades. A portion of this report focused on public commitment to education and commented, "The best term to characterize [this facet] may simply be the honorable word "patriotism". And further concludes, "And perhaps more important, citizens know and believe that the meaning of America to the rest of the world must be something better than it seems to many today" (p. 18). In the America 2000 report (DOE, 1991), President George Bush Senior and the nation's governors set goals for America's school children by the year 2000. Goal number five is particularly germane to this study stating, "Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship (emphasis added). This goal is echoed time and again in the 1994 National Standards for Civics and Government published by the Center for Civic Education. In the ninth through twelfth



grade standards, goal number five is echoed in the statement, "Students should be able to evaluate, take, and defend positions on competing ideas regarding the purposes of politics and government and their implications for the individual and society." The same set of standards holds that "Students should be able to evaluate, take, and defend positions on the importance of voluntarism in America (p. 102). Now more than ever schools are making decisions as to how best achieve these goals.

The Roper Report (Roper, 2000) details the majority opinion of the American public. The public envisions education as developing students' social skills and sense of civic engagement (p 4). Fifty-six percent report they feel the schools have an obligation to develop students' leadership skills. Fifty four percent say schools should encourage good citizenship among students. The public is concerned that schools are not meeting their obligations. School reform advocates argue similar positions. Everyone seems to be seeking a "cure" for the state of education in the modern United States.

Service learning advocates offer this method as a panacea. Claus and Ogden (Claus, 1999) suggest Service Learning can:

- 1) make learning more relevant
- 2) close the gaps between schools and their communities
- 3) help youth address significant, real-world issues
- 4) motivate and empower young people to think critically and
- 5) contribute to a clearer sense of identity, self-worth, efficacy, and belonging.

The above do indeed sound comparable to the laments of both the American public and the school reform advocates.

But all service learning is not created equal (Boyte, 1991). What are the parameters to a "good" service-learning experience? Does service learning have the same effects on primary and secondary students as it does on college-aged students? Do even poorly executed service experiences have impacts on the citizenship of students? What variables can be studied? Is the current research measuring the affective goals that SCANS, A Nation at Risk, America 2000 and the National Standards for Civics and Government set for today's students? A thorough evaluation and analysis of research is needed at this critical juncture in educational reform. Educators must know what effect, if any service learning has on today's students in grades five through twelve.

#### The Problem

If schools and the research community are to accept Service Learning as a method of school reform, a detailed analysis must be conducted to determine if Service Learning can produce the necessary benefits to school-aged children.

#### Purpose of the Study

The study uses meta-analysis (Glass, 1978) to determine what is known, quantifiably, about the effects of service learning on school-aged children in fifth through twelfth grades.

## Research Questions

The following questions will guide the study.

1. What conclusions do quantitative studies draw concerning service learning in the middle and high schools?
2. What conclusions do qualitative studies draw concerning service learning in middle and high schools?
3. What effect size is determined by an analysis of the available research?

## Definition of Terms

**Quantitative studies** are those studies employing classic quantitative methods for statistical analysis. Studies may employ methodologies as correlations, ANOVA, ANCOVA, and such similar methods (Gall, 1996)

**Qualitative studies** are those studies employing accepted qualitative methods such as ethnography (Laureau, 1996), interview, focus groups, thick description and such similar methods (Glesne, 1999)

**Service learning** is a teaching approach which offers students the opportunity to critically examine their own lives and the society around them through significant and authentic work in the community outside of the classroom (Anderson, 1991).

**Middle schools** are public or private schools that service students in fifth through eighth grades.

**High schools** are public or private schools that service students in ninth through twelfth grades.

**Meta-Analysis** is the application of statistical procedures to the empirical findings in research studies for the purpose of summarizing and concluding whether the findings in the studies overall were significant (Shumacker, 2001).

#### Limitations

- 1) The researcher can only produce a meta-analysis effect size for studies using quantitative methods and that report the necessary information (statistic value, sample size, degrees of freedom, p-value).
- 2) The researcher can only include service learning studies where service is truly connected to learning and the curriculum, not simply community service impact studies.
- 3) The researcher is limited by the findings reported in the literature. Where an author does not report sufficient information, and the missing information cannot be calculated from the report given, such studies must be excluded from the analysis.
- 4) The researcher can use qualitative studies of the phenomenon only to ascertain what this research concludes, and analyze systematically the findings of such studies.

#### Methodology

The analysis will be conducted using a procedure called meta-analysis. This method combines results from different quantitative research studies by translating the findings of a set of studies on the same phenomenon into a statistic called an effect size (Gall, 1996). Gene Glass is credited with developing the procedure its present form (Glass, 1976).

## Summary

Chapter 1 provided an introduction to the background of the problem. Additionally, the chapter included the purpose and rationale for the analysis of research concerning service-learning programs in middle and high schools. Research questions were presented, terms were defined and the limitations of the study were discussed.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

#### Introduction

Henry David Thoreau once stated,

“Students should not play life or study it merely, while the community supports them at this expensive game, but earnestly live it from the beginning to the end. How could youths better learn to live than by... trying the experiment of living.”

Benjamin Barber restated this sentiment: “Service to the neighborhood and to the nation is not the gift of altruists, but a duty of free men and women whose freedom is itself wholly dependent on the assumption of political responsibilities” (Allen, 1997). Service learning is a teaching strategy that links community service experiences to classroom instruction (Billig, 2000). It joins two complex concepts: community action, the “service,” and efforts to learn from that action and connect what is learned to existing knowledge, the “learning” (Stanton, 1999). According to a 1999 survey conducted by the U.S. Department of Education, eighty-three percent of all public high schools organize some form of community service for students. One-half of the public high schools provide service-learning programs where the service is tied to the school curriculum (Skinner & Chapman, 1999).

## History of Service in America

While the service learning movement is a relatively new terminology in education circles, calls for service to the nation are nothing new. In an address at Stanford University in 1906, psychologist William James proposed national service as a way for a democratic nation to become, and stay, cohesive, especially under threat of war (Sherraden, 1981). James, and many like him argued that the "gilded youth" of America ought to be required to serve the nation in order to "toughen" their spirit and help them recognize the poverty that exists within the country (Gorham, 1992).

Franklin Delano Roosevelt recognized the need for national service when he proposed the Civilian Conservation Corps to put young people to work during the depression, saying,

"We can take a vast army of these unemployed into healthful surroundings. We can eliminate, to some extent, at least, the threat that enforced idleness brings to spiritual and moral stability." (Gorham, p5)

John F. Kennedy echoed the need to educate youth in service when he proposed the Peace Corps. But it is since the 1970's that the federal government has taken an active role in propagating and publicizing this new trend; and that trend involves educators in the process.

Numerous bills have come before Congress promoting various National Service Initiatives. The most noted of these is the Sam Nunn-Dave McCurdy National Service Bill (SR3-1989) that tied federal education aid to service programs (Gorham, 1992). President George Bush, Sr. introduced the Youth Entering Service (YES) program that sets aside more than twenty million dollars for voluntary service work for young

people. Bush went so far as to sign into law Public Law 101-610, a comprehensive law that includes a variety of youth service schemes. Also called the National and Community Service Act of 1990, Conrad and Hedin (Conrad, 1991) mark this as "the most significant community service legislation in many decades." (p. 743) They further point out that the funding of this measure passed the rigors of Congressional oversight during a time of severe federal budget austerity. Public Law 101-610 provides funding for community service programs in schools and colleges and provides support for full-time service corps that students can enter after high school. President Bush's call for service also extended into his Points of Light campaign. President Clinton furthered the call in 1993 by signing the National Service Trust Act of 1993 (Alt, 1997; Kraft, 1996). Throughout the Nation's history, the issue of service has been resurgent.

Likewise, the modern public's cries concerning students' lack of community involvement are not the first time the American nation has lamented such ideals. Americans have always worried about the next generation. Even the first American Puritans voiced more worry about their less devout "unsatisfactory children" than about crop failures and arctic winters. Abraham Lincoln commented that democracy is always one generation removed from extinction. Only one-third of the colonists supported the American Revolution. The abolitionist movement never numbered more than about 100,000—a small fraction of the population of the United States at the time (Editor, 1990). Americans always see the next generation as less active, less involved, and less informed than they.

In the 1830's, Alexis de Tocqueville noted that in traditional European societies one's status and role was derived from the relationships to others, where in the United



States, Americans are more focused on individualism. Noted educator John Dewey often discussed the connection between school and community. Social reform became the focus for many progressive schools between the First and Second World Wars. It was during this time that the Civilian Conservation Corps appeared. While primarily a youth unemployment program, it became the forerunner for countless youth service programs and corps in the 1980's (Kraft, 1996). Many classic examples under gird service in America's schools. George Counts's (Counts, 1932) Dare the Schools Build a New Social Order? and Hanna's Youth Serves the Community are two (Hanna, 1932).

