

**A COMPARATIVE STUDY OF COSTS FOR INCLUSIVE SPECIAL EDUCATION
IN THE COMMONWEALTH OF VIRGINIA**

by

Robert C. McCracken

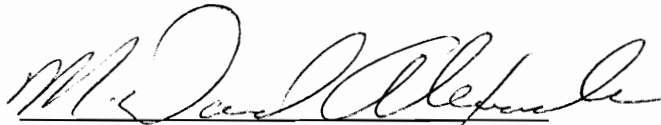
Dissertation submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

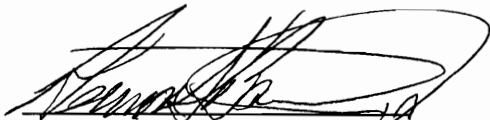
DOCTOR OF EDUCATION

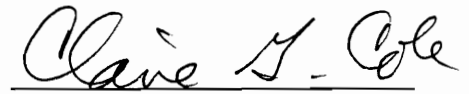
in

Educational Administration

APPROVED:

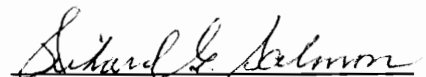

M. David Alexander, Chairman


Herman G. Bartlett, Jr.


Claire G. Cole


Jimmie C. Fortune


Philip R. Jones


Richard G. Salmon

March, 1994

Blacksburg, Virginia

**A COMPARATIVE STUDY OF COSTS FOR INCLUSIVE SPECIAL EDUCATION
IN THE COMMONWEALTH OF VIRGINIA**

by

Robert C. McCracken

Committee Chairman: M. David Alexander

Educational Administration

(ABSTRACT)

This study investigated costs of inclusive special education. Specifically, there were three areas of study: a) changes in special education costs in eight school divisions before and after implementing an inclusive special education program (Group A); b) changes in special education costs in two school divisions, one inclusive and one not, when using a more precise calculation (Larson method) of special education costs (Group B); and c) a comparison of total special education costs for all school divisions in the state (where data were reported) before and after a state project to encourage inclusive special education (Group C). All calculations compared 1987-88 costs (pre-inclusion) to 1990-91 costs (post-inclusion), after adjusting 1987-88 costs to 1990-91 values. The study found that in the eight inclusive school divisions, six of the eight reduced the percentage of special education costs when compared to total costs. When looking at

reported per pupil costs, only two of these eight divisions reported the cost of elementary special education at a lower level after inclusion. For secondary education, two different divisions of the eight reported the special education costs at a lower level after inclusion. None of the eight reported reduction in both secondary and elementary; half reported no reduction in either level after inclusion.

The case study data found that the inclusive school division had an increase in special education costs, while the non-inclusive school division had a reduction in special education costs during the same time period. Recalculation using the Larson method showed that special education costs were approximately one and one-half times those reported by standard reporting procedures. The study also produced a more accurate method for determining regular education costs for special education students by calculating time special education students spent in regular education, using individual student data to determine the percent of time reported in special education.

In all school divisions in Virginia reporting data, the study found a reduction of special education expenditures occurred during the three-year period, while the enrollment of special education increased during the same period of time.

DEDICATION

This work is dedicated to my wife, Pat, and my children, Becky, Seth, and our newest child Todd, who was born during the middle of this project. Thanks to them for understanding, supporting, and encouraging me to finish this task and for the many hours they had to endure my concentration away from them.

Also, to the staff of Giles County Schools thank you for providing organized and well documented data regarding case study inquiries and for understanding my interest in detailed reporting.

ACKNOWLEDGEMENTS

I wish to express sincere appreciation to my Chairman, Dr. David Alexander, for encouraging me to tackle an advanced degree and this project. Without his encouragement and support, this project would not have been started. Also sincere appreciation goes to Dr. Claire Cole and the Southwest Virginia Leadership Academy for support and technical assistance.

My gratitude also extends to my other committee members, Dr. Herman Bartlett, Dr. Jimmy Fortune, Dr. Philip Jones, and Dr. Dick Salmon. Their recommendations, contributions, understanding and resources were invaluable.

Finally, I must extend to the Giles County School Board appreciation for their support and encouragement. The Virginia Department of Education also receives my gratitude for their assistance in data retrieval. Dr. John McLaughlin, Paul Raskopf, John Mitchell, and Sara Staton were a valuable resource for this project. Additional thanks are extended to James S. Vaught and Wythe County Public Schools for their assistance in data collection.

TABLE OF CONTENTS

DEDICATION	iv
ACKNOWLEDGEMENTS	v
CHAPTER I	1
Introduction	1
Purpose of Study	5
Significance	7
Definition of Terms	7
Assumptions	10
Limitations	11
Data Sources	12
CHAPTER II	17
Review of Related Literature	17
How the Change to Inclusive Special Education Began	17
Segregation to Inclusion	23
The Move Toward Inclusion in Virginia	26
Policy and Position Statements Regarding Inclusion	27
Issues in Inclusion	30
Problems in Inclusive Education	33
Cost of Human Resources	36

The Costs of Regular Education	37
Costing-Out Special Education	38
CHAPTER III	40
Research Design	40
Research Questions	41
Research Hypotheses	42
The Population	43
Data Collection	46
Procedures for Data Analysis	54
CHAPTER IV	58
Results	58
Question 1	58
Question 2	63
Question 3	65
Question 4	67
Question 5	70
Question 6	71
CHAPTER V	74
Discussion	74
Conclusions	84
Recommendations for Further Study	85

Summary	86
REFERENCES	89
APPENDICES	99
A 1987-88 Expenditures by Disabilities by Eight <u>Group A</u> Participants	99
B 1990-91 Expenditures by Disabilities by Eight <u>Group A</u> Participants	102
C Expenditure Differences by Disability Reported by Eight <u>Group A</u> Participants 1987-88 to 1990-91	105
D Total Cost Expenditure Adjustments for 1987-88 & 1990-91	111
E Total Enrollment Adjustments/All Students for 1987-88 & 1990-91	113
F Total Enrollment Adjustments/Special Education Students for 1987-88 & 1990-91	115
G 1987-88 Case Study Data / Inclusive School Division Expenditures	117
H 1990-91 Case Study Data / Inclusive School Division Expenditures	120
I 1987-88 Case Study Data / Non-Inclusive School Division Expenditures	123

J	1990-91 Case Study Data / Non-Inclusive School	
	Division Expenditures	131
K	Per Pupil Expenditures Reported by Eight <u>Group A</u> -	
	Elementary - Regular and Special Education	134
L	Per Pupil Expenditures Reported by Eight <u>Group A</u> -	
	Secondary Regular and Special Education	136
M	Summary of Analysis	138
N	Highlights of Findings	140
O	Group A and State-Wide Enrollment Data	142
VITA		144

LIST OF FIGURES

FIGURE

1	Elementary Per Pupil Expenditures	61
2	Secondary Per Pupil Expenditures	62
3	Special Education Expenditures	63

LIST OF TABLES

TABLE

1 Cost of EMR, Moderate & Severe Special Education 66

2 Percent of Expenditures-Special Education: 1987-88 & 1990-71 . . 68

3 Expenditures of Eight Group A Participants 72

4 Special Education Percent of Time Spent in Regular Education . . . 78

CHAPTER I

INTRODUCTION

Inclusive education of students with disabilities -- teaching them with their non-disabled peers in regular education classrooms -- has become a prominent topic of discussion during the past several years (Raynes, Snell, and Sailor, 1991). Delivery models for special education have ranged from total inclusion without recognition of special needs through almost total segregation to today's confusion regarding mainstreaming, integration and inclusion of special education students in regular education classrooms.

U.S. News and World Report (Shapiro et al., 1993) recently focused negatively on the issue of separate education for special education students. This article continues the debate regarding the delivery of special education services. Hollywood recently released a documentary on inclusive education, Educating Peter (Goodwin & Warzburg, 1993), that won an Academy Award. This film shows the successes of teaching an elementary youngster with Down's Syndrome in a regular education classroom in the Montgomery County, Virginia, school division, an example of inclusive education. Reacting to the film, the Council for Exceptional Children (CEC) provided a news release (CEC, 1993b) which explains the team work and collaborative efforts necessary to make inclusive education a reality. Concern for premature implementation without proper and timely preparation permeated

statements issued by the CEC. The CEC also released a policy statement on implementing inclusive education (CEC, 1993a) following its 1993 delegate assembly, which met shortly after the film gained attention. The American Federation of Teachers (1993) issued a press release in advance of the showing of the film on HBO which expressed concerns similar to those contained in the CEC statement. The American Federation of Teachers (AFT), neither endorsing nor condemning the film, pointed out the positive outcomes while also very clearly explaining the background and resources necessary to make inclusion successful. However, more recently the current President of the American Federation of Teachers, Albert Shanker, has called for a moratorium on full inclusion ("Debate Flares", 1993). In December 1993, the Virginia Education Association (VEA) announced its views on inclusive education. Although not critical of inclusion, many of the same cautions and recommendations provided by CEC were found in the VEA position on inclusive education for special education students. (VEA, 1993).

In Virginia, a federal project, Virginia Statewide Systems Change Project, was initiated in 1987 to increase the number of students with moderate to severe disabilities to be educated with their age-appropriate peers through an inclusion model. The project also aimed to:

- improve the quality of education and social integration of students with moderate to severe disabilities;

- develop at least six exemplary integration sites for students with moderate to severe disabilities; and
- develop and disseminate recommendations for state and local policies and procedures to improve educational services for moderately and severely disabled students.

Generally the project was to support, encourage, and provide technical assistance to school divisions choosing to move toward inclusive education for moderately and severely disabled students who had formerly been in self-contained or modified self-contained educational settings. School divisions were notified of the opportunity to participate in this federal project through the Virginia State Superintendent of Public Instruction in the spring of 1988, fall of 1989, fall of 1990 and fall of 1991. Those school divisions selected through a competitive application process were required to make a formal commitment to developing integrated educational options for all students with severe disabilities. The Virginia Statewide Systems Change Project was developed in 1987 by the Virginia Department of Education in cooperation with George Mason University, the University of Virginia, and the Virginia Commonwealth University and funded by the Office of Special Education and Rehabilitation Programs of the U.S. Department of Education. Over the five-year period, twenty-two local education agencies (LEA's) were selected for participation. Many different levels of participation occurred throughout the

federal project's existence. However, the focus of this study is on eight school divisions that made original commitments to the project and remained active participants for at least the first three years. Those eight school divisions will be known as Group A in this study. Additionally, there were several different sites identified as exemplary sites, some others were identified as full Phase I sites, and the remaining LEA's participated in varying phases of the project. Eight of the Phase I LEA's stayed with the project as full participants throughout the three-year formal project designation; the others dropped out of the project after the first two years. This study examined data from the eight fully participating LEA's (Group A in this study).

These eight school divisions (Group A) completed the entire project, the Virginia Statewide Systems Change Project. The federal project impacted twenty-nine elementary schools, eleven middle or junior high schools, and seventeen high schools. It provided ongoing technical assistance for twenty-six elementary teachers, fifteen middle or junior high school teachers and twenty-two senior high school teachers. This federal project impacted twelve hundred students with moderate to severe disabilities through the 1991-92 school year.

Purpose of Study

The fiscal aspect of special education is one that continues to be evaluated, reported, and challenged (Jones, 1991). Special education must provide all identified students with disabilities a free appropriate public education, according to Public Law 101-476, Individuals with Disabilities Education Act, 1991 (IDEA), regardless of cost or least restrictive environment considerations. The least restrictive environment is the key to the inclusive special education.