The Citizenship Education Project (CEP) promoted active learning and community studies at Teacher's Colleges during the 1950's (Kraft, 1996). The 1970's saw great progress in the youth service movement. The Panel on Youth of the President's Science Advisory Committee (1972), the National Committee on Secondary Education's (1972) American Youth in the Mid-Seventies, the Carnegie Commission on Higher Education (1973), Coleman's (1974) Youth: Transition to Adulthood, the National Manpower Institute (1975), the National Panel on High School and Adolescent Education (1976), and Martin's (1976) The Education of Adolescents proposed everything from service programs to interaction with a greater range of people.

The call to service was resurgent during the 1980's when such educators as John Goodlad brought service back to the attention of American's after the 1983 "back to basics" movement sparked by the publication of A Nation at Risk (NCEE, 1983). In A Place Called School (Goodlad, 1984), John Goodlad included community service among educational recommendations. Ernest Boyer (Boyer, 1983) called for service requirements for graduation in High School. In 1995, Boyer argued, "Knowledge

unguided by an ethical compass is potentially more dangerous than ignorance itself” (Kunin, 1997). The Carnegie Foundation issued two reports (Carnegie, 1989; Harrison, 1987), which also called for service opportunities, particularly in the middle grades.

Today, in the twenty-first century, it would seem that studies like the Roper Poll (Roper, 2000) indicate that Americans believe schools have an obligation to address these needs. In order to address the looming educational ills of poor citizenship and lack of community participation, among others, schools need solid reform efforts, grounded in good theory and documented by sound research. If service learning is to be among the school reform efforts, its possibilities must be dissected into two categories: theory and research.

### Foundations of Service Learning

Service learning appears to be the most recent manifestation of what is now a relative 100-year history of American educational reform attempts to bring the school and community back together, to build or rebuild a citizenship ethic in our young people, and to bring more active forms of learning to our schools (Kraft, 1996) p.135. Most service learning advocates trace it’s roots to the writings and speeches of John Dewey.

Dewey’s ideas concretely explore the idea of experiential education saying, “experience is the best teacher” (Korowski, 1991), p.91. Dewey often spoke and wrote about the need to abandon traditional rote learning in favor of experiential learning. He felt students needed to interact with learning that is both meaningful, and related to their lives. Dewey often described a society in which students learn things in a process far different from the “plastering on of knowledge” of traditional education (p.92).

Dewey's writings in the 1930's have also served as the underpinnings for David Kolb's Experiential Learning Cycle that evolved during the 1980's. In his model, Kolb echoes Dewey's distrust of traditional learning by including elements such as 1) learners grasp information via concrete experiences and abstract concepts, 2) learners transform this information using reflective observation and active experimentation and finally, 3) individuals experiment actively with the concepts they've acquired (Sheckley, 1997).

Service learning, as a derivative of Dewey's experiential education, is most deeply rooted in American higher education. The term first arose in 1964 in connection with programs at the Oak Ridge Associated Universities in Tennessee (Wutzdorff & Giles, 1997, p. 107). The next milestone surfaced in 1972 when the University Year for Action, a federal program, involved students from campuses across the country in serving their communities. Campus-level service programs quickly spread to many schools, University of Vermont and Michigan State University being two examples.

The National Center of Service Learning was opened in the early 1970's in conjunction with the federal government. Many early service programs used the nomenclature "community service". This terminology was however abandoned in the 1980's for fear that it was being confused with many juvenile offender programs. While community service represents doing good works without pay, service learning is designed and directed simultaneously to addressing genuine community needs and student learning (Toole, 2000). Service learning is not simply the activity of performing some task with benefit to the community; rather it is a model of teaching (Bruce, Weil, & Showers, 1992). In 1985, the Campus Compact was formed. This commission, formed from the Education Commission of the States, was subtitled as "The Project for Public and

Community Service.” This consortium of college and university presidents supported the educational value of service learning and expressed their commitment to foster public service on their campuses. Wutzdorff and Giles credit this organization with being the catalyst for postsecondary service and the development of service learning programs (Wutzdorff & Giles, 1997).

The Student Literacy Corps (SLC) was formed in 1989, was funded by the U.S. Department of Education, and encouraged colleges and universities to become involved in efforts to increase literacy in their local communities. This effort disbanded in 1994 due to lack of sustainability. The 1995 annual conference for the American Association for Higher Education (AAHE) themed it’s meeting “The Engaged Campus”. Similarly, at the Annual Meetings of the American Educational Research Association (AERA) the number of sessions devoted to service learning increased from zero to around a dozen from 1992-1995. During the 2000 Annual Meeting of the AERA, conference programs contained approximately sixteen sessions where at least a portion of the presentation included service learning. The American Sociological Association, the American Psychological Association, and the American Political Science Association also now regularly feature service learning at their conferences (Wutzdorff & Giles, 1997). From Dewey’s notion of the involved learner in the 1930’s to the widespread growth in interest in service learning by professional conferences, service learning has evolved into a philosophy all its own.

## Public Discussions of Service Learning

As interest in service learning grows, so too does the literature relating to the innovation. Though under girded in respected educational philosophers like Dewey and Counts, there is much dispute over what specifically service learning is and what specifically it can do.

The first and most challenging issue raised in the literature is the lack of a cohesive definition of the phenomena. The National Service Learning Cooperative offers, "Service learning is a teaching and learning method that connects meaningful community service experience with academic learning, personal growth, and civic responsibility." The Alliance for Service Learning in Education Reform suggests that, "service learning connects young people to their community by placing them in challenging situations where they associate with adults and accumulate experiences that can strengthen traditional academic studies." Anderson and Guest (Anderson, 1991) suggest that, "Service-learning is a teaching approach which offers students the opportunity to critically examine their own lives and the society around them through significant and authentic work in the community outside of the classroom." Cairn and Kielsmeier determined that community service learning is the integration of meaningful service to one's school or community with academic learning and structured reflection on the service experience (Cairns & Keilsmeier, 1991). The National Society for Internships and Experiential Education stated: "Service, combined with learning, adds value to each and transforms both." There are numerous definitions for service learning. When carefully examined, all definitions seemingly point to very similar purposes for service learning. Barbara Gomez of the Council of Chief State School Officers rightly observed, "The

meaning of service learning will continue to be defined in different ways.” (Brown & Gomez, 1994) For example, in a report by the Association of Supervision and Curriculum Development, Witmer and Anderson (Witmer & Anderson, 1994) noted that “by treating young people as resources for community problem solving...service learning has the revolutionary potential for transforming schools...it requires new thinking about education, about what happens in and out of the classroom...It requires that you question the very core beliefs of your school, for it begins with [asking] what do we agree is important for students to know, to be able to do, and to value?” (Kunin, 1997) Even without a comprehensive definition of service learning, by examining the most prevalent characterizations of this philosophy, one can begin to understand the most basic aims and tenets of service learning.

When examining the literature, Jeff Claus and Curtis Ogden (Claus, 1999) attempted to delineate the common outcomes for service learning programs. They assembled a list of service learning outcomes, stating that this methodology:

- 1) makes learning more relevant;
- 2) closes the gaps between schools and their communities;
- 3) helps youth address significant, real-world issues;
- 4) motivates and empowers young people to think critically and
- 5) contributes to a clearer sense of identity, self-worth, efficacy, and belonging.

If service learning is to become a true catalyst for school reform, its aims, goals, and limitations must be carefully examined. In his 1997 article, Stan Karp expressed trepidation that service learning could become another “anemic” application of a potentially powerful idea (Karp, 1997). Similarly, Kahne and Westheimer (Kahne &

Westheimer, 1999), Boyte (1991), and others (Jones, Maloy, & Steen, 1996; Lakes, 1996; Youniss & Yates, 1997) also caution against adopting “weak,” “feel good,” or “superficial” versions of service whose goals and limitations are ill defined.

Another potential problem in the literature is that most of the work currently published to guide educators in this philosophy is done at the higher education level.

### Service Learning in Higher Education

A discussion of the literature surrounding service learning in higher education is necessary to promote understanding and build theory. One could argue that if research has begun to quantify empirical relationships between service learning in higher education and benefits to college-aged students, then one could also argue for a similar research agenda in grades five through twelve. The following discussion illuminates some of the documented benefits of service learning to students at higher education institutions.

A good deal of higher education literature exists in the field of teacher education. Much is said of the possibilities service learning holds to improve novice teachers. Rahima Wade (Wade, 1995) surveyed a group of teachers-in-training and found several outcomes produced by service learning. The majority of participants (82%) reported increased self-efficacy and almost fifty percent reported increased self-esteem. Among the service outcomes, the study found forty-nine percent of the students planned to continue service while 92% reported an increase in knowledge about serving and almost half developed a specific commitment to service. The same survey revealed 67% of the students increased their knowledge of others (usually not like them). These findings are encouraging and would be considered worthwhile in most educational circles. Other

research echoes Wade's call to implement service in teacher training courses. Cohen and Kinsey report that journalism-education students in the service learning course reported at significant levels that they developed a sense of the relationship of communication principles to the real work and that the learning exercises were more effective and more learning occurred (Cohen, 1994). They also reported the projects placed learning in a more meaningful context than other assignments. Vadeboncoeur, et al (1996) advocated service learning as a means to build democratic character in prospective teachers.

Throughout the literature there are references to support the call for service in teacher education programs. Swick (1999) points out that for both teacher education students and experienced teachers, service learning provides a structure for several important realizations:

- 1) One can be a caring person—that is, one can contribute, learn, and be responsive to others in meaningful and reciprocal ways (Noddings, 1992).
- 2) Caring and community improvement are interactive processes that depend on the empowerment of every person (Wuthnow, 1995).
- 3) Service learning also supports professional growth. Through it, teacher education students gain a more comprehensive understanding of the “persona” of being a teacher, including the significant influence of teachers in the lives of children and families (Erickson & Anderson, 1997).
- 4) Service learning allows interaction with professional role models, such as community leaders and teacher leaders (Waterman, 1997).
- 5) Service engages teachers in roles that encourage them to re-think how they respond to the totality of the lives of children and families (Alt, 1997).



6) Service helps teachers reflect on the importance of serving all children

(Erickson & Anderson, 1997).

Swick (1999) further argues that student teachers learn meaningful approaches through the experiential and reflective service learning activities in which they participate. He would go so far as to indicate that service learning has the potential to transform teachers and children and the families they serve. The body of higher education, service learning research supports such claims.

Wade, Anderson and Pickeral surveyed teacher educators from 21 different colleges and universities throughout the United States and noted two specific benefits evolving from service experience: positive experiences for their pre-service teachers and increased collaborations with others on campus and in the community (Wade, 2000). Currently there are more than 6.7 million students in public and private four-year institutions of higher education. Nearly thirty percent of them report participating in course-based service learning projects. Over 72% of student enrolled in service learning courses rated their course above average and found the experience rewarding and nearly 54% of students in service learning courses self-reported a desire to continue to do volunteer work and actively participate in helping others (Stallions, 1999). There is ample support for service learning in teacher education as well as other areas of higher education.

In their 1999 study, Astin and Sax found all 35 student outcomes measured by their survey were favorably influenced by participation in service learning (Astin, 1999). The outcomes included academic outcomes such as GPA and amount of interaction with faculty, civic responsibility and life skills such as critical thinking, leadership skills, and

knowledge of different races or cultures. Barber, Higgins and Smith, et al., found similar outcomes in their 1997 study in five historically black colleges and universities. Students who participated in service learning showed gains, though they were small, in their mean scores for religious tolerance, racial tolerance, and civic participation while students with no service learning showed virtually no improvement in these areas (Barber, 1997).

When studying 226 students in private colleges, Batchelder and Root found significantly increased gains in pro-social decision-making and pro-social reasoning among the outcomes of the students who participated in service learning (Batchelder, 1994). The results of Berson and Younkin's study indicated that service learning students achieved significantly higher mean final course grades (.26 difference) when compared to a control group (Berson, 1998). These students also reported significantly higher satisfaction with the course, the instructor, the reading assignments and the grading system. The involved faculty reported the class discussions with service learning students involved much more student involvement and challenged the students more, academically. In the Journal of Moral Development, Boss used an experimental group of students, randomly selected, to form one section of a course, and include 20 hours of service per semester, and keep a journal (Boss, 1994). On the post-test, the service-learning group scored much higher on their Defining Issues Test (DIT). Though grades were comparable in both sections, the students who participated in the service enhanced course used principled moral reasoning significantly more than their counterparts who did not participate in service (51% to 13%,  $p < .01$ ).

There are postsecondary studies that link service learning to other educational efforts. Service learning has been used to accomplish some of the goals of multicultural

education (Dunlap, 1998). Content analysis from the journals of Child Development students revealed that service learning in their course brought forth in many of the students: 1) an awareness of their personal philosophy regarding racial issues and, 2) concerns regarding specific multicultural or race-related incidents. In their pivotal work Where's the Learning in Service-Learning?, Eyler and Giles showed service learning impacted such positive outcomes as personal development, social responsibility, interpersonal skills, tolerance and application of learning in the college students involved in their study (J. Eyler, & Giles, D. E., 1999). Eyler, Giles and Braxton used hierarchical linear multiple regression to determine that service learning was a predictor of a career of valuing people, as well as volunteering and influencing the political system (Eyler, 1997). In a study by Fenzel and Leary, while students quantitative analysis indicated that students in a service section did not show greater gains in attitudes toward personal and social responsibility or in moral judgment, in students' qualitative interviews, the service learning students revealed more compassion toward the disadvantaged, more commitment to community work and a greater belief that they could make a difference (Fenzel & Leary, 1997).

Many studies, similar to the aforementioned, exist on a post-secondary level. For a more extensive review of post-secondary studies, Eyler, Giles and Grey's analysis and summary should be consulted (J. Eyler, Giles, D. E. & Gray, C. J., 1999). The number of studies produced that offer researched evidence in support of service learning is staggering. What educator would deny the desire to instill such qualities in their students? What reform advocate would discard a teaching method that would help achieve those ends? Active participation in learning and problem solving, increased tolerance,

commitment to community, increased critical thinking and leadership skills are ideals most educators share. Service learning has a documented, researched history of providing gains in these areas. The problem exists in the lack of a cohesive research agenda for those interested in service learning for school reform. If service learning is to aid secondary and middle grades teachers in achieving such gains in their students, more quantifiable research must be conducted in the middle and high schools.

### Service Learning in Middle and High Schools

Much of the literature written concerning pre-collegiate populations is anecdotal. Rappoport and Kletzein report the successes of the Kids Around Town (KAT) program (Rappoport, 1996). They rightly suggest that students are more likely to engage in learning when they see the role it plays in real life. The KAT program employs students in grades K-12 to research local problems in their community and work as a group to address them. The article describes many good service projects, connected to curriculum, completed by these students. Both teachers and students report feeling good about the things the KAT program has accomplished. In 1995, the Pennsylvania council for the Social Studies presented KAT with its Program of Excellence award. While teachers' intuition is indeed valuable, and students' outcomes are admirable, we have no data to support the conclusions drawn by the authors. Such is the case in much of the pre-college literature.

Program descriptions also fill the literature. There are myriad examples of service learning programs that both teachers and students alike feel are beneficial to the school and community. Anoka High School in Minnesota offers one such program. Mittlefehldt reports that high school students, with a grant from the United Way, conducted a

community needs assessment and helped adopt a community vision statement that was adopted by the city council (Mittlefehldt, 1997). The students continue to work for the environment, and Mittlefehldt describes many of the amazing things high school students have accomplished. Again, while the program deserves accolades for its accomplishments, there is no quantitative analysis to accompany the program description. There is no "evidence" of what impact this truly has on students.

Kate McPherson provides an excellent analysis of some of the noteworthy service learning programs in middle and high schools (McPherson, 1997). She states that as a group, service-learning programs have shown fairly consistent positive effects on students' personal development, social development/citizenship, and, to a lesser extent, intellectual development/academic success. Still, no quantitative analysis is presented. McPherson and Nebgen gave a detailed description of the programs in Puget Sound schools (McPherson, 1991). They conclude that service learning is a powerful way to integrate current educational reform recommendations with critical community concerns, resulting in improvements in the education of youth as well as solutions to community problems (p. 333). Indeed, the goals for the program and the program itself are reminiscent of the success stories lauded in the college and university settings. The difference still remains: no quantitative data is presented to buttress the case for service learning in middle and secondary schools. More recently, Boston detailed in the literature a program known as Earth Force that leads Denver middle school students through a six-step research/action process that has shown great successes (Boston, 1999). The involved parties express great satisfaction with the gains in self-confidence and problem solving that seems to occur in program participants. Again, while the evidence is encouraging, it

is also anecdotal. Governor Jim Hodges, of South Carolina notes that "Service-learning provides a wonderful opportunity for developing those character traits necessary to become a productive workers and family and community members." Currently there are 486 "Schools of Promise" in South Carolina that use methods like service learning to achieve a wide range of moral and character goals. The state received a four-year grant to assess the effectiveness of service learning, but no data has yet been published (Tenenbaum, 2000). Service learning program descriptions include those in the field of Economics (McGoldrick, 1998), Physical Education (Cutforth, 2000), Social Studies (Wade, 1997), and Science (Boston, 1999).

Another problem evident in the service learning literature is the confusion in terms. Examples in the literature include not only anecdotal reports and program description, but also reports of programs that may be mistaken for service learning. Programs such as Teens, Crime, and Community (Donovan, 1995), Denver's Project Lead and Chicago's Apprentice Teacher Program (Cutforth, 2000) all serve as examples from the literature of programs that are providing valuable links between school-aged students and community service. They do not, however, meet the parameters of service learning.