The purpose of the study was to determine what, if any, changes in cost of special education occurred in selected school divisions and in the state as a whole, after inclusive special education was formally implemented in the state. Specifically, this study investigated:

1. Whether the reported per pupil cost of special education, elementary and secondary, in the eight Virginia Statewide Systems Change Project participant school divisions (Group A) showed a significant change when compared to regular education per pupil cost, elementary and secondary, over the three-year period using the current state method of reporting;
2. Whether the percent of special education cost, compared to total education cost, changed significantly in the Group A school divisions over a three-year period of time;

3. Through two case studies (Group B schools), whether there was a significant difference in change from 1987-88 to 1990-91 between the costs of inclusive special education and special education without an inclusive model for the same identified group of disabled students, when using a more precise method for determining special education costs;
4. Through two case studies (Group B schools), whether there was a significant difference in change from 1987-88 to 1990-91 in the percentage of special education cost compared to the total education budget, using standard reporting data;
5. Using the case study data from 1987-88 and 1990-91, for Group B schools, whether there was a significant change in the cost of inclusive special education when comparing standard state reporting data with a more precise method developed by Larson (1985); and
6. Whether statewide, the percentage of special education cost compared to total education cost changed significantly from 1987-88 (pre-inclusion) to 1990-91 (post-inclusion) (Group C).

Significance

This study analyzed data which are readily available to legislators, policy makers and the general public regarding the costs of special education. As the debate surrounding the benefits of inclusive education continues, it becomes important to have factual information available regarding the costs of such programming. This study determined if school divisions implementing inclusive education practices for moderately and severely disabled students reported increased costs as documented in mandated reporting systems and, in two instances, using a more precise method of determining cost.

Definition of Terms

For the purpose of this study, the following terms are used.

Children with Disabilities: Children who are identified by the following disabilities: Autism, deaf, deaf-blind, developmental delay, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, serious emotional disturbance, severe and profound disability, specific learning disability, speech or language impairment, traumatic brain injury, or visual impairment (Spagnolo, 1993d).

Excess Costs: The costs for special education that are over and above the normal costs of educating non-disabled students (34 CFR 300.184, 1993b).

Full Inclusion: When a child's primary placement is in the regular education class, and the child has no additional assignment to any special class for disabled children (Board of Education, Sacramento City School District v. Holland, 786 F. Supp. 874 (E.D. Cal 1992)).

Inclusive education: The education of moderately and severely disabled public school youngsters who are being educated with their age appropriate peers in a more integrated environment than the traditional self-contained special education program.

Individualized Educational Program (IEP): A document that is prepared under the federal requirements of special education, requiring involvement of parents, teachers, and a school administrator who is capable of obligating school division resources (34 CFR 300.340, 1993c).

Least Restrictive Environment (LRE): A requirement of the Individuals with Disabilities Education Act which calls for students with disabilities to be educated, to the maximum extent possible, with students without disabilities (34 CFR 300.350, 1993d).

Local Education Agency (LEA): The term used synonymously for the school divisions or school districts in Virginia.

Mainstreaming: The education which students with disabilities receive with their non-disabled peers (Mavis v. Board of Education, South Lewis Central School District, 1993 WL 532599 [N.D.N.Y.]).

Moderately and Severely Disabled Students: Students having moderate to profound mental retardation or severe multiple disabilities, and those classified as deaf-blind or autistic, if the student also has moderate to severe mental retardation (Janney, 1992).

Per student expenditures: Expenditures prepared for submission in the special education annual plan.

Published data: Data which are available from either limited distribution or currently calculated information which is retrievable from all Virginia school divisions.

Regular Education Initiative (REI): The movement to merge general and special education into one system of education which meets the various needs of all students (Kauffman & Pullen, 1989).

Reported Expenditures: Categorical expenditures which must be reported by all Virginia school divisions via the annual report process.

Self-Contained: Special education programs which are delivered in a more restrictive environment, with at least fifty percent of students' time spent in special education, generally provided by a specialized teacher in a specific special education category (Spagnolo, 1993e).

Virginia Statewide Systems Change Project: A federally funded project in Virginia which existed from 1987-1992 and concentrated on providing technical assistance for inclusive education for moderately and severely disabled students (Janney & Beer, 1991).

Assumptions

The procedures used by the Virginia Department of Education provide state-wide data on special education services, costs, and enrollment. An assumption is that these data do not accurately represent the costs of special education. Although these data are reported on the same report form for all school divisions, however, the way in which school divisions categorize expenditures for reporting varies. An additional assumption is that these categories may not accurately reflect expenditures. For example, a school division may have spent one thousand dollars for an in-service program that dealt with the topic of inclusive special education for regular education teachers. The business manager in one division may charge this expense to the category named "Improvement of Instruction: Elementary and Secondary." Another business manager may charge this same expenditure to the category named "Improvement of Instruction: Elementary, Secondary, Elementary Special Education, and Secondary Special Education."

Additionally, according to state procedures, the enrollment data used for calculating the average special education cost are one year behind the period of time for which expenditures are reported (Chaikind, Danielson, & Brauen, 1993). Likewise, inconsistencies exist with the calculation of revenue for special education (Salmon, 1989). The assumption in this study is that, while the time period is inaccurate for actual cost reporting, the inaccuracy is constant across school divisions.

Limitations

The Group A school divisions in this study were limited to those eight divisions in Virginia who were full participants in the Virginia Statewide Systems Change Project between the years of 1988 to 1991. Data may or may not be generalizable to other divisions which did not participate fully in the state project. Inclusive education was limited to students identified as having moderate to profound mental retardation or severe multiple disabilities, and those classified as deaf-blind or autistic, if the student also had moderate to severe mental retardation. The only exception was in the Group B school divisions, where data from the EMR program were included in their reported figures.

In addition to looking specifically at Virginia cost data, the literature review included general information on inclusive education and special

education costs. Although the rationale for inclusive education was addressed through the related literature review, this study did not focus on the effectiveness issue, but rather provides data about the costs of inclusive education.

Data Sources

There are four sources that provided data about the cost of education for this study.

1. **Facing Up-23** - This corporate-style annual report is published by the Virginia Department of Education, (Commonwealth of Virginia, 1989a) annually and contains fiscal information and other general statistics about school divisions.
2. **Special Education Annual Plan** (Spagnolo, 1993a) - Each state, in order to receive federal funds, must submit a special education plan to the Secretary of Education. In turn, each local school division must develop a local plan which details methods and procedures as to how they will meet the requirements of the state's plan. The plan also requires a calculation of the average cost per student receiving an elementary or secondary special education and the same calculation per student for an elementary and secondary regular education student. The

development of these per pupil costs are a part of this plan and are called the excess cost calculation referred to in the Code of Federal Regulations (34 CFR 300.184).

3. **Superintendent's Annual Report** - The Virginia Department of Education (Spagnolo, 1993b) also requires additional data in this report which lists all expenditures by student disability, as well as other types of educational expenditures, according to state categories. However, this report does not include a per pupil calculation for special education.
4. **Internal records of school divisions** - These records include budget reports, staff listings, employee contract information and financial data routinely maintained by school divisions and school boards.

Special education is perceived by many as a costly program. Data collected by state and federal agencies show that the costs of educating any identified special education student exceed those for a regular education student. Enrollment data used to calculate expenditures are one year older than actual data used in preparing the special education annual plan (item number two above). Therefore, a current fiscal picture does not exist in this annual plan. Financial data lag current pupil enrollment by one year in that report. Thus, financial data on the cost of special education are somewhat

imprecise because data neither for special education nor for regular education cost per pupil are broken down by specific category (e.g. disability, grade) in the annual plan (item number two above).

This study determined special education costs in three areas:

- A. Changes in special education costs for special education in eight school divisions before and after implementing an inclusive special education program, hereafter known as **Group A**;
- B. Changes in special education costs in two school divisions, one inclusive and one not, using a more precise model for calculation (Larson method) of special education costs, known hereafter as **Group B**; and
- C. A comparison of total special education costs for all school divisions in the state (where data were reported) before and after a state project to encourage inclusive special education, known hereafter as **Group C**.

All calculations compared 1987-88 costs (pre-inclusion) to 1990-91 costs (post-inclusion).

The three Groups identified and studied in this study are:

1. **Group A** - Eight school divisions who were participants in the state inclusion project, using data reported in required state reports, were the comparisons examined by this study.

2. **Group B** - Two school divisions were selected, one which received inclusive special education training and one that had not received training. They were identified by the Virginia Department of Education (DOE) as comparable school divisions with like characteristics in a project called Educational Performance Recognition (EPR) (Spagnolo, 1990). In the EPR study, these two school divisions in the Group B comparison in this study had been grouped with thirteen others in the spring of 1989. Comparable variables identified at the 1989 grouping were percent of college graduates, percent of population in the upper income level, average daily membership (ADM) of the school division, percent of first grade students in the lowest quartile on ability tests, percent of students eligible for free or reduced price lunch, percent of change in the ADM from 1984-85 to 1988-89, population density per square mile, and local ability to pay using property, sales and income tax bases. The special education cost of these two school divisions were compared over a three year period using the Larson (1985) method of calculation, as well as data in the required state financial reports.
3. **Group C** - All school divisions in Virginia who submitted required special education expenditure information to the Virginia Department

of Education for the years 1987-88 and 1990-91, comprised this group.

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter will review literature related to the historical development of inclusive education, the Virginia movement to inclusive education and the methods of calculating special education costs related to inclusive special education.

How the Change to Inclusive Special Education Began

As early as 1823 public education efforts existed to provide segregated facilities for students with disabilities (Dodson, 1987). Abraham Lincoln has been credited as the first person to involve the federal government in special education (Weintraub & Ballard, 1982) by approving a bill that created Gallaudet College. The impetus to include all special education students into public education was much later, federal legislation, Public Law 94-142, 1975 (EHA), that requires all students identified as disabled to be provided free appropriate public education in the least restrictive environment. Prior to this legislation, efforts to bring special education programs to local districts were the result of many individual school teachers, principals, and superintendents. This effort occurred

without the coordination of services on a school, district or regional level and generally were the result of informal arrangements (Dodson, 1987).

The term **inclusion** cannot be found in either Public Law 94-142, 1975 (EHA) or the accompanying regulations, nor is it found in the current Public Law 101-476, 1991, or regulations. A perception exists that revisions to EHA in 1991 required inclusion as a mandated provision. In actuality, Public Law 101-476, Individuals with Disabilities Education Act, 1991 (IDEA), uses the same basic language regarding the least restrictive environment as did Public Law 94-142. The actual continuum of services, which defines those more restrictive environments, is found in the Code of Federal Regulations (1992). Case law illustrates the interpretation of **mainstreaming** to be synonymous with **integration** and **inclusion**. Specifically in Mavis v. Board of Education, South Lewis Central School District, 1993 WL 532599 (N.D.N.Y.), the court said "integrating children with disabilities in regular classrooms is commonly known as mainstreaming". In this case the court also acknowledged that **mainstreaming** was no longer the preferred term used by educators, and that the word **inclusion** had become the preferred term in education circles. However, the court also went on to say that even though the terms were used interchangeably, it would still use the word **mainstreaming**. Another case in which inclusion became an issue was Oberti v. Board of Education of the Borough of Clementon School District, et al.,

801 F. Supp. 1392 (D. NJ 1992), where parents insisted that their child with Down's Syndrome be provided an education in a regular school program. In this case, the school system removed the child from both the regular education program and his neighborhood school, placing him in an out-of-district special education program. The court rejected this placement and required the IEP team to develop a more appropriate program in the least restrictive environment. The court discussed the least restrictive environment using terminology associated with inclusive education. Although the court stopped short of requiring inclusion, it discussed very specifically the educational and non-educational benefits of including children with disabilities in the regular classroom and in the neighborhood school. Another case which dealt with the issue of inclusion was Board of Education, Sacramento City School District v. Holland, 786 F. Supp. 874 (E.D. Cal 1992). This was another instance where the placement of a child with a disability was proposed in a special education classroom and the parents insisted on a regular classroom placement. The court in the case also dealt with the issue of **full-inclusion**. It actually defined **full-inclusion** as by accepting the definition provided by the expert witness testimony of Dr. Wayne Sailor. Dr. Sailor's definition was the child has no additional assignment to any special class for disabled children. The court found that the appropriate placement for this child was in the regular education

classroom. In reviewing the facts of the case, the court placed the burden of proof on the school district regarding the benefit or lack of benefit that the child would receive from special education.