#### Parameters of Service Learning

In his 1998 article entitled, "Make Sure It's Service Learning, Not Just Community Service," Leonard Burns addresses a critical issue in the literature: not all community service is service learning (Burns, 1998). Burns defines service learning as an interdisciplinary instructional strategy that facilitates the development of knowledge and skills while helping students understand and accept civic and social responsibility. He

goes on to argue that while service learning often includes a community service component, it is a structured learning process. Service learning must not only meet a need within the school or community, but must be tied to the curricular goals of the school or subject where service learning is being implemented. In their book Where's the Learning in Service-Learning, Eyler and Giles (1999) present two studies that help define what effective service learning should be. The authors use analysis of student surveys to conclude that the following make a difference in the effectiveness of service learning:

- 1) Placement quality.
- 2) Linkage between the academic subject matter and service.
- 3) Written and oral reflection.
- 4) Diversity and,
- 5) Community voice.

Several of these caveats are mirrored in Burns' work (1998). He indicates that effective service learning programs:

- 1) Engage people in responsible and challenging actions for the common good.
- 2) Provide structured opportunities for people to reflect critically on their service experience.
- 3) Articulate clear service and learning goals for everyone involved.
- 4) Allow for those with needs to define those needs.
- 5) Clarify responsibilities for each person and organization involved.
- 6) Match service providers and service needs through a process that recognizes changing circumstances.
- 7) Expect genuine, active, sustained organizational commitment.

- 8) Include training, supervision, monitoring, support, recognition and evaluation to meet service goals.
- 9) Insure that the time commitment for service and learning is flexible, appropriate, and in he best interests of all involved, and
- 10) Are committed to program participation by and with diverse populations.

Other practitioners of service learning concur with these findings. Stallions (1999) included 1) the appropriateness of the student to service match and 2) reflection as two of the critical features for success in service learning programs. Ikeda completed a study of the benefits of reflection in service learning programs. She concludes that reflection is critical to the service learning process as it contributes to the current efforts to reconceptualize learning outcomes and processes by showing students how to make sense of the new ideas, attitudes, people, and experiences that they are encountering through the service experience (Ikeda, 2000). Wade also advocates the use of student reflection to assist them in making meaning from what they've learned (1995). Schaps and Lewis posit that regular, structured class meetings must occur to allow students to engage in problem solving (Schaps, 1998). The environment should encourage a collaborative learning environment that both emphasized challenging academics and respectful treatment of fellow students. The curricula must also engage students by studying the ethical issues that are at the heart of history and literature. The Alliance for Service Learning in Education Reform (1997) indicates that the standards for service learning programs should:

- 1) Strengthen service and academic learning.
- 2) Provide concrete opportunities for youth to learn new skills and think critically.



- 3) Include student preparation and reflection
- 4) Include peer recognition of students' efforts in the community and.
- 5) Involve youth in the planning.

While there are no concrete, published rules and guidelines for effective service learning programs, a perusal of the literature allows for the formulation of a clear picture.

### The Need for Analysis

The post-secondary schools literature supports a number of quantifiable conclusions. Service learning has a positive effect on student's personal development such as sense of personal efficacy, personal identity, spiritual growth, and moral development (Astin, 1999; Boss, 1994; Driscoll, Holland, Gelmon, & Kerrigan, 1996; Freidus, 1997; Gray et al., 1998; Keen & Keen, 1998; Markus, Howard, & King, 1993; Sledge, Shelburne, & Jones, 1993; Wade & Yarbrough, 1996). Service learning has a positive effect on interpersonal development and the ability to work well with others, leadership and communication skills (Dalton & Petrie, 1997; Driscoll et al., 1996; J. Eyler, & Giles, D. E., 1999; Mabry, 1998; Peterson, 1998; Raskoff, 1997). Service learning has a positive effect on reducing stereotypes and facilitating cultural and racial understanding (Balazadeh, 1996; Bringle & Kremer, 1993; Dunlap, 1998; Fenzel & Leary, 1997; Greene & Diehm, 1995; Kendrick, 1996; Ostrow, 1995). Service learning has a positive effect on sense of social responsibility and citizenship (Barber, 1997; Giles & Eyler, 1994) (Myers-Lipton, 1998; Robinson & Barnett, 1996). The college and university literature also supports such statements as: Student or faculty report that service learning has a positive impact on students' academic learning (Boss, 1994;

Cohen, 1994; J. Eyler, & Giles, D. E., 1999; Miller, 1994; Oliver, 1997; Schmiede, 1995).

The benefits of service learning to post-secondary students are well researched and documented. Many of the calls for reform in the middle and high schools seek the very benefits to students that service learning is known to provide. As Yale University child psychiatrist James Comer has said, "In every interaction, you are either building community or destroying community." Schools have no choice about whether to shape citizenship and character. Every aspect of schools—from discipline policy to fund-raising strategy—does so. The only choice schools have is how well they will shape the students' citizenship and character, and in what direction. The process must begin with a cohesive research agenda. Schools must know concretely what service learning can do for students at the middle and high school level. The foundation of this research agenda must be a critical review of what is known and unknown about service learning in those schools. The beginning of this process is best served by a meta-analytic inspection of the current middle and high school service learning literature.

### Summary

This chapter has provided an overview of the information available in the literature surrounding service learning. A framework was presented to determine the nature of service in America, and the long history leading to the innovation now commonly referred to as service learning.

# CHAPTER III

## METHODOLOGY

### Meta-Analysis

This study is a meta-analysis of service learning research completed in grades five through twelve in public and private schools. The goal of a meta-analytic study is to synthesize the data from a number of studies in order to obtain an effect size estimate of the magnitude of a relationship between the independent and dependent variable. For this study, the independent variable was the service learning intervention. After reviewing the literature, it was determined that the empirical studies on service learning would necessarily be divided into three constructs in order for the analyses to be appropriate and reflect a true body of knowledge: 1) academic progress, 2) self concept, and 3) personal and social growth. Therefore, three separate analyses were completed in order to assess the known effects of service learning on each of these three outcome constructs. Several sub-categories emerged in these constructs. These included improved attitudes toward self, school, others different from themselves, teachers, learning, civic action/participation, risk-taking and responsibility. Chapter four includes a list of the outcomes that were examined.

Meta-analysis is beginning to gain wider acceptance in the research arena and is a useful tool to synthesize bodies of research into manageable "chunks" for closer examination. Bangert-Drowns, in 1986 stated,

Meta-analysis is not a fad. It is rooted in the fundamental values of the scientific enterprise: replicability, quantification, causal and correlational analysis. Valuable information is needlessly scattered in individual studies. The ability of social scientists to deliver generalizable answers to basic question of policy is too serious a concern to allow us to treat research integration lightly. The potential benefits of meta-analysis methods seem enormous (Hunter. 1990).

The meta-analysis procedure is conducted ex post facto because presumably, the causes are studied after they have exerted their effect (Gall. 1999).

### Sample

The studies being dissected in this analysis were conducted from 1983 to December 2000. The population of interest includes only studies conducted in grades five through twelve, in both public and private schools. A thorough search of the literature indicated that studies of interest do not exist in any recognizable form prior to 1983, with only one exception. Also, since this study wished to analyze service learning as a method of achieving school reform initiatives, the date 1983 is particularly relevant to the modern reform movement (A Nation at Risk. 1983 ). Though some anecdotal research does exist with a population of school-aged children in grades below five, it is the feeling of the researcher that below fifth grade, valid measurement of reform outcomes is not probable. Students in grades five and above are assumed to be able to express themselves well enough to give valid responses to the methods used to measure gains in service learning outcomes.

## Data Collection

When conducting meta-analysis, the first hurdle that must be overcome is the determination of which studies should be included in the analysis (Rosenthal, 1991). The studies examined by this analysis were collected from several sources. The first source was the Educational Resources Information Center (ERIC). ERIC includes several indexes and sources for both primary and secondary literature. Secondary sources are found in ERIC's digests, which were useful tools to obtain an overview of the relevant literature before determining the final locators to use in searching ERIC's other resources: Current Index to Journals in Education (CIJE), and Resources in Education (RIE) (McMillan, 2000). In order to gather a complete collection of research, other sources were also consulted and are detailed later in this chapter.

The initial search of ERIC yielded 1139 "hits". All were examined, and the list was narrowed to slightly less than 300 that actually concerned service learning. Of those 300, approximately 40 appeared to contain the types of research that fit the population of interest. The forty articles and papers were examined and those that contained quantitative or qualitative analysis of the outcomes of service learning interventions in grades 5-12 were selected for this study. Many of the documents yielded by this initial search contained information about service learning that were not of interest to this study. A plethora of program evaluation, how-to guides, and anecdotal reports of program progress were abundant within the results of the searches.

A thorough search of the UMI Dissertation Abstracts Database was used to obtain a list of dissertations, which add to the body of research published in journals and presented as papers. The initial search produced a total of 144 dissertations. The primary

locators were "service-learning", "service" and "learning", "community service" or "community service" and "learning". These 144 studies were given cursory reviews by the researcher. Approximately fifty appeared from their abstracts to contain information germane to the meta-analysis; that is they studied the population of interest and used a program that was indeed service learning as defined in chapter one. Those fifty were examined, and 22 were found to actually meet the parameters of the study.

Though dissertations are frequently excluded from educational research efforts, any appropriate dissertation was included in the analyses. This decision was made for a number of reasons. First, excluding dissertations and/or theses can lead to publication bias (Greenland, 1987). Second, it can be assumed that even though the dissertations were not necessarily published in refereed journals, a committee of qualified professors and college deans can serve as proficient reviewers and editors of educational research. Finally, due to the nature of service learning research, the relatively few quantitative studies conducted are very recent, and appear as dissertations. The field is somewhat new and few refereed articles have yet been produced. That is indeed one of the problems with service learning research: many of the articles that journals have printed are not examples that would commonly be labeled as empirical research but rather anecdotal. This phenomenon is further discussed in chapter five.

None of the foundations and agencies contacted a) had any data that could be effectively analyzed, or b) would not provide their data for this research. A list of those contacted can be found in Table 3. Examples of these include the National Youth Leadership Council, the Fellows Program, Learn and Serve America and Learning Indeed. Many of the reports that were issued by these foundations examined the aspects

of participation and program evaluation. Additionally, much of their data were taken from programs that were not necessarily within the population on interest.

Data collection was limited to studies that directly involved service learning as defined in chapter one. Only studies with a discernable research methodology, as defined in chapter one, could be included. Due to the nature of meta-analytic research, and the need to gather effect size estimates for comparison, only studies using quantitative methods could be included in the meta-analysis. The primary search locators used to locate articles, studies, and dissertations included several key words: community service, experiential education, civic participation and various combinations of “service” and “learning”. The term “experiential education” did not prove to yield results that fit well with the focus on service learning, and was excluded from further, more detailed searches.

Though meta-analysis can only examine results of quantitative research, much valuable information exists in the body of qualitative research. Consequently, the latter half of chapter four includes a detailed analysis of the studies that employed qualitative analysis to determine the relationship of service learning to student benefits, as service learning is defined in chapter one.

#### Data Analysis of Quantitative Studies

The problem of this meta-analysis is to determine what the available research quantifies about the relationship of service learning interventions to variables describing benefits to students, primarily improved students’ 1) academic progress, 2) self concept, and 3) personal and social growth. This analysis could not, due to the nature of the published research, focus on any particular outcome variable, so the outcomes were



placed into appropriate construct categories. Any improvement in student attitudes (i.e., improved attitude toward self, others, school, learning, etc.) can be seen as a positive outcome from service learning participation; so all outcomes were included in the three broader outcome constructs. The only questions this analysis sought to answer was, “What effect does service learning have on students in grades five through twelve, and what effect size estimate can be determined from the literature?”

Analysis of the data encompassed both quantitative and qualitative methodology. The identified studies that utilized quantitative statistical analysis were analyzed using the meta-analysis process as Glass (1976) describes. The studies’ various statistics of interest (i.e.,  $p$  calculated,  $F$ ,  $t$ , etc.) were converted into a common, weighted statistic, and an effect size for the entire body of literature was determined. Studies were collected and analyzed for fit of the meta-analysis. Any study that focused on college students, or on the service program itself, rather than the student outcomes were necessarily excluded from the meta-analysis, though some were used in the coding strategy employed with qualitative research.

Naturally, studies conducted on students outside the United States, were not included, as they are theoretically not affected by the 1983 report A Nation at Risk. Once the data were assembled, the statistics from individual studies were converted into a common metric for later accumulation. Table 1 in Appendix A presents the specific formulae for converting study statistics to the Pearson  $r$ , which can then be compared, meta-analytically, and a study-wide effect size determined.

It is important to note that a meta-analysis of this nature does not seek to “prove” anything about service learning interventions, but gathers one effect size for a number of

studies in order to begin looking at the benefits of such interventions in grades five through twelve, nationwide. Glass, when advocating meta-analysis, posited that as educational researchers, we find ourselves in the position of knowing less than we have proven (p. 7) (Glass, 1976). As early as 1976, Glass argued for more careful composite analyses of the myriad significance tests that are performed every year in educational research. He went so far as to suggest relevant analysis: effects of phonics approaches being a prime example (Glass, 1976). As a brief topical search indicates, the medical field has embraced meta-analysis. Still, in 2001, meta-analysis in the field of education is considered new, and is approached by many with skepticism. Certainly true scientific research, particularly in the field of education is unique. Frequently true experimental studies are impossible or unethical when school-aged children are involved. For these reasons, this analysis must be used correctly: not as an ironclad statement, but as a firm, foundational argument for the betterment of the field.

### Data Analysis of Qualitative Studies

With studies using qualitative analysis methods, qualitative methods were employed to determine what common elements existed among the studies. This secondary analysis sought to determine among qualitative studies, a) what outcomes were noted by the authors and b) when was service learning was seen to be successful, what reasons did the researchers give to account for success? These studies were read and coded, using grounded theory (Gall, 1996) to identify commonalities of service learning outcomes and patterns of service learning programs in the qualitative research literature. Strauss's theories on coding strategies (Strauss, 1990) were useful in this regard. Each

study was read and coded for two kinds of data: student outcomes and program characteristics. As a result, any studies focusing on outcomes for faculty or administration were excluded at this point.

In order to draw meaningful conclusions from the available qualitative research, the studies were coded for discrete categories. The first set of categories was divided into those qualities that researchers reported affected the effectiveness of the service learning intervention. These categories occurred whenever stated in either the affirmative or the negative. One such example would be the presence of guided reflection. A study was coded as having this quality if the author reported that reflection was in place in the program delivered, or if the author stated that the program would have benefited from the use of guided reflection.

The second set of categories discussed in the analysis was student outcomes as expressed by the author(s). These ranged from tolerance toward others "not like me" to appreciation of those being served and improved behavior. After the primary reading of each study, a colleague was asked to randomly code several studies to insure a measure of inter-rater reliability. The primary outcome of this session was the clarification and expansion of several categories. After all studies had been read and coded, a code summary sheet was developed, and some redundant categories were collapsed into the final coding scheme.

When all studies were appropriately coded, the summary sheets were used to determine the most common qualities and the most readily occurring student outcomes. Results are presented in chapter four.

## Procedure

An exhaustive search was made to collect the studies of interest so the meta-analytic procedure (Glass, 1978) (Hunter, 1990) could be employed. The goal of meta-analysis of correlations is a description of the distribution of actual correlations between a given independent and a given dependent variable. Though, a problem exists in the literature: much of the published educational research fails to report the appropriate information for this analysis. For instance, many educational researchers omit effect size estimates for their published studies. Effect size estimates are crucial to the use of meta-analysis. Effect size estimates should be reported as a matter of practice. The reporting of effect sizes leads the readers of educational research to more informed conclusions. If a significance test yields a statistically significant result, but no effect size is reported, the reader cannot make the most accurate use of this information. Effect size estimates tell the reader about the magnitude of the relationship represented by the significance test (Gall, 1999). For a lengthy discussion of the issue, see the discussions by Larry Daniel and Bruce Thompson (Daniel, 1998) (Thompson, 1998).

The process of meta-analysis allows a researcher to find out what empirical relationships have been revealed in previous studies, in order to understand a phenomenon as well as to build theory (Hunter, 1990). In order to continue with the analysis, a calculation was used to create effect size estimates for studies that were published without such measures reported (See Table 2, Appendix A). Though meta-analysis is seen as labor-intensive, the advent of high-speed computers, and user-friendly statistical software make new methods for computing statistical analysis, like meta-analysis, fast and cost-efficient (Diaconis, 1983). For this particular analysis, such a

research software program was employed to conduct the analysis. The program used was a subroutine of the software that accompanies Schumacker and Akers' book on statistical concepts (Schumacker, 2001). The program utilized the S-Plus data analysis program by MathSoft, version 4.

### Summary

This chapter detailed the methods by which the studies were selected for the sample. The methods for collecting the data and the criteria for excluding studies from the analysis were also discussed. Meta-analysis of quantitative studies and analysis of qualitative findings were also explained. The results of these analyses are presented in chapter four.

## CHAPTER 4

### RESULTS

The purpose of this study was to employ meta-analysis (Glass, 1976) to determine what is known, quantifiably, about the effects of service learning on school-aged children in fifth through twelfth grades. This chapter reports results of the meta-analysis performed on the quantitative data collected, and also reports on the findings of the qualitative studies collected. Statistical analyses were performed using S+ software, version 4, by MathSoft. The following research questions guided the study:

1. What conclusions do quantitative studies draw concerning service learning in the middle and high schools?
2. What conclusions do qualitative studies draw concerning service learning in middle and high schools?
3. What effect size is determined by an analysis of the available research?