Courts have looked at four specific factors when attempting to answer the basic question whether a child is receiving a free appropriate public education in the least restrictive environment. Those factors are; (1) the educational benefits available to the child in a regular classroom, supplemented with appropriate aids and services, as compared to the educational benefits of a special education classroom; (2) the non-academic benefits to the disabled child of interaction with nondisabled children; (3) the effect of the presence of the disabled child on the teacher and other children in the regular classroom; and (4) the costs of supplementary aids and services necessary to mainstream the disabled child in a regular classroom setting. The court ruled in Board of Education, Sacramento City School District v. Holland, (786 F. Supp. 874 (E.D. Cal 1992) that the school district failed to provide evidence to satisfactorily show that free appropriate public education was not available in the regular classroom. In Mavis v. Board of Education, South Lewis Central School District, 1993 WL 532599 (N.D.N.Y.), the court actually criticized the school district for failing to give consideration to IDEA's mainstreaming requirement and said the school district only provided "lip service" to the requirement. The current thinking,

as evidenced in IDEA (1991), is that students should be removed from the regular education environment only when the nature and severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily. Board of Education, Sacramento City School District v. Holland, 786 F. Supp. 874 (E.D.Cal 1992) reinforces the decision-making process regarding the placement of students with disabilities by emphasizing that these decisions must be based on each individual child and must personalize instruction. This personalized instruction must be provided with sufficient support services so the child will benefit from instruction. Any placement decision which is made and violates this individual and personalized approach, whether full-inclusion or self-contained special education, is in conflict with IDEA (1991). This concept can be found in court cases which both propose and oppose inclusive education. For example, although Oberti v. Board of Education of the Borough of Clementon School District, et al., 801 F. Supp. 1392 (D. NJ 1992) has been cited as a case where a student with disabilities was placed in a regular classroom setting instead of a special education classroom, but the issue was not inclusion, but rather the individual student's needs and the school districts compliance with procedures. French v. Omaha Public Schools, 766 F. Supp. 765 (D. NE 1991) illustrates the same point regarding the individualization needed to determine the proper placement. In this case

the court supported the placement of a student in a school for the deaf, because after weighing all evidence, the benefit to the child was greatest at a residential school. In Visco v. School District of Pittsburgh, et al., 684 F. Supp. 1310 (W.D. PA, April 28, 1988), a similar analysis was provided by the court for a family with two deaf children. The children were attending a school for the deaf and the school district felt they would receive a greater benefit from public school and mainstreaming. However, the court looked closely at the family and determined since the children were in a deaf home and that a majority of their life was surrounded by a deaf environment, these two students' individual needs could be met more appropriately by a school that served a deaf population. The court was very specific with its interpretation of EHA and reinforced the concept that the rules applied to children covered under EHA were to be applied individually to each child's case. An additional case which reinforces the concept of individual needs and shows that inclusion is not a mandate is Daniel R. R. v. State Board of Education, et. al., 874 F. 2d 1036 (5th Cir. 1989). In this case the court upheld the change of placement of a student with disabilities to a more restrictive environment. The evidence presented to the court showed that proper procedure was followed, the school district sufficiently provided a continuum of services for students with disabilities and the amount of attention required by his regular classroom teacher was a disruption to the

other children. The court, in this case, also reinforced the importance of individualization by saying that fact-specific inquiries must examine the nature and severity of a child's disability, his or her needs and abilities, and the school's response to a student with disabilities. Thus, court cases neither require nor reject inclusion but rather insist on an individualized program best suited to each disabled child's needs.

Segregation to Inclusion

The idea of changing to full inclusion from a segregated approach developed through the efforts of parents, educators, and federal bureaucrats (Schattman & Benay, 1992). One of the early reform efforts began with Madeleine Will, Assistant Secretary for the U.S. Office of Special Education and Rehabilitative Services. Will's call for radical reform for both regular and special education started in the early 1980's. This reform movement has become known as the "regular education initiative" (REI) (Kauffman & Pullen, 1989). The REI criticizes special education and regular education because:

1. Too many special education students, who are not seriously disabled, are removed from regular education.
2. Labeling has stigmatized special education students by removing them from their non-disabled peers, resulting in failure to meet student's individual needs.

3. Special education has created a dual and discriminatory system which leaves out children who need services but do not qualify for special education.
4. Services for special education students are fragmented, uncoordinated, confusing and inefficient.
5. Regular education has shirked its responsibility for dealing with difficult students.
6. Regular educators could teach students with disabilities if given the proper assistance and consultation from special educators.
7. One system should be developed that is free from costly identification methods and procedures.

REI has been criticized because it has been seen as a part of the Reagan-Bush education policy which emphasized combining programs and reducing federal funding, including special education funds (Kauffman & Pullen, 1989).

The movement away from segregated special education has been recommended to school divisions using terminology such as **integration** and **inclusion**. **Integration** as defined by Webster's **New World Dictionary** (1993) is to make whole or complete by adding or bringing together parts. Integration can be viewed as the beginning of inclusive education. Feldman (1991) describes a process which begins with integration and culminates in

a phase-in plan which includes all students in a general education program at all levels. This general program would eliminate labels such as **special**, **vocational**, and **general education**. Schools that operate without labels, whether those labels be grade level, disability areas, or specialized vocational programs, (Biklen, 1992) provide plenty of evidence of the importance of all educators in the role of teaching special needs students. However, Kauffman & Pullen (1989) believe that labels are a necessity in special education because some students have special needs and some do not.

Regardless of the term used - **mainstreaming**, **integration**, or **inclusion** - one concept recurs throughout the literature: **collaboration** is needed between special education and general education. It is supported by both opponents and proponents of each programming alternative listed above (Kauffman & Hallahan, 1990). Nelson et. al. (1991) also support collaboration and advocate the idea of a more inclusive perspective, including early intervention and special education for at-risk students.

The idea of inclusion is not only an American initiative. Porter and Richler (1991) discuss the Canadian perspective of providing special education and related services to children in their regular classrooms. They also address the role of parents in this change process, not only as participants in their child's education, but in their role as citizens and decision-makers in national issues.

The Move Toward Inclusion in Virginia

A federally funded project in Virginia encouraged the change to inclusive special education for a selected group of youngsters, those classified as having moderate to profound mental retardation or severe multiple disabilities, and those classified as deaf-blind or autistic, if the student also had moderate to severe mental retardation. The rationale for using an inclusion model in this federal project was to promote change and to reduce the time children with disabilities spent segregated from other students their age. Designated The Virginia Statewide Systems Change Project, a task force of representatives from interested school divisions first reviewed the overall status of special education. However, the Virginia project did not address the issue of costs associated with inclusive special education. Inclusion activities in Virginia were documented and ranged from very small accomplishments to major achievements in school divisions from 1987 through 1992 (Janney, 1992). In the 1991 Janney & Beer project successful strategies were reported by Giles and Hanover Counties. All inclusion programs emphasized the need for collaboration and full staff involvement in planning, implementation and evaluation. None, however, dealt with the issue of the cost of inclusive special education. Although the topic of **integration** appears synonymously with **inclusion** (York & Vandercook, 1989), **inclusion** has been the preferred term in the delivery of

special education and related services in Virginia. As early as 1989, Reynolds suggested that a move to inclusive education is likely to eliminate specialized residential and day schools. Evidence supporting Reynolds' (1989) prediction can be seen in Virginia in the Comprehensive Services Act, 2.1-753 (Code of Virginia, 1992) and its mandated implementation of family assessment teams required to collaborate on services in the community for students with severe disabilities who might otherwise have been placed in a more restrictive environment.

Policy and Position Statements Regarding Inclusion

The Goodwin & Warzburg (1993) film Educating Peter brought national attention, beyond the education community, to the issue of inclusive special education when it won an Academy Award. Although this attention was seen as a victory for students with disabilities, caution has been advised by several organizations regarding the need for collaboration and team work necessary to accomplish the goal of inclusive special education. Also this national attention has caused a number of professional associations to develop either policy or position statements about the concept of inclusive special education. The Council for Exceptional Children (CEC) has developed a policy statement that neither endorses or condemns inclusion. This statement addresses three major areas that need to be considered regarding

the positive outcome of inclusive education practices: the individual schools where students with disabilities are enrolled, the entire school district, and the educational community which includes professional organizations and associations (CEC, 1993b). The President of the AFT has called for a moratorium on full inclusion ("Debate Flares", 1993), which has become part of the recent position adopted by the AFT (Sklaroff, 1994). This position has been developed in response to its members who believe inclusive special education is being used as a cost-saving technique and is being implemented without proper training. This belief is supported by critics of the regular education initiative (REI) (Kauffman & Pullen, 1989). The Council for Learning Disabilities (CLD) developed a position on "full inclusion" in April of 1993. Its Board of Directors issued a position statement which is critical of the term "full inclusion" and takes a position that opposes "full inclusion", especially when it is used indiscriminately as a method for full-time placement of special education students in regular education. However, the CLD does endorse school reform efforts that enhance the education of all students, including inclusion, when it is deemed appropriate by an IEP committee ("Council Position Statement," 1993). In December 1993, the Virginia Education Association (VEA) also announced its neutral position on inclusive education. Its position neither supported nor opposed inclusion. The VEA issued many of the same cautions previously noted by the CEC and

others. Planning, proper resources, and individual student needs are major themes in the position approved by the Board of Directors (VEA, 1993). The VEA position is very similar to that taken by the National Education Association (NEA) which has developed a number of publications outlining its position, a free appropriate public education for all students with disabilities in the least restrictive environment. It stresses the importance of necessary procedures and safeguards to determine the least restrictive environment and opposes any program or model which may cause those procedures to be absent or insufficient (NEA, 1993).

Numerous organizations of special and regular educators have issued statements on inclusive special education. Each strongly urges collaboration between regular education and special education prior to moving forward with any change. Two organizations that endorse the concept of full inclusion are The ARC, a national organization on mental retardation, (formerly known as The Association for Retarded Citizens of the United States) and The Association For Persons With Severe Handicaps (TASH). The ARC has established a goal of full inclusion for students with severe disabilities by the year 2000 and an interim goal of fifty percent by the year 1995. TASH's resolution on inclusive education states a belief that all students benefit from full inclusion and calls upon local, state, provincial,

regional and federal governments to develop and maintain educational opportunities that are fully inclusive and ultimately effective for all students.

Most organizations have stated positions or views which support all alternatives available to provide services to students with disabilities in the least restrictive environment. The only exception is the AFT which has adopted the position that a moratorium be issued regarding the expansion of inclusion. None of the positions or views expressed by the organizations addresses the issue of calculating the costs of collaboration or planning, much less the cost of implementing a full inclusion program.