#### Sample

The sample consisted of nine quantitative studies, twelve qualitative studies, and five studies that contained both quantitative and qualitative data. Three additional quantitative studies were coded for outcomes and qualities even though their quantitative data was not appropriate for inclusion in the meta-analysis. All studies were selected by the data collection method detailed in chapter three of this study. The quantitative data

from all studies yielded 64 separate observations. Many studies were necessarily excluded from the study. Most instances of exclusion regarded studies whose authors did not report appropriate and meaningful statistics. For the meta-analysis, both significant and non-significant findings were included in an attempt to ascertain the true effect size estimate of all research done in the field of service learning. One author in particular did not include the p value for any statistic that was non-significant. Those results could not be used or calculated from the information provided. The program used to analyze the data (Shumacker, 2001) required the following fields: statistic, statistic value, sample size, degrees of freedom and p-value. When possible, these were calculated from the author's information, if provided. If the necessary information was excluded, and manual calculation was not possible, the study or portions of the study were excluded from the sample.

#### Findings of the Meta-Analysis

The data were entered into the statistical program and analyzed. The observations were divided into three categories in order to more rigorously analyze each construct. The categories utilized were 1) academic progress, 2) self concept, and 3) personal and social growth. The numbers of observations for each construct are presented in Table 4.

**Table 4**

**Numbers of Observations in Each Construct Category**

Category	N
Academic Progress	7
Self Concept	29
Social/Personal Growth	28

The number of observations exceeds the number of studies analyzed. Many authors, especially within the dissertation studies, reported multiple outcomes with multiple statistical analyses. The three analyses results' are presented in Table 5.

**Table 5**

**Effect Size Estimates Derived from Meta-Analysis**

Category	Effect Size	Unbiased Effect Size
Academic Progress	.868	.524
Self Concept	.514	.451
Social/Personal Growth	.586	.441

The effect size estimate is an estimate of the strength of the relationship between the service learning innovation and the category of interest. The unbiased effect size is the same estimate, but takes into account the sample size of the study. The unbiased measure gives more weight to observations with larger sample sizes.

The category for Academic Progress included a number of outcomes. Several of these outcomes measured achievement in the classroom, and the few remaining measured a "willingness to learn" or "positive attitude toward academics". The unbiased effect size (.524) constitutes a moderate relationship between the service learning innovation and academic progress

Among the outcomes appearing in the Self Concept category were self-esteem, reduced feelings of inadequacy, and self-concept. Several instruments were used in various studies. Examples include the Rosenberg Self-Esteem Scale, the Coopersmith Self-Esteem Inventory and the Janis-Field Feelings of Inadequacy Scale.



The unbiased effect-size estimate for self-concept was .451. This indicates a moderate relationship between service learning and self-concept, though not as strong as the relationship between service and academic progress. This could be a function of the larger number of outcomes in the self-concept category, both statistically significant and non-significant. The academic progress category contained only seven outcomes and six of the seven were statistically significant.

Social and Personal Growth represented a number of related outcomes that were noted as the quantitative research studies were analyzed. In this category were included student outcomes such as efficacy, both personal and political; sense of duty to one's community; concern for the welfare of others; feeling competent to function within one's community and ability to "make a difference" in the community. The Social and Personal Responsibility Scale was used to measure these outcomes in most studies. This scale was developed in 1981 by well-respected community service advocates Dan Conrad and Diane Hedin. The unbiased effect size estimate for Social and Personal Growth was .441, which constitutes a modest relationship.

### Conclusions

The unbiased effect size is the statistic of interest for Table 5. When using meta-analysis, it is important to recognize that not all studies were conducted in a similar manner. Sample size is always a concern in null hypothesis testing. When the sample size of a research study is too small the results obtained may not be generalizable (McMillan, 2000). Small samples can yield important results, yet with only a few participants, the applicability of that study to other similar populations may not be sound. Since several of

the observations contained rather small sample sizes, it was necessary for the analysis to weight each entry according to the size of the sample. Generalizability is discussed further in chapter five.

In most studies, the effect size (either reported or calculated) estimated the magnitude of the difference between the experimental (service learning) group and the control group. Effect size estimates vary from 0 to 1.00. Standards for "substantive" effect size estimates differ among researchers. Much of the interpretation of results depends on the specific discipline in which the research was conducted. Generally, in education, less than .20 constitutes a weak relationship. An effect of .50 generally indicates a moderate relationship, and an effect size estimate above .50 can be considered strong relationship (Jaccard, 1983). In other fields, however, different standards may apply.

The effect size estimates derived in this study were all considered moderate effects. Certainly a result can be "moderate" and still be important. The relationship estimate for social and personal growth, while not quite as strong as Academic Progress or Self Concept, is still a notable result. Many of the studies contributing to this category reported results with statistical probability levels of .01 and .001. These indicate strong evidence of a relationship between social and personal growth and service learning participation. The estimate is likely weakened by the few studies that were statistically non-significant and reported probability levels as high as .93. Taken as a whole, this result is encouraging. The data seem to suggest that all three constructs benefit from the various service learning programs that were implemented in grades five through twelve. The implications of these effect size estimates are discussed in chapter 5.

### Results of Qualitative Analysis

The qualitative studies that were included in the analysis focused on student outcomes and program characteristics. An analysis of these two factors yielded noteworthy results. As each qualitative study was carefully read, the researcher coded discrete categories of outcomes that were noted by the authors of the studies. Grounded theory was used (Gall, 1996) to allow the pattern of outcomes to be driven by the information presented in the studies. The original list of outcome variables can be found in Table 6 of Appendix B. The numerous discrete variables were then collapsed into like outcomes and are reported in Table 7.

**Table 7**

**Outcomes Noted in Qualitative Research Studies (N=250)**

<b>Category</b>	<b>Number of Occurrences</b>	<b>Percentage of Total Occurrences</b>
Appreciate or Value Service	54	22
Academic Progress/Critical Thinking	52	21
Social or Personal Growth	44	18
Tolerance/Appreciation of Others	42	17
Self Concept	39	16
Improved Attitude Toward Teachers	8	3
Environmental Awareness	7	3
Improved Behavior	4	1
Total may not equal 100% due to rounding		

While each qualitative outcome was coded, it is important to note that each of these studies had separate, multiple research questions. Each category is an amalgam of all qualitative research studies. However, several studies had such a narrow focus that it would not have been logical for them to report outcomes in each of these categories. Categories containing fewer occurrences do not necessarily indicate lack of salience, but rather the wide array of studies included in this analysis. The full list appears in Appendix A, Table 8. As dissertation studies were also included in this analysis, the number of studies is dramatically less than the total number of outcomes. There are two explanations for this phenomenon: 1) many studies used multiple instruments, so several outcomes were reported per study; 2) Some of the studies focused on and investigated multiple groups or grade-levels and reported results for each.

It is interesting to note that two of the student outcomes that emerged from the qualitative studies, correspond to the outcomes investigated in the quantitative studies. Many times within the qualitative studies, authors noted an increased ability of students to think critically and solve problems in an academic arena, and many issues of social and personal growth were also mentioned in the qualitative data. This may indicate that service learning is indeed effective in these areas and does have a measurable, beneficial impact on students in middle and high schools. Implications of these results are discussed further in chapter 5.

Next, the researcher wanted to determine the qualities that are present when service learning is successful. As Boyte points out (Boyte, 1991), not all service learning is created equal. As yet, school reform advocates have no definitive description of how service learning works best. To that end, each qualitative study was also read and coded

for the qualities that the author indicated either caused the program to succeed, or the qualities that should have been present in order for the service learning innovation to succeed. The lengthy list of program qualities can be reviewed in Table 8 of Appendix A. However, the condensed list of like qualities is presented in Table 9.

**Table 9**

**Qualities for Successful Service Learning (N=258)**

Category	Number of Occurrences	Percentage of Total Occurrences
Appropriate and Beneficial Service	51	20
Preparation and Student Planning	47	18
Culture of Service Created/Existed	41	16
Reflection/Reflective Practices	29	11
Multi-Level Involvement/Support	22	9
Teacher Planning and Training	18	7
Student Leadership	11	4
Making Meaning of Service	9	3
Communication Between Parties	8	3
Accountability/Evaluation	6	2
Funding	4	1
Belief in the Cause	2	1
Total may not equal 100% due to rounding		

Though there was a wide array of program characteristics, a few categories stood out as common elements for success. The most noted program quality was the intentional and careful planning of a meaningful service experience. This included, but is not limited to 1) avoiding one-time acts of charity and 2) choosing service sites that were mutually beneficial (both the students and the served benefited from the experience). Another noteworthy result was the presence of guided reflection. This quality appears many times in the service learning literature.

Both the student outcomes and program qualities were further analyzed to determine, out of the total number of qualitative studies, which mentioned each of the categories of interest. The full list appears in Appendix A. A summary appears in Table 10 and Table 11.

**Table 10**

**Percentage of Qualitative Studies Containing Each Student Outcome (N=20)**

Category	Studies Containing the Outcome	% of Studies
Self Concept/Esteem	10	50
Improved Achievement	10	50
Social Skills	9	45
Accepting Responsibility	8	40
Empowerment of Students	8	40

**Table 11**

**Percentage of Qualitative Studies Containing Each Program Quality (N=20)**

Category	Studies Containing the Outcome	% of Studies
Reflection/Journaling	15	75
Student Choice/Planning	12	60
Service Embedded in Curriculum	10	50
Active/Hands on Learning	10	50
Teacher as Facilitator	9	45

The strong presence of many of the qualities mentioned lends credence to the service learning literature that frequently calls for such qualities as reflection and student choice in the planning process. These are discussed further in chapter 5.

**Summary**

This chapter presented the data collected from both quantitative and qualitative research. The effect size estimates from the meta-analyses were presented, and the program qualities and student outcomes from the qualitative studies were offered. The conclusion and implications of these analyses are presented in chapter 5.

## CHAPTER 5

### DISCUSSION

This chapter includes a summary of the study. The results presented in chapter four are discussed in detail and appropriate conclusions are suggested. Also discussed are the implications for service learning in school reform and recommendations for further research.

#### Summary

Since 1966, the Higher Education Research Institute at UCLA has conducted an annual, national survey of freshmen. It measures the level of service activity in high school, as reported by newly arrived college freshmen. The 1999 survey indicated that 75.3% of freshmen reported having been involved in community service in their senior year of high school. This is historically the highest figure ever reported (Kielsmeier, 2000). The U.S. Department of Education reports that 32% of all public schools organized service learning as part of their curriculum, including nearly half of all high schools (Skinner & Chapman, 1999).

While the term service learning may not be known widely or understood by the public, where it is known, it is supported. A media scan conducted recently by the W.K. Kellogg Foundation revealed that more than half of the articles written about service learning in the popular media were favorable (Billig, 2000). Service learning programs exist in every state in the union and several states like Florida and South Carolina have incorporated service learning statewide. Service learning appears to have staying power.



Advocates of service learning claim it cures many educational ills: lack of responsibility, disengagement from the community, and lack of self-esteem, to name a few.

Many believe that service learning is effective and can help with school reform initiatives and create a more active student-body and citizenry. However, no definitive measure of the innovation's effectiveness has heretofore been produced. This study sought to produce such information in order to ascertain what the true effectiveness of service learning is in grades five through twelve. Research studies conducted on service learning innovations were collected, read, and carefully analyzed into meaningful conclusions that will here be presented

#### Answer to Research Question 1

What conclusions do quantitative studies draw concerning service learning in the middle and high schools? Quantitative studies draw mixed conclusions about the impact of service learning in middle and high schools. While the studies all contained at least one result that reached a level of statistical significance, many of the reported outcomes were non-significant (though not necessarily unimportant). Frequently, though the result was not significant, the experimental or service learning group achieved mean gains in their scores. Their scores were a function of the outcome of interest and instrumentation in each particular study. Overall, however, all quantitative studies concluded that service learning had a direct, positive impact on several student outcomes that could be attributed to participation in service learning.

#### Answer to Research Question 2

What conclusions do qualitative studies draw concerning service learning in middle and high schools? Interesting enough, the outcomes that qualitative researchers

reported in great detail, were the same outcomes that many of the quantitative researchers found to be statistically significantly different from the control groups. Qualitative studies presented many interesting categories of positive student outcomes. Among the most mentioned outcomes were increased self-concept (21 occurrences), improved academic achievement (18 occurrences), improved social skills (16 occurrences), and students' planning to continue to serve outside the school setting (15 occurrences). These outcomes closely mirror the outcomes determined by the quantitative research studies that were meta-analyzed.

### Answer to Research Question 3

What effect size is determined by an analysis of the available research? Due to the nature of the data, three separate constructs were attained: Academic Progress, Self Concept, and Social and Personal Growth. Each of these categories produced an unbiased effect size estimate in the moderate range (.25 to .50). These results indicate a definite, positive relationship between service learning participation and the student outcomes listed in Table 6.

### Discussion

As presented in chapter four, the meta-analysis of service learning research yielded encouraging results. Moderate effect size estimates were obtained for all outcome categories: Academic Progress, Self Concept, and Social and Personal Growth. As previously mentioned, the importance of a result is determined by the discipline in which the research is conducted. In education, a moderate effect size (.50) is often considered an important result. Clearly, there is strong evidence that service learning positively, and

quantifiably impacts academics, self-concept and personal growth in students in fifth through twelfth grades.

The results of the qualitative analyses are also encouraging. Authors reported many instances of academic achievement, increased self-esteem, and increased tolerance of others. Andrew Furco reported, “[There] is some indication that the engagement of these students in some form of service provided them with positive academic, career, ethical, social, personal and civic outcomes.” The students in these studies reported exciting changes in their attitude toward service. The category that was most often cited in the qualitative research was an increased willingness to serve, or a more positive attitude toward service.

Not coincidentally, the most common reason cited by schools for using service learning is “to help students become more active members of the community” (53%). Forty-six percent of schools report they use service learning to encourage student altruism or caring for others, and 26% report service learning is used to improve student personal and social development (Skinner & Chapman, 1999). This research indicates that service learning appears to help schools accomplish many of these goals. Of the schools involved in Florida’s Learn and Serve America program, 75% reported that student grades improved with the utilization of service learning initiatives (Follman & Muldoon, 1997). Clearly, service learning works, when employed correctly.

The difficulty in reviewing the literature surrounding service learning is in determining exactly what “correctly” means. The qualitative analysis addressed this question as well. By looking at the qualities that researchers listed as a) contributing to

the success of service learning or b) needing to be present in order to insure success, the studies presented many qualities of beneficial service learning.

The National Service Learning Cooperative produced a list of Essential Elements in service learning . They are summarized as follows:

- 1) clear educational goals
- 2) students engaged in challenging tasks
- 3) program assessment to document students' mastery of content
- 4) students' tasks meet community needs and their own
- 5) systematic evaluation of the service effort and outcome
- 6) student voice in selecting, designing and implementing service
- 7) diversity is valued and practiced
- 8) communication and collaboration
- 9) students are prepared for all aspects of their service work
- 10) reflection takes place at all levels of service
- 11) multiple methods are used to celebrate students' work.

These program qualities are mirrored in the results of the qualitative analysis. The complete list of qualities is presented in Appendix B, Table 12. Much of the qualitative analysis coincided with the Cooperative's Essential Elements list. The two were created independently of one-another, and the Essential Elements were not in any way used to create the Program Qualities list that is found in Appendix A. The summary of the qualitative program qualities are summarized below:

- 1) Clear program goals and desired outcomes
- 2) Students actively involved in planning service

- 3) Service was mutually beneficial to the students and the served and filled a need in the community
- 4) Reflection and journaling occurred
- 5) Students were recognized for their service efforts
- 6) Communication between parents, teachers, students and administrators was clear and frequent.

#### Implications

While the results of the meta-analysis and qualitative analyses are encouraging to those interested in the use of service learning, there are even broader implications that flow from this study.

#### The need for more research

The small numbers of studies conducted in grades five through twelve are not sufficient to make broad, sweeping conclusions about the effectiveness of service learning in middle and high schools. The effect size estimates are encouraging, and certainly suggest that schools should begin to investigate the benefits that service learning can bring to a troubled school system. Still, with so many schools using service learning, there is an alarming lack of solid research studies that quantify these important relationships. More must be done if advocates of service learning are to marry the concept of service to school reform.

#### The quality of research

Research in the schools is difficult. It is frequently difficult to obtain permission to work with children under age eighteen. Experimental research in schools is frequently impossible or unethical; it is difficult to withhold a potentially good innovation from half

of a school population. Still, many of the studies encountered violated some basic research principles. Sample sizes were often small, and no evidence was presented that any power calculation was employed. Power (generally set at .80) is the safeguard against retaining a null hypothesis that is indeed, false (Gall, 1996). There are several easy calculations that provide a researcher with a minimum number of participants necessary to protect the power of the study; none were cited in the studies analyzed. There are also many underutilized internal replication measures that can give greater confidence to results yielded from small samples. The Jackknife (Tukey, 1958) and Bootstrapping procedures are two common and easy ways to insure greater replicability of findings in research where experimental designs are not usually possible. These measures were not employed in the analyzed studies.

Several threats to internal validity were also neglected in some of the research presented. Many of these threats involve the selection and maintenance of the research sample: maturation, pre-testing effects, and subject attrition. Some of the studies addressed these issues, but many did not. Research in education is frequently not as scientific as we would like. Frequently the researcher has no control over assignment of students or other sample-related issues. However, if educational research is to be effectively utilized and generalized to other populations, these items must be addressed in the reports of research being produced. Difficult though it may be, we, as educational researchers, must endeavor to create and uphold more rigorous standards for the conducting and reporting of educational research.