Issues in Inclusion

An expansion to inclusive education as a vehicle of program delivery creates a new challenge for educating all teachers, both pre-service and in-service, who do not understand the behaviors and actions of students with disabilities (Hornbeck, 1992). Competitive classrooms where children must always prove themselves to their peers and to supervising adults pose a problem in the inclusive model of special education. Classrooms that create cooperative and team approach settings are prime sites for implementation of inclusive techniques (Sapon-Shevin, 1990). In selecting classrooms where mainstreaming or integration will occur, teachers must want to be a part of the process, not be told they must participate. Research suggests that these

willing teachers can be found by looking at their expectations and concerns. However, many times a considerable amount of finesse is needed to build the necessary relations with teachers before suggesting the placement of students in their regular education classroom (Wong, Kauffman, & Lloyd, 1991). Prior to implementation of inclusive special education, training must occur.

Training of new teachers, retraining of both regular and special education teachers, and collaborating with all educators is recommended by all those who have provided guidance in the area of inclusive education for students with disabilities. Simply participating in college classes on the characteristics of disabling conditions is not enough. The court has recently affirmed the issue of teacher training as it relates to inclusive education. In Mavis v. Board of Education, South Lewis Central School District, 1993 WL 532599 (N.D.N.Y.), the court criticized the school district for not providing training to teachers so they were better able to deal with the needs of a disabled child. In this case the court required the child to be served in a regular education setting because the district had not fulfilled its obligations to meet the child's needs in the regular education setting, before placing her in a special education setting. The district's failure to meet its obligations in this incident was due partially to the failure of the district to provide training to its teachers. This case involved a child identified as a student with mild

mental retardation. All educators, special and regular, beginning and experienced, must be prepared through preservice and continual inservice to enter the new school environment where all students are expected to learn together (Ayres, 1992). IDEA (1991) and the Code of Federal Regulations (1993a) requires a Comprehensive System of Personnel Development (CSPD) for all school divisions. This training is not limited to special educators, but requires a system for the continuing education for public school personnel including regular education teachers, administrators and related services personnel. A training film titled Regular Lives (Goodwin, T. C., & Warzburg, C., 1988) depicts a New York elementary school with inclusive education. The message in this film is very similar to the successes shown in the documentary Educating Peter, that children with disabilities can learn in the regular classroom. This video has become part of several training programs, including a Virginia Department of Education training program, Improving Instructional Leadership in Special Education: A Challenge for Principals (Commonwealth of Virginia, 1989b). Problems found in a Bolton Institute study discuss the need for the preparation of public school personnel: classroom teacher, principal, and special educator as well as the needs at the post secondary level or further education level (Whittaker, 1991). No estimate of cost of training and retraining teachers has been presented in the literature.

Labeling students not only segregates the student, but also makes the special education teacher the sole professional owner of the problems associated with the student's disability. Segregation is one of three major impediments identified by Whittaker (1991) as he looked at the integration of students with special needs into Further Education (FE) at the Bolton Institute. Another impediment found in this study was the identification with discrete groups, such as students coming from a local special school or an adult special education center. The third impediment Whittaker described as "care". While sincere caring for individuals encompasses desire to protect them from the dangers of the non-disabled world, it also prevents the student with disabilities from learning and benefiting from opportunities in the wider world.

Problems in Inclusive Education

An educationally successful inclusive program may also present unique problems for the parents and students with disabilities, as evidenced by one youngster with disabilities. In Concord, New Hampshire (Casanave, 1991), the attitudes of community members affected the social environment of a special education student because other parents objected to the placement of the boy with a disability in the regular education classroom. These problems went beyond the school and classroom and became issues

of concern in the community, affecting the lives of the parents as well as their son. Other parents did not want the benefit of inclusive education for the student with a disability to take away from opportunities for their non-disabled children. These problems point out that the change of philosophy must go beyond the school house into the entire community, as evidenced by CEC's policy implications (CEC, 1993a). In another attempt to integrate special education students into regular education classes, a Michigan school district developed and implemented an inclusive community model. Beyond addressing just the school issue, this district developed its plan to address social integration, community-based training, extracurricular opportunities, and home-school partnerships (Conn, 1992). However, if students leave their own neighborhood schools simply to be in an inclusive setting, other problems may occur. When a student returns to his neighborhood where students have not been exposed to inclusive education, he may remain excluded in the community, since all inclusive contacts were established out of the neighborhood (Blackman, 1992). The rural community also creates a unique set of challenges for inclusive special education. Capper & Larkin (1992) address these unique challenges and suggest that there are limitations and legitimate arguments that exist for both inclusive and exclusive special education in the rural environment. Jenkins & Pious (1991)

also argue that integration may be a preferred condition, but not the only possibility of success for students with disabilities.

The National Center on Educational Outcomes (NCEO) (McGrew, Thurlow, Shriner, & Spiegel, 1992) reports that American reforms in public education have raised expectations and developed "world class" standards. The NCEO has attempted to review outcomes and measures. As special education students become more imbedded in the regular education process through inclusive education, identification of data specific to special education becomes more difficult. For example, as inclusion models are implemented, it becomes more and more difficult to find data to support the educational gains or losses attributed to the change toward inclusive education. It is often not clear, for example, whether or not special education students have been included in state-wide achievement testing programs or in national data regarding achievement testing programs, but it is estimated that forty to fifty percent of students with disabilities are excluded from prominent national data reporting systems (McGrew, Thurlow, Shriner, & Spiegel, 1992). Therefore, exclusion practices make it difficult to assess the effect of educational reform for both students with disabilities in inclusive or exclusive settings, and for teachers that are working with these students. Another national reform movement, the regular education initiative (REI), reports the same difficulty in assessing successes. REI advocates

typically point to model programs as a way of proving successes when research findings are not available to support their claims (Kauffman & Pullen, 1989).

Sindelar et. al. (1992) address the exclusion issue for the America 2000 plan and for goals developed from this reform initiative. For example, indicators of achievement (state-wide assessment programs) and school completion (graduation with a diploma may or may not include IEP completers) are confounded by whether or not special education students are counted in these data. This illustrates the difficulty of determining accurate data on special education.

Just as achievement data are unclear in inclusive education, so are costs of educating special education students. When students with disabilities are taught with regular education students, financial data specific to special education students are harder to determine.

Cost of Human Resources

The problem of determining cost for human resources in any endeavor is certainly not a new issue. Over twenty years ago, Cohn (1972) lamented the lack of a comprehensive published document which would collect data, yet be simple enough for the participants of a seminar to use to develop a mathematical and statistical model for cost determination of

human resources. However, he discovered that such a formula for calculating cost could not easily be established. From Cohn's simplistic statement to the complex data of the Fifteenth Annual Report to Congress on the Implementation of The Individuals with Disabilities Education Act - Volume I (U.S. Department of Education, 1993), the confusion in measuring government and human resource cost has multiplied as the procedure has become more complex.

The Costs of Regular Education

The underlying statement in the literature on special education implies a high degree of difficulty in measuring precisely the costs of special education. The literature reflects that special education costs are extremely complex and vary a great deal, depending on a state's reaction to federal monitoring. Although special education funding and cost accounting are complex, the calculation of regular education, when viewed as closely as the study implies for special education, is found to be just as complex. In many cases, the cost of regular education must first be determined before attempting to establish costs for special education. An example of a confusing factor is the length of the school day and the school year. The length of the school day and school year affect the cost calculation in several ways, particularly when looking at related services that may be

contracted on a daily or hourly basis. On a national basis the length of the school day and year can vary significantly. The preschool level average was 3.33 hours; the elementary level was 5.62; and the secondary level was 5.95 (Kakalik, Furry, Thomas, and Carney, 1981). When calculating costs on a national level, the length of the year and day affect the cost of special education. In Virginia the current requirement for the school day is 5.5 hours at all levels. However, there are exceptions and waivers (Code of Virginia, 1988) which create different lengths of both days per year and hours per day in each Virginia school division. Many other such variations in school expenditures exist. Neither cost nor even a dependable method of calculating inclusive special education cost is available, thus the need for this study.

Costing-Out Special Education

Several studies have undertaken the venture for accurate special education costs. Larson (1985), Kienas (1986), Slobojan (1986) and the General Assembly of Virginia have each developed methods for establishing special education costs. The Joint Legislative Audit and Review Commission (JLARC) of the Virginia General Assembly undertook the task of costing-out special education in 1986 and in 1988, which resulted in General Assembly action to provide a change in revenue for Virginia school divisions

(Commonwealth of Virginia, 1988). These studies, along with national models of cost determination (Rossmiller, Hale, & Frohreich, 1970), have furthered the debate regarding the methodology used for determining such costs. This debate generally focuses on three methods of determining costs: (a) per pupil costs; (b) common or shared costs; and (c) costing out component costs (Chambers, J. G. & Hartman, W., 1981).

One portion of the Virginia reporting mechanism is the required federal excess cost calculation, yet another method needed to determine the cost of special education (Spagnolo, 1993a). This process is one that produces the excess cost figure which assures the federal government that federal funds are being used only to provide for costs beyond the regular education cost. The process yields an annual per pupil cost for each special education elementary student and special education secondary student. It also develops a per pupil cost for elementary and secondary regular education students. The requirement has its foundation in the IDEA (1991).

The related literature on programmatic issues regarding inclusive special education is plentiful. A recent ERIC search produced over two hundred documents written from 1982 until 1992. Also the number of reports and opinions on methods to calculate the costs of special education is voluminous, but none of these ties the concept of inclusion with fiscal realities.

CHAPTER III

METHOD

Research Design

This study collected data relative to the cost of special education in the Commonwealth of Virginia, specifically as reported for school divisions that have moved into inclusive special education for moderately and severely disabled students. It investigated three different areas: a) changes in special education costs in eight school divisions before and after implementing an inclusive special education program; b) changes in special education costs in two school divisions, one inclusive and one not, when using a more precise calculation (Larson method) of special education costs; and c) a comparison of total special education costs for all school divisions in the state (where data were reported) before and after a state project to encourage inclusive special education. All calculations compared 1987-88 costs (pre-inclusion) to 1990-91 costs (post-inclusion).

Research Questions

The study answered six research questions:

Group A

1. Did the reported per pupil cost of special education, elementary and secondary, in the eight Group A inclusive school divisions show a significant change when compared to regular education per pupil cost, elementary and secondary, over the three-year (pre- and post inclusion) period using the current state method of reporting?
2. Did the special education costs, when compared to total education costs, change significantly in the eight Group A inclusive school divisions from 1987-88 to 1990-91?

Group B

3. Through two case studies, Group B schools, is there a significant difference in change from 1987-88 to 1990-91 between the costs of inclusive special education and special education without an inclusive model for the same identified group of disabled students, when using a more precise method for determining special education costs?
4. Through two case studies, Group B schools, is there a significant difference in change from 1987-88 to 1990-91

between the percentage of special education costs compared to the total education budget, using state data?

5. Through case study data, is there a significant change in the cost of inclusive special education when comparing standard state reporting data with a more precise method?

Group C

6. Statewide, Group C, have the percentage of special education costs compared to total education costs changed significantly from 1987-88 to 1990-91?

Research Hypotheses

1. There is no significant difference in the reported per pupil cost of special education, elementary and secondary, in the eight Group A inclusive school divisions when compared to regular education per pupil cost, elementary and secondary, over the three-year period, 1987-88 to 1990-91, using the current state method of reporting.
2. There is no significant change in the percent of special education cost compared to total education cost in the eight Group A inclusive school divisions over a three-year period of time.

3. There is no significant difference in change from 1987-88 to 1990-91 between the costs of inclusive special education and special education without an inclusive model for the same identified group of disabled students, when using a more precise method for determining special education costs in two school divisions (Group B).
4. There is no significant difference in change from 1987-88 to 1990-91 between the percentage of special education cost compared to the total education budget in Group B school divisions, using standard reporting data.
5. There is no significant change in the cost of inclusive special education (Group B school divisions) when comparing standard state reporting data with a more precise method.
6. There is no significant difference in the percentage of special education cost compared to total education cost from 1987-88 to 1990-91 in the Group C schools.

The Population

The population is all school divisions in Virginia who provided requested special education expenditure data for the years 1987-88 and 1990-91 to the Virginia Department of Education. Two sample groups were

also identified. Group A, which consisted of eight school divisions that were full participants in the Virginia Statewide Systems Change Project, and had inclusion models for at least 1987-88 to 1990-91. Group B consisted of two school divisions, one which participated fully in the federally-funded training in Virginia for inclusion and one which did not.

Group A - Selected school divisions were identified for participation in a state-wide systems change project for inclusive special education by a competitive application process. The eight school divisions completing the project for inclusive special education comprise the population for the first set of comparisons in this study, the cost of special education before and after inclusion. Three of the school divisions were rural; one, suburban; and four, city systems. Student populations in the school divisions ranged from 876 to 34,064 (1990-91 figures). Mean pupil expenditures for both regular education and special education are contained in Figures 1 & 2 in Chapter IV. The school divisions represent all geographic sections of Virginia. Although only eight school divisions were full participants in the state training for inclusive special education, many LEA's were impacted by the movement toward inclusive special education. Over the five-year period, twenty-two local education agencies (LEA's) were selected for participation. Several were identified as exemplary sites, some were identified as full

Phase I sites (Group A in this study), and the remaining LEA's participated in varying phases of the project.

Group B - Two school divisions were used for calculation purposes in Group B. One school division had received training to use inclusive special education through the state project described above; the other had not. The two divisions were selected for comparison because they were identified by the Virginia Department of Education (DOE) as comparable school divisions with like characteristics in a project called Educational Performance Recognition (EPR) (Spagnolo, 1990). In the EPR study, these two school divisions had been grouped with thirteen others in the spring of 1989. Comparable variables identified at time of the 1989 grouping were percent of college graduates, percent of population in the upper income level, average daily membership (ADM) of the school division, percent of first grade students in the lowest quartile on ability tests, percent of students eligible for free or reduced price lunch, percent of change in the ADM from 1984-85 to 1988-89, population density per square mile, and local ability to pay using property, sales and income tax bases.

Group C contained all the school divisions in the state which reported special education expenditures for both 1987-88 and 1990-91. This group includes school divisions in the state who were not directly involved in state training projects which may have moved toward inclusive education.

Therefore, all divisions in the state (who reported data) were included in this study as Group C.

A cross-check of special education expenditures against total expenditure information found that a total of twelve school divisions did not report their special education expenditures either in 1987-88 or in 1990-91. Three of the non-reporting divisions were the same for both years. The enrollment, special education and total expenditure data for the twelve non-reporting school divisions were removed from the study for both the 1987-88 and 1990-91 years. None of the twelve non-reporting divisions were part of Group A or Group B. A listing of these non-reporting divisions and resulting adjusted totals can be found in Appendices D, E and F.

Data Collection

Expenditure data were gathered in four ways for this study. Each of the four methods are described below. Each of the three groups studied, Group A, Group B, and Group C, utilized a variety of information from these sources which will be detailed later in this chapter.

The first expenditure data source is the annual report of special education expenditures, and was obtained from the Virginia Department of Education. These data included all information found in Schedule B of the Annual Superintendent's Report (Spagnolo, 1993b) for the years 1987-88

and 1990-91. These data were gathered in LOTUS format and sorted by locality and included expenditures for each area of disability. Disability area expenditures for the eight school divisions in Group A can be found in Appendices A and B. Additionally, the differences between 1987-88 and 1990-91 have been calculated for each disability, both in dollar differences and percentage differences. These differences can be found in Appendix C. The reported expenditures utilized in the study for 1987-88 have been adjusted to reflect 1990-91 values by using a multiplier of 1.1569 (O'Neil, 1993).

The second type of expenditure information was found in Facing UP (Commonwealth of Virginia, 1989a) and the Superintendent's Annual Report for Virginia (Commonwealth of Virginia, 1992). This information was the total for all categories of expenditures for all school divisions. Included in these reports is the grand total for all school divisions in the Commonwealth of Virginia.

Third, expenditure data were gathered from the special education annual plans (Spagnolo, 1993a). The plans for 1989-90 and 1992-93 were located for the eight Group A inclusive school divisions. These plans provided a per pupil cost for an elementary and secondary regular education student and a per pupil cost for an elementary and secondary special

education student for the years 1987-88 and 1990-91. This information is found in Appendices K and L.

The fourth type of expenditure data were gathered by case study analysis. The researcher, using methods developed by Larson (1985), determined costs for 1987-88 and 1990-91 for all areas of disability. This determination was completed by on-site visitations for Group B school divisions. Actual records and reports, along with staff interviews, were used at each case study site to recalculate the cost associated for students with moderate to severe disabilities and for all other disability areas.

The method for reporting and accounting school division expenditures changed between 1987-88 and 1990-91. Additionally, the reporting mechanism for special education child count was modified. The expenditure reporting format for 1990-91 was much more detailed and identified special education expenditures exclusively, while the 1987-88 format did not pull out those specific costs. The special education data for 1987-88 were extracted from the annual report data by using staff listings and average annual salary calculations, along with prorating a number of expenditures by the proportion of special education students or staff. The majority of expenditures for 1990-91 were retrievable by program locations established specifically for special education, and in many cases broken down to specific cost centers by disability areas. In both years, when a specific special

education expenditure total could not be broken down by disability area, a proration was done based on either special education staff or special education students. The 1990-91 federal child count data provided a basis for prorating regular education costs. The Virginia Computerized Reporting System (K6) (Spagnolo, 1993c) provides a reporting of the percent of time each special education student is receiving special education for each identified special education disability. Therefore, the percent of time spent in regular education for each student was identifiable. This was accomplished by taking the raw data produced by K6 (Spagnolo, 1993c), parsing it into a Lotus file, totaling all time each student received special education, and then subtracting that from 100%. The result of this process produced the reported amount of time each identified student received regular education. These student data were then sorted by disability area and a mean was established for each disability area based on the total percent divided by the number of students. This calculated mean was then used to determine the discrete costs for regular education. Since no such raw data were available for 1987-88, the researcher used the same mean percent for 1987-88 to calculate regular education costs. Once the 1987-88 costs were determined, they were converted to 1990-91 values by using a multiplier of 1.1569 (O'Neil, 1993).

Group A - Each school division provides information in its annual report and its special education annual plan on categorical expenditures and on per pupil costs. Many factors could make this reporting inaccurate (Kienas, 1986) or cause this reporting to be inconsistent. However, these reports constitute a baseline of expenditures across the Commonwealth.

Financial annual report data in the special education areas of educable mental retardation (EMR), trainable mental retardation (TMR), severe & profound disabilities (SPH), hearing impairments (HH), deaf (D), speech or language impairments (SLI), visual impairments (VH), serious emotional disturbance (SED), orthopedic impairments (OI), other health impairments (OHI), autism (AUT), specific learning disabilities (SLD), deaf-blindness (DB), multiple disabilities (MH), developmental delays (DD) and support services were obtained along with total school division expenditures. These data were obtained from the LEA's of Bath County, Danville City, Giles County, Hanover County, Manassas City, Norfolk City, Petersburg City, and Wise County (Group A inclusive school divisions) for the 1987-88 school year and the 1990-91 school year. The special education annual plans for the above-listed divisions were obtained for the year 1989-90 and the year 1992-93. These plans contain excess cost (the amount spent for a special education student beyond that spent for a regular education student, a calculation required by the federal government) information that was used to calculate,

after adjusting to 1990-91 values, the average per pupil cost of special education, elementary and secondary, and regular education, elementary and secondary. The special education annual plans for 1989-90 and 1992-93 are based on school division financial information from reported expenditures for 1987-88 and 1990-91.

For these eight Group A inclusive divisions, the percent of special education cost compared to regular education cost was calculated for 1987-88 and 1990-91 to determine if there was significant change in the percent of total budget spent for special education, after adjusting the reported expenditures to 1990-91 values.

The enrollment data for the eight Group A inclusive divisions were gathered from reported state and federal information from the Virginia Department of Education. Special education enrollment data were obtained by locating the December 1st child counts submitted by all school divisions for the years 1987-88 and 1990-91. The 1987-88 (pre-inclusion) data were taken from copies of written reports and keyed into LOTUS version 3.4. School division and state totals were then calculated and formatted to match the 1990-91 data. The 1990-91 (post-inclusion) data were available on magnetic disk, by student, by locality, and with division totals. End of year enrollment was used to obtain a total enrollment count for both years. Total student population data were obtained through the publication Facing UP

(Commonwealth of Virginia, 1989a) and the same document which was published for the year 1990-91 and retitled Superintendent's Annual Report for Virginia (Commonwealth of Virginia, 1992).

Group B - This study also included two case studies that used the Larson (1985) model to calculate expenditures that are more detailed and may include expenses not reported for special education in the standard accounting procedures. Both case studies included information on students classified as EMR, as well as students with moderate to severe disabilities. These case studies attempted to categorize more accurately special education expenditures. The researcher obtained, through site visitations and interviews with staff, the necessary expenditure, environment (amount of time spent in special education) and enrollment data to conduct a Larson (1985) method of cost determination for two school divisions. The expenditure data were adjusted to reflect 1990-91 values. The researcher calculated costs in each area of disability for the 1987-88 (pre-inclusion) and 1990-91 (post-inclusion) school years using December 1st child count information and school division expenditure records. Another data set used with the two Group B schools was a calculation of the percentage of each special education child's time spent in regular education.

Group C - Expenditure data for Group C (all school divisions in Virginia reporting special education information for 1987-88 and 1990-91)

were gathered two ways for this study. One, the annual report of special education expenditures, was obtained from the Virginia Department of Education by requesting a copy of all reported data found in Schedule B of the Annual Superintendent's Report (Spagnolo, 1993b) for the years 1987-88 and 1990-91. The second source of information was Facing UP (Commonwealth of Virginia, 1989a) and the Superintendent's Annual Report for Virginia (Commonwealth of Virginia, 1992). This source provided the total expenditure for all categories of expenditures and enrollment for all school divisions. Included in these reports is the grand total of both enrollment and expenditures for all school divisions in the Commonwealth of Virginia.

Procedures for Data Analysis

Data to answer each of the six research questions were analyzed as follows.

1. Whether the reported per pupil cost of special education, elementary and secondary, in the eight Group A inclusive school divisions showed a significant change when compared to regular education per pupil cost, elementary and secondary, over the three-year period, 1987-88 to 1990-91, using the current state method.

A paired sample, two-tailed T-Test at the alpha level of .05 was conducted via NCSS Number Cruncher to test a null hypothesis stating that there was no significant difference within the group. A T-Test at the alpha level of .05, was conducted on each school division comparing 1987-88 to 1990-91. Bonferroni critical values were used to determine significance within divisions.

2. Whether the percent of special education cost, compared to total education cost, changed significantly in the eight Group A inclusive school divisions over a three-year period of time.

A paired sample, two-tailed T-Test, at the alpha level of .05 was conducted via NCSS Number Cruncher to test a null hypothesis stating that there was no significant difference within the group. A T-Test, at the alpha level of .05

was conducted on each school division comparing 1987-88 to 1990-91. Bonferroni critical values were used to determine significance within divisions.

3. Through two case studies, Group B schools, whether there was a significant difference in change from 1987-88 to 1990-91 between the costs of inclusive special education and special education without an inclusive model for the same identified group of students with disabilities including students classified as EMR, when using a more precise method for determining special education costs.

The Larson (1985) model developed a framework for descriptive and comparative cost analysis to allow LEA's to determine and compare costs for special education. This framework was developed to assist LEA's in the determination of special education costs for both students in public and private school programs, since no common method to analyze and compare costs was previously available.

A paired sample, two-tailed T-Test at the alpha level of .05 was conducted via NCSS Number Cruncher to determine significance within the school divisions in the case studies. Bonferroni's critical values were used to determine the significance of the change in each area of disability.

4. Through two case studies, Group B schools, whether there was a significant difference in change from 1987-88 to 1990-91 between the percentage of special education cost compared to the total education budget, using standard reporting data.

A T-Test was conducted at the alpha level of .05 to determine if there was a significant difference between the two case studies. Bonferroni critical values were used to determine the significance between the two divisions.

5. Using the case study data from 1987-88 and 1990-91, whether there was a significant change in the cost of inclusive special education when comparing standard state reporting data with a more precise method developed by Larson (1985).

A paired sample, two-tailed T-Test at the alpha level of .05 was conducted via NCSS Number Cruncher to test a null hypothesis stating that there was no significant difference. A T-Test, at the alpha level of .05, was then conducted on each area of disability comparing 1987-88 to 1990-91. Bonferroni critical values were used to determine significance within each disability.

6. Whether statewide (Group C schools) the percentage of special education cost compared to total education cost changed significantly from 1987-88 (pre-inclusion) to 1990-91 (post-inclusion).

A T-Test was conducted at an alpha level of .05 to determine if there was significant change from 1987-88 to 1990-91. Bonferroni's critical values were used to determine significance.

Dollars for 1987-88 and the resulting percentages were expressed in 1990-91 values by utilizing a multiplier of 1.1569. This multiplier, developed by O'Neil (1993), uses the consumer price index and reflects increases over the traditional fiscal year, July 1st to June 30th, instead of the calendar year.

CHAPTER IV

RESULTS

Inclusive special education programs for students with moderate and severe disabilities have been implemented for several years through a variety of methods in Virginia. The issue of the cost of such programs has been studied for eight Virginia school divisions represented in Group A of this study. Additionally, case studies were completed on two school divisions, Group B, one which participated in inclusive special education during the period of 1988-89 through 1990-91, and one that did not participate in a state-wide inclusion project or inclusive special education during the same time period for EMR, moderately or severely disabled students. A third calculation was completed for Group C, all school divisions in Virginia reporting special education expenditures for 1987-88 and 1990-91.

Question 1

Research Question 1: Did the reported per pupil cost of special education as implemented by the eight Group A school divisions show a significant change when compared to regular education per pupil cost over the three-year period using standard reporting data to establish per pupil costs?

Figures 1 and 2 illustrate the data collected on elementary and secondary per pupil expenditures and display the 1987-88 expenditures in 1990-91 values. A two-tailed, paired-sample, T-Test at the alpha level of .05 using a hypothesized mean of 0 found a probability of .6516; therefore, the null hypothesis was accepted for the elementary per pupil change. No significant difference in change exists within the group when comparing the elementary special education and the elementary regular education per pupil costs from 1987-88 to 1990-91, when expressing the 1987-88 costs in 1990-91 values. The T-Value found was .4714. This means that the group change in elementary special education per pupil costs was not significantly different than the group change in elementary regular education costs three years after the Group A began inclusive education.

A two-tailed, paired-sample, T-Test at the alpha level of .05 was conducted on the secondary data. A hypothesized mean of 0 found a probability of .1961; therefore, the null hypothesis was accepted for the secondary per pupil change. No significant difference in change exists within the groups when comparing the secondary special education and the secondary regular education per pupil costs from 1987-88 to 1990-91, when expressing the 1987-88 costs in 1990-91 values. The T-Value found was 1.4288. This means that the group change in secondary special education per pupil costs was not significantly different than the group change in the

secondary regular education costs three years after the Group A school divisions began inclusive education.

A two-tailed T-Test at the alpha level of .05 using a hypothesized mean of 0 was again conducted using Bonferroni's critical values to test the significance of difference between 1987-88 and 1990-91 for each participant school division, both at the elementary and secondary level. 1987-88 amounts were expressed in 1990-91 values.

The results of these series of T-Tests found that at the elementary level, seven of the eight divisions, Bath, Danville, Giles, Hanover, Manassas, Norfolk and Petersburg, had no significant difference. In one of the eight divisions, Wise County, the null hypothesis was rejected; therefore significance was found in that division at the elementary level. The results of these series of T-Tests found that at the secondary level, the null hypothesis was accepted for all divisions. Therefore, no significance was found in any of the per pupil differences at the secondary level.

Figure 1
Elementary Per Pupil Expenditures - Special & Regular Education

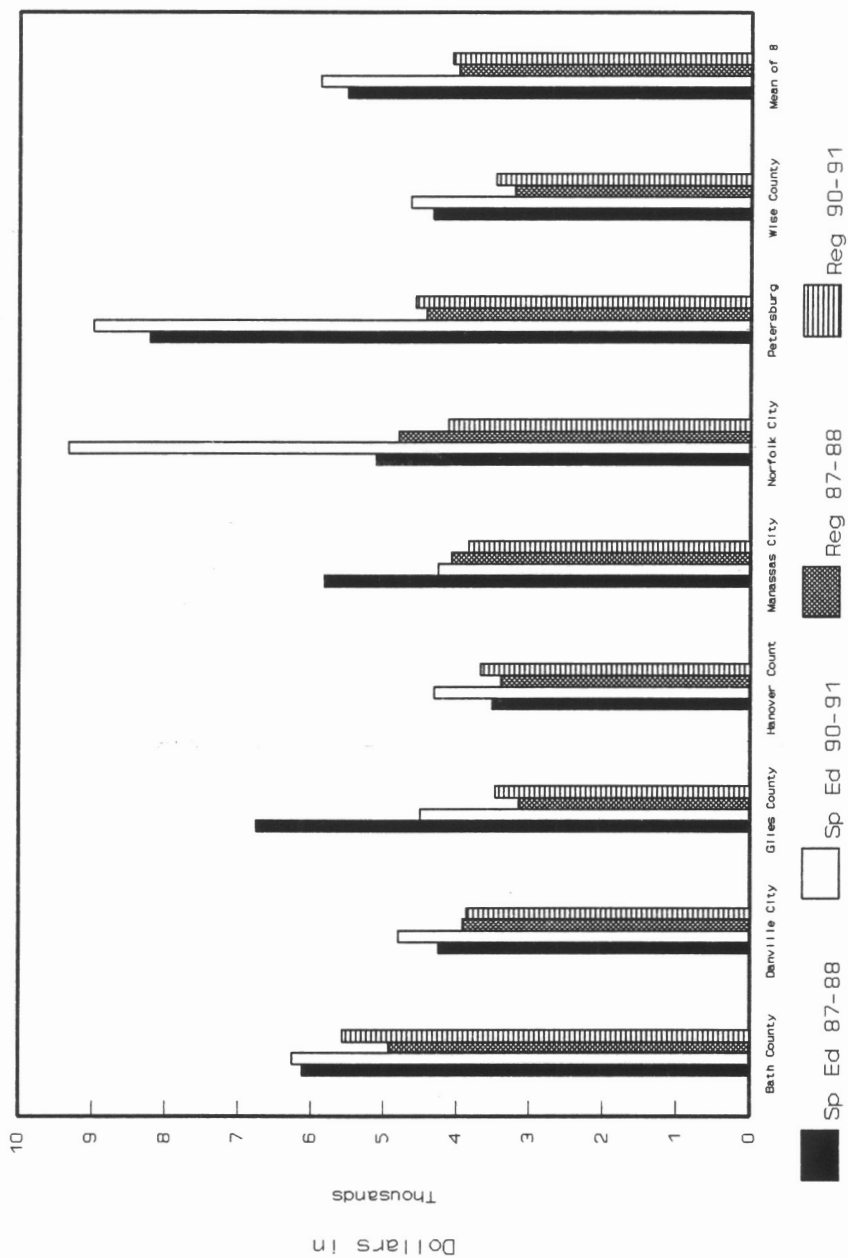
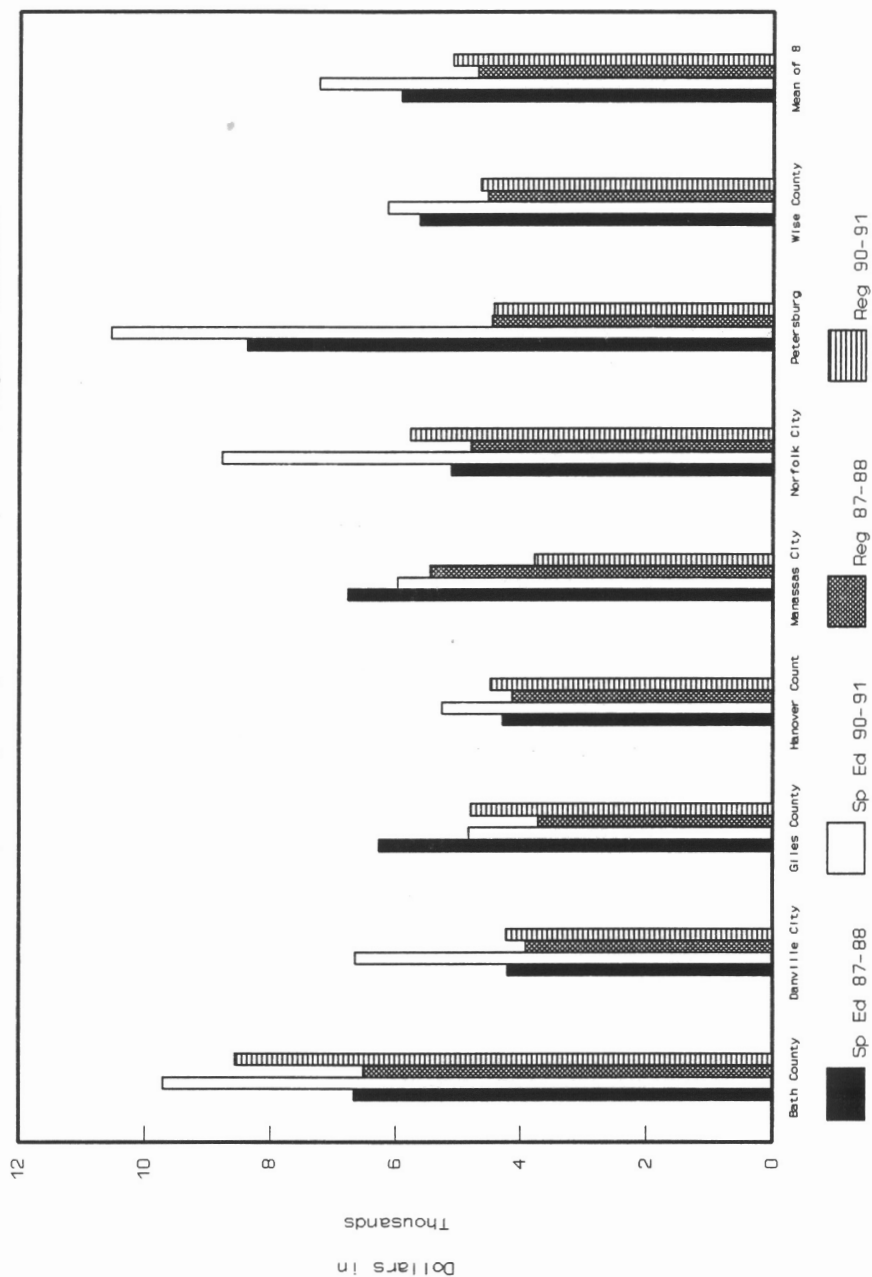


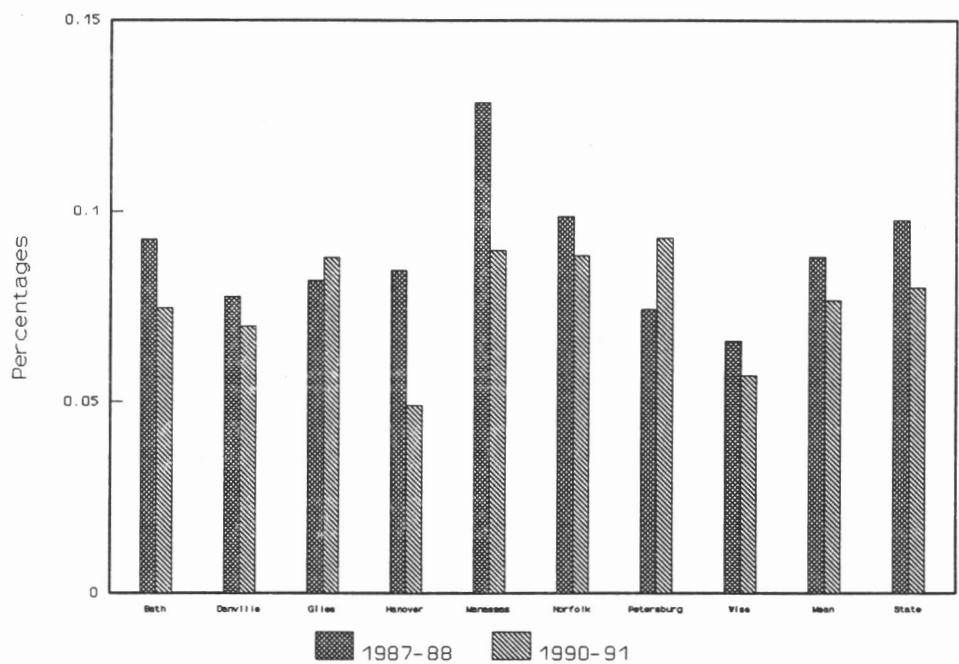
Figure 2
Secondary Per Pupil Expenditures - Special & Regular Education



Question 2

Research Question 2: Did the percent of special education cost compared to total education cost change significantly in the eight school divisions over a three-year period of time?

Figure 3
SPECIAL EDUCATION EXPENDITURES
Expressed as a Percentage of Total Expenditures



The percentage of the total expenditures for special education for each Group A school division is shown in Figure 3.

When comparing the eight divisions' change from 1987-88 to 1990-91, the difference in the percentage of special education expenditures to

total expenditures was negative in six of the divisions, meaning that a lower percent of total expenditures was reported for special education after a three-year period of inclusive special education for moderately and severely disabled students. In two of the eight divisions, Giles County and Petersburg City, the percentage of change was positive, meaning that a higher percent of total expenditures was reported for special education after a three year period of inclusive special education for moderately and severely disabled students. In the two divisions reporting a positive change, one change was reported at a .61% level and the other at 1.03% level. In the six negative change divisions, the reported change ranged from -0.79% to -3.55%.

The paired sample, two-tailed, T-Test, conducted at the alpha level of .05, found that there was no significant difference in the group of percentages of change for expenditures in 1987-88 when compared to 1990-91. The mean percentage of special education expenditure for the 1987-88 data was determined to be 8.90%. The mean percentage of expenditures for special education for 1990-91 data was determined to be 7.66%. The two-tailed T-Test conducted at the alpha level of .05 for each division found significance for each school division, when using Bonferroni's critical T-Values to compare 1987-88 to 1990-91.

Question 3

Research Question 3: Was there a significant difference in change from 1987-88 to 1990-91 between the cost of inclusive special education and special education without an inclusive model for the same identification group of students with disabilities including students classified as EMR, when using a more precise method for determining special education costs in Group B schools?

Table 1 shows the result of calculations which developed the cost of special education through a more precise method. The inclusive school division had no identified students in AUT, DB, or MH. Additionally, the inclusive division provided many of the same inclusive opportunities to its students classified as EMR; therefore, expenditure data for those students were considered when answering this question. In the two case studies, when utilizing the Larson method (1985) to establish the costs of education for moderately and severely disabled students, the inclusive school division showed an increase of expenditures for 1987-88 to 1990-91 in the areas of TMR and EMR, and showed a reduction in the SPH area. In the non-inclusive school division an increase of expenditures in all three areas was found. The increases are reported in 1990-91 values. The percentages of change for the inclusive division were: TMR 51.88%, EMR 35.78%, and SPH -28.36%. The percentages of change for the non-inclusion division were: TMR

218.64%, EMR 19.75%, and SPH 119.39%. No significant differences in change were found when conducting a paired-sample, two-tailed T-Test at the alpha level of .05 using a hypothesized mean of 0 for the Group B school divisions. A T-Value of -1.4942 was computed at a probability level of .2737; thus the null hypothesis was accepted. This means that when the 1987-88 expenditures were expressed in 1990-91 values, there was no significant difference in change from 1987-88 to 1990-91 in the cost of education for EMR, moderately and severely disabled students in the case study school divisions when using a more precise method for establishing special education costs.

Table 1
Cost of EMR, Moderate & Severe Special Education

1987-88				1990-91		
LEA	EMR	TMR	SPH	EMR	TMR	SPH
Inclusive	\$446,829	\$126,914	\$54,767	\$678,638	\$172,327	\$39,237
Non-Inclusive	\$300,889	\$127,323	\$51,231	\$384,089	\$155,309	\$101,996

When conducting a T-Test on each disability area representing EMR students or students with moderate to severe disabilities in the case study school divisions, at an alpha level of .05 and a hypothesized mean of 0, the null hypothesis was accepted in the areas of TMR, EMR and SPH, when utilizing Bonferroni's critical values. This indicates that no significant difference in change existed in the expenditures of TMR, EMR and SPH when comparing a school division which implemented an inclusive model to a division that did not implement an inclusive model.

Question 4

Research Question 4: Was there a significant difference in change when using standard reporting expenditure data from 1987-88 to 1990-91 between the percentage of special education cost represented in total expenditures when comparing a school division which utilized an inclusion model to a school division which did not utilize a inclusion model?

Table 2

Percent of Expenditures-Special Education: 1987-88 & 1990-91

Special Education Group B						
1987-88				1990-91		
LEA	Sp Ed	Total	Percent	Sp Ed	Total	Percent
Inclusive	\$966,390	\$11,813,704	8.18%	\$1,088,379	\$12,387,336	8.79%
Non-Inclusive	\$1,733,147	\$17,999,261	9.63%	\$2,082,964	\$23,419,357	8.89%

The resultant case study data can be found in Table 2. This table displays the reported expenditures for 1987-88, expressed in 1990-91 values, and the 1990-91 expenditures. It also shows the percent of the total budget represented by special education in an inclusive school division and in a non-inclusive school division. In the two case studies shown in Table 2, the percent of special education expenditures for the inclusive division was 8.18% in 1987-88 and 8.79% in 1990-91. In the non-inclusive division the percent of expenditures reported for 1987-88 was 9.63% and 8.89% in 1990-91 (1987-88 expenditures were expressed in 1990-91 values). A two-tailed, paired-sample T-Test was conducted at the alpha level of .05. The hypothesized mean of 0 was not rejected. The T-Value was determined to be -1.1481 with a probability level of .4562; thus no significant difference in

change was found from 1987-88 to 1990-91 between the percentage of special education cost compared to total education expenditures as a group, for the two case study school divisions, when using the data reported in the standard reporting format.

When again conducting the two-tailed T-Test at the alpha level of .05 from the two case study divisions, on the percentage of change for each division and utilizing Bonferroni's critical values, the null hypothesis was rejected for both school divisions. Thus a significant difference in change was found regarding the percent of special education expenditures reported as a part of total expenditures for both the inclusive and non-inclusive school divisions when comparing their individual 1987-88 to 1990-91 reported expenditure data. The change in the inclusive division was positive and the change in the non-inclusive division was negative. This means that the inclusive case study division had a significant increase in the percent of special education expenditures represented in total expenditures three years after beginning inclusive education. The non-inclusive case study division had a significant decrease in the percent of special education expenditures during the same time period.

Question 5

Research Question 5: Was there a significant change in the cost of inclusive special education for a school division implementing an inclusive model of special education, when comparing the standard state reporting data with the cost determined by a more precise method developed by Larson (1985)?

A paired-sample, two-tailed T-Test was conducted on case study data at an alpha level of .05 using a hypothesized mean of 0. The obtained T-Value was 2.0209 and the probability was calculated to be .0628. No significance was found within the group means. Therefore, there is no significant change in the reported cost of inclusive special education when determining the cost through a more precise method for the school division implementing an inclusive model.

A two-tailed T-Test conducted at an alpha level of .05 was then conducted on each area of disability for the inclusive school division, comparing standard reported costs with more precise costs developed by using the Larson (1985) method. In the areas of EMR and TMR, the null hypothesis was rejected. Only one other area, DD, was found to have a statistically significant change when using Bonferroni's critical T-Values. In the remaining areas of disabilities the hypothesized mean of 0 was accepted, meaning that when using Bonferroni's critical values, a significant change did

not exist in these areas of disability for the school division implementing the inclusive model.

Question 6

Research Question 6: Statewide (Group C), did the percentage of special education cost compared to total education cost change significantly from 1987-88 (pre-inclusion) to 1990-91 (post-inclusion)?

Figure 3 displays the results of the eight divisions, the mean of the eight divisions, and the state totals regarding this comparison. The adjusted expenditure totals show a negative change in special education expenditures to total expenditures when comparing state data from 1987-88 and 1990-91. This means that a lower percent of state-wide expenditures was spent on special education in 1990-91 than in 1987-88. Table 3 shows the adjusted expenditure totals for 1987-88 and 1990-91.

Table 3

Expenditures of Eight Group A Participants
and State-Wide Totals

LEA (Group A)	Sp Ed 1987-88	LEA Total 1987-88	% of Tot	Sp Ed 1990-91	LEA Total 1990-91	% of Tot.	Diff in %
Bath	551,224	5,959,215	9.25	505,263	6,766,940	7.47	-1.78
Danville	2,317,229	29,830,126	7.77	3,012,739	43,169,056	6.98	-.79
Giles	966,390	11,813,704	8.18	1,088,379	12,387,336	8.79	.61
Hanover	3,511,865	41,579,937	8.45	3,930,132	80,240,085	4.9	-3.53
Manassas	2,616,068	20,361,597	12.85	3,152,613	35,126,603	8.98	-3.87
Norfolk	18,240,119	184,971,219	9.86	18,093,093	204,844,820	8.83	-1.03
Peters- burg	1,968,600	26,462,861	7.44	2,646,082	28,480,323	9.29	1.85
Wise	2,410,105	36,573,433	6.59	2,565,050	45,082,187	5.69	-.9
Mean of 8 Divisions	4,072,700	44,694,012	8.8	4,374,169	57,012,169	7.67	-1.13
State Totals (Group C)	412,850,523	4,229,979,872	9.76	454,207,946	5,673,356,768	8.01	-1.75

Expressed in 1990-91 Values

The percentage of change was -1.75%. This change is expressed in 1990-91 values. The two-tailed T-Test conducted at the .05 level, using a null hypothesis which stated that there was no significant difference, was rejected when using Bonferroni's critical T-Values. This means that there was a significant change in the cost of special education, when expressed as a percent of total state expenditures. The T-Test compared the percentage of expenditures for special education in 1987-88, expressed in 1990-91 values, to 1990-91.

During the same period of time, as shown in Table 3, the special education enrollment expressed as a percent of total enrollment increased at the state level by .5 percent.

CHAPTER V

DISCUSSION, CONCLUSIONS, RECOMMENDATIONS FOR FURTHER STUDY AND SUMMARY

This study looked at standard reporting data for eight inclusive school divisions, Group A in the study, for the years 1987-88 and 1990-91. It also analyzed data from two case study school divisions, Group B, one which implemented the inclusion model for EMR, moderately and severely disabled students and one that did not implement the model. The study also analyzed state-wide data before and after school systems (Group C) implemented inclusive education. This chapter discusses the results of the data collected for the eight participant divisions (Group A), two case study divisions (Group B), and the state (Group C). In addition, conclusions, recommendations for further study, and a summary are provided.

DISCUSSION

When special education expenditures were compared to total expenditures over a three-year period, there was a reduction of expenditures in a majority of the eight school divisions studied in Group A. This combines with a reduction of the percent of special education students found in majority of the Group A school divisions. The researcher speculates that

inclusive activities may have caused these reductions by a combination of the following; a better understanding of the special education process by a larger number of regular educators, an administrative attitude which implied that special education students must be served in regular classrooms, or a general sense of frustration regarding the special education process causing a reluctance to refer students to the special education process.

The analysis of per pupil cost data for the eight Group A school divisions found that those changes reported were not consistent with the changes reported for special education expenditures when compared as a percent of total expenditures for the same three-year period, 1987-88 to 1990-91.

The case study (Group B) data were not consistent with the reported data from Group A divisions, as the inclusive division in Group B found a significant increase in cost after the three-year period. Expenditure data for the Group B school divisions were derived from the Larson method rather than the standard reporting data analyzed in the Group A comparisons in answering this question. The inconsistency can be found by looking at per pupil data reported at the secondary level where six of the eight Group A school divisions reported increases in special education per pupil costs, while at the same time six of the eight Group A school divisions reported reductions in their expenditures for special education, expressed as a percent

of total expenditures. Also at the elementary level six of the eight Group A school divisions reported increases in special education per pupil costs.

Computation of cost using the Larson method yielded more complete and, therefore, more accurate data. The case study data (Group B) found that in both school divisions the cost of special education, when using a more precise method for determining costs, to be approximately one and one-half times more than was reported in standard procedures. Larson's (1985) method, along with the availability of specific percentages of time special education students were receiving regular education, provided a more accurate calculation of special education costs. Larson (1985) noted that environmental data, time special education students were receiving regular education and special education, are difficult to gather and calculate. This study contrived a method to capture those data, improving on the accuracy of the method used by Larson. Table 4 displays the results of data found regarding the mean percent of time the case study divisions reported special education students participating in regular education. Because Virginia has altered its method of reporting the amount of time special education students are receiving services, this study was able to more accurately calculate this figure for 1990-91 data.

The analysis of case study data also provided evidence that a non-inclusive school division was reporting, in some disability areas, more

inclusion than was the inclusive school division. The researcher interviewed teachers and administrators and found that the reported data, especially in the moderate and severe disability areas, did not accurately represent the time students spent in regular education. Through these interviews, the most logical explanation found was in the rationale for the reporting of services. Most special education teachers of moderate and severe disability areas reported time spent with their special education students in regular education classrooms or activities with age-appropriate peers as a service to their students. Therefore the inclusive Group B schools reported this inclusive time as a special education service, not as time special education students were receiving regular education. Teachers of mild and moderate disability areas reported the time special education students spent in regular education as such. These reporting assumptions then were reflected in the K6 (Spagnolo, 1993c) report.

Table 4

Special Education Percent of Time Spent in Regular Education

Disability	Non-Inclusive Division	Inclusive Division
AUT	.5	NA
D	36.5	NA
DD	33.31	52.57
EMR	30.47	39.31
HH	87.33	86
MH	35.57	NA
OHI	56.33	61.67
OI	69.4	98.5
SED	49.75	52.86
SLD	59.22	72.24
SLI	97.29	95.87
SPH	1.2	0
TMR	4.2	3.33
VH	80.5	48

A number of interesting facts emerged from this study.

1. The special education per pupil expenditures reported by the eight Group A school divisions did not show a significant change as a group, when comparing 1987-88 to 1990-91. This was consistent with the group data found regarding special education expenditures, when expressed as a percent of total expenditures. When looking at the individual school divisions, the issue of significance was not consistent with each school division when comparing special education per pupil data to total expenditure data. When looking at special education as a percent of total expenditures on an individual school division basis and utilizing Bonferroni critical values, all of the eight Group A school divisions showed a significant change. When looking at per pupil expenditures, only one of the eight divisions, at the elementary level, showed a significant change. At the secondary level, none of the eight divisions showed a significant change. However when looking at this data at the school division level, the change that occurred would be significant to a local budget, but because of the size and range of the totals studied, the level of change is not statistically significant.

2. The percentage of special education students increased, state-wide (Group C) while the percent of total expenditures for special education decreased when comparing 1987-88 to 1990-91, after adjusting 1987-88 expenditures to 1990-91 values. State-wide totals were adjusted for divisions that did not report data during either year. No major changes occurred in the special education identification process during this time period that would account for the increase in the percent of special education students identified for services.
3. In six of the eight Group A school divisions, the cost of special education, reported as percent of total expenditures, dropped from 1987-88 to 1990-91. In two of the eight Group A school divisions an increase was found. Additionally, in five of the eight divisions the percent of special education students represented in the total enrollment dropped during the same period of time. In three of the eight Group A school divisions the percent of special education students represented in the total enrollment increased slightly, less than one percent.
4. The case study data in Group B show that disability areas outside of the Virginia Statewide Systems Change Project parameters were involved in inclusive education. The data

collected found that the inclusive school division was providing a higher percent of inclusive education in a majority of its mildly and moderately disabled categories than was the non-inclusive division. The data also show that the inclusive division was reporting a lower percent of inclusion for its moderately to severely disabled categories. These data were obtained from K6, the current state reporting method, (Spagnolo, 1993c) while determining the percent of time special education students were spending in regular education. These data were further investigated and an explanation was provided earlier in this chapter. Through this investigation it was found that the expansion of the inclusive model to include students with mild to moderate disabilities occurred as successes were communicated within faculty. Other disability area teachers became exposed to the inclusive process through county-wide staff development activities. Staff also reported that the exposure and involvement in inclusive education was voluntary, not mandatory. The researcher has concluded that this means the pilot project which was used to implement inclusive practices for students with moderate and severe disabilities also affected all areas of special education.

5. The case study, inclusive school division, showed a -28.36% reduction in the cost of SPH three years after the implementation of inclusive special education for that population of disabled students. Further investigation found the lowering of expenses was caused by two major factors. The number of pupils being served was reduced by program completers, and a new staffing pattern had been established to serve other inclusive environments as the number of students identified as SPH declined.
6. As data were collected, the researcher found that significant changes in leadership had occurred over the three-year time of the study. In the eight Group A school divisions, six of the eight were currently being led by superintendents who were not serving in that capacity in 1987-88. In four of the eight divisions, the staff person responsible for special education in 1987-88 was no longer in that position. In the two case study divisions, both divisions are currently being served by different superintendents than were employed in 1987-88. In the case study divisions, the inclusive division was still being served by the special education director who was responsible for special education in 1987-88, but the non-inclusive case study division

was not being served by its 1987-88 director. Therefore, data collection was severely hampered because most lead players had changed since 1987-88. The persons now responsible did not always know answers to questions about 1987-88 or even in some cases, 1990-91 data.

7. The researcher found that several school divisions did not report special education expenditures separately (schedule B) when submitting their total annual expenditures for the years 1987-88 and 1990-91 and, therefore, were not included in state data. When inquiring about this lack of information, the researcher was informed by Virginia Department of Education staff that several divisions had not submitted it, even though this requirement was a part of administrative direction issued by the Virginia Department of Education. State-wide (Group C) figures were adjusted to reflect this discrepancy.

CONCLUSIONS

Several studies, Larson (1985), Kienas (1986), and Slobojan (1986) have looked at the cost of special education and have always found the per pupil cost to be greater than the cost of regular education. The researcher found nothing unusual or different from previous studies in the cost of special education. Calculations of the two case study school divisions' special education costs, utilizing Larson's (1985) methodology, resulted in costs approximately one and one-half times those submitted to the Virginia Department of Education. The researcher showed that in a majority of the eight Group A school divisions, the cost of special education as a percent of total expenditures was reduced and total enrollment of special education students decreased from 1987-88 to 1990-91. Case study data (Group B school divisions) were not consistent with the reduction found for Group A school divisions.

The inclusive case study division found a significant increase in the percent of special education expenditures, along with an increase in enrollment. Case study data (Group B) showed that a school division implementing inclusive special education practices showed a greater increase in special education costs when compared to a school division who did not select an inclusive model during the same period of time, 1987 to 1991.

The literature review did not specifically report additional costs

associated with inclusive special education, however, much of the literature that supported inclusive special education stressed the importance of staff development and collaboration within special education and regular education. The case study data (Group B) found that the inclusive school division, which used staff development and collaborative activities, did spend additional funds in regular and special education for these activities. These funds were not always reported as special education expenditures; therefore, these costs are very difficult to attribute to special education. Many of the funded staff development activities involved formal training through colleges and universities, release time for collaborative training efforts and opportunities for special education and regular education staff to plan and work on inclusive activities.

RECOMMENDATIONS FOR FURTHER STUDY

Further studies should examine the cost of training and professional development provided to inclusive school divisions and determine if this training and collaboration necessary for successful inclusion provided regular educators with a greater knowledge and new strategies to meet the needs of students who might otherwise be considered for special education, therefore reducing the number of students referred for specific special education

services. This analysis would be beneficial to researchers who may want to do cost analysis of inclusive special education.

Second, the effects of special education staff working in regular education classrooms and the effect this change in environment has on the number of students that might otherwise have been referred for special education services should be studied. This may provide data which would assist in determining the cost effectiveness of inclusive special education.

Third, there is the issue of accurate reporting of inclusive education. Do the current state reporting mechanisms allow for reporting of staff positions and expenditures directly related in inclusion, or are they forced to fit the existing categories in special education and general education categories?

SUMMARY

This study looked at the cost of inclusive special education for students with disabilities as identified by eight Group A school divisions; two case study divisions, Group B, one implementing inclusive education recommendations and one that did not; and state-wide data, Group C. In the case studies, Group B, expenditures and data were also used for EMR students.

Although cost reductions were found in six of the eight school divisions, the researcher does not recommend inclusive education as a cost-reduction program. The case study data were not consistent with the finding of the majority of the eight Group A reported expenditures. In the inclusive case study division, Group B, other costs were found, although not specifically charged to special education, that were related to inclusion. The majority of those costs were associated with professional development. The specific activities which required additional funding included college courses, release time for teachers and administrators, and specific workshops which provided a collaborative environment for regular and special educators. This study also supported the original idea developed by Larson (1985) that the costs of special education are under reported when comparing standard reporting data.

Data were found that suggest realignment of reporting expenditures may need to occur for school divisions moving toward inclusive special education. This study also provided information that points out the inaccuracy of financial reporting for special education. The study provided evidence on the inconsistencies that exist in the reporting of the level of services provided to special education students. Specific recommendations to improve these inconsistencies would include a uniform definition regarding the issue of the delivery of service, both for the student and the environment

and development of a consistent reporting mechanism that would incorporate the same date for reporting expenditures, total student enrollment and special education enrollment. Additionally, a mechanism should be developed to charge inclusion costs separate from the standard special education and general education categories.

The researcher's most important finding from this study is that data do not clearly show that inclusive education saves money or reduces special education services. Therefore inclusive education should be implemented, as should any other special education service, when it provides the most appropriate educational program in the least restrictive environment, not for ease of administration or as a cost-saving measure