#### Standardization

As a research community, we must seek common ground. There is currently no comprehensive research agenda for service learning in grades K-12. Discussions abound, but results are few. Many foundations and government offices sponsor service learning in schools, but most do not produce any meaningful statistical analyses of the effectiveness of these programs. Most published research is either a) program description, b) "how-to" manuals, or c) descriptive statistics indicating levels of participation in service learning. All of these forms of report are valuable to the field. But if service learning is to be incorporated in any meaningful way across a nation of schools, advocates must produce more effective research-based studies that can guide states, boards, and administrators in their decisions concerning service. Simply knowing that many people are doing it and most people like it will no longer suffice.

#### Making meaning

It should again be noted that the effects and results reported in chapter four should not be viewed as "proof" of service learning's impact on students in grades five through twelve. Meta-analysis is a valuable tool, but there is much more research to be done before any firm conclusions can be drawn. Most of the studies that were available for analysis were dissertation studies. These are valuable and necessary contributions to the field. Yet, in order for more complete analyses to be conducted, and the results given greater credence, more of these studies must be submitted to the editorial and blind review processes that are the hallmarks of high-quality research.

#### Recommendations for Further Research

While the studies that were analyzed for this meta-analysis were extremely encouraging to advocates of service learning, more must be done. Several areas that bear further investigation are the:

- 1) Impact of service learning on specific reform initiatives
- 2) Impact of various types of service learning on the student outcomes (i.e., political service, environmental service, community service)
- 3) Impact of service learning on scores of high-stakes state tests.

### Conclusion

Service learning is an exciting innovation that obviously bears greater scrutiny. Preliminary results indicate evidence of a strengthening relationship between service learning and various academic and personal outcomes for students in middle and high schools. There is more work to be done. A comprehensive research agenda must be established nation-wide. Before America commits itself to another failed reform effort (i.e., open classrooms or phonics-only reading instruction), we must know 1) how service learning works best, 2) on whom does it have the most positive/negative impact, and 3) can it really improve both grades and citizenship in America's school children?

It is important that we address and study both academic and civic outcomes for service learning initiatives. As Yale University child psychiatrist James Comer has said, "In every interaction, you are either building community or destroying community." Schools have no choice about whether to shape citizenship and character. Every aspect of school organization and climate—from discipline policy to fundraising strategy—does so. The only choice is whether to do it well (Schaps, 1998). What kind of students are



America's schools creating? What curricular innovations can help us do so more intentionally? If service learning is the cure, the proof will lie in the research.

**APPENDIX A**  
**TABLES**

**Table 1.**  
**Formulae and Procedures for Converting Study Statistics to r.**

Statistic to be Converted	Formula for Transformation to r
t	$r = \frac{t}{\sqrt{t^2 + df}}$
F	$r = \sqrt{\frac{F}{F + df(e)}}$
Two-Way* ANOVA	$r = \sqrt{\frac{(Fa * dfa)}{(Fa * dfa) + (Fb * dfb) + Fab * dfab) + df(e)}}$
p	1) convert the 2 tailed p value into a 1 tailed p (i.e., p/2) 2) Look up the associated Z in a normal probability table.

\*Where Fa = Main Effect of Interest

dfa = df for A

Fb = Second Main Effect

dfb = df for B

Fab = Interaction effects

dfab = Interaction df

df (e) = error df

Material adapted from Schumacker and Akers (2001)

**Table 2.**

**Formulae For Computing Effect Size Estimates**

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$$r = \sqrt{\frac{Z^2}{N}}$$

This formula is useful when only the calculated p is available.

$$r = \frac{d}{d^2 + \sqrt{\frac{1}{pq}}}$$

Where:

p = the proportion of the total population that is in the first of the two groups being compared and

q = the proportion in the second of the two groups, or 1-p when p and q are equal

This formula is used when only Cohen's d is available (Cohen, 1977).

Adapted from Rosenthal (1991)

**Table 3**

**Foundations/Corporations Asked to Provide Data**

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National Youth Leadership Council

Fellows Program

Learn and Serve America

Learning Indeed

National Service Learning Exchange

AmeriCorps

National Service Learning Cooperative

United States Department of Education

Youth Entering Service (YES)

**Table 6**

**Complete List Of Outcomes For Outcomes In Qualitative Literature**

1. Empowerment
2. Self confidence/self esteem/self-sufficiency
3. Respect or appreciation for those being served
4. Improved ability to think critically/reflectively
5. Improved behavior/choosing to behave/lower discipline or referral rate
6. Improved academic achievement
7. Environmental awareness
8. Tolerance or acceptance of those not like me
9. Improved/increased social skills
10. Plan to serve in the future/expressed desire to serve more
11. Better working relationship with teachers/ more teacher-student understanding
12. Civic involvement/expressed enjoyment from civic involvement
13. Appreciation of the elderly (verbiage from the studies)
14. Learned to work cooperatively with others
15. Increased problem-solving skills
16. Better attitude toward school/ learning
17. Felt needed or appreciated
18. Made meaning of service experiences
19. Developed/ demonstrated leadership skills
20. Accepted or felt more responsibility
21. Intellectual development/ valued learning
22. Altruism/ saw the value of their service/ expanded world view
23. Improved attendance
24. Personal growth/ sense of accomplishment
25. Caring for or about others
26. Career interest/ development
27. Students learned to better appreciate what they had
28. Respect for others/ parents
29. Political efficacy

**Table 8**

**Complete List Of Qualities Emerging From Qualitative Studies**

1. "Culture of Service" existed/ was created
2. Avoided "charity"
3. Reflective practices present
4. Project reciprocity/ mutually beneficial
5. Promoted discussion/ dialogue between students and teachers
6. "New vocabulary" existed/ was created
7. Flexibility of facilitators/ allowed student control where appropriate
8. Good matches for service
9. Students prepared to recognize and solve problems and overcome obstacles
10. Reflection of journaling present/ was necessary
11. Recognition of students
12. Student leadership
13. Staff participation was voluntary or compensated and staff was highly trained
14. Student choice or assisted planning
15. Must help/did help students connect service with learning
16. Flexibility of group roles/ students working with groups
17. Service learning was embedded in the curriculum
18. Time for facilitator training/ highly trained facilitators
19. Developed specific academic skills
20. Dedicated and trained staff working at community service sites
21. Active learning/ hands on service projects/ direct involvement with served
22. Parental involvement/ support
23. Service must be carefully planned for individual nature of each group/school
24. Fostered students' belief in "the cause"
25. Accountability and evaluation of projects
26. Clearly defined and stated goals leading to defined outcomes
27. Service learning coordinator in school or on sites
28. Appropriate funding/ reorganization of curriculum money to support service learning
29. Administrative support
30. Positive environment/ "good press" for service learning
31. Students receive credit for participation
32. Communication between all involved parties
33. Service sites are close to schools/ adequate time for service

**APPENDIX B**  
**INCLUDED STUDIES**



**Table 12****Listing Of Studies Included In The Analyses**

<b>Author(s)</b>	<b>Year</b>	<b>Methodological Approach</b>	<b>Sample</b>
Brown, N.	1995	Quantitative/Qualitative	High School Girls
Crossman, M.	1989	Quantitative	High School Students
Davidson, M.	1995	Qualitative	Tenth-Graders
Dorman, A.	1997	Quantitative/Qualitative	Fifth-Graders
Furco, A.	1997	Quantitative/Qualitative	High School Students
Gross, M.	1991	Qualitative	Seventh – Twelfth Graders
Hamot, G.	1998	Qualitative	Fifth Grade Students
Healy, D.	1999	Quantitative	Middle School Students
Hecht, D & Fusco, D.	1996	Quantitative	Middle School Students
Jaffe, H.	1998	Quantitative/Qualitative	Eighth-Graders
Johnson, A. & Notah, D.	1999	Quantitative	Eighth-Graders
Kinsley, L.	1992	Qualitative	Middle School Students
Krystal, S.	1999	Qualitative	Middle School Students
Krug, J.	1991	Quantitative	High School Students
Kuest, A.	1997	Qualitative	Fifth-Graders
Limpert, L.	1997	Qualitative	Middle-High School Students
Luchs, K.	1981	Quantitative	High School Students

**Table 12 Continued**

<b>Author(s)</b>	<b>Year</b>	<b>Methodological Approach</b>	<b>Sample</b>
MacNeil, C & Krensky, B.	1996	Qualitative	High School Students
Mauricio, C.	1997	Quantitative/Qualitative	High School Girls
Moras, P.	1999	Qualitative	High School Students
O'Flanagan, W.	1996	Qualitative	Middle School Students
O'Neill, N.	2000	Qualitative	Seventh – Eighth Graders
Ostheim, P.	1995	Quantitative	Tenth – Twelfth Graders
Reynolds, E.	1998	Qualitative	Twelfth-Graders
Ridgell, C.E.	1995	Quantitative	Ninth-Graders
Wang, J., et al	1998	Quantitative	Fourth – Tenth Graders
Williams, R.	1993	Quantitative	High School Students

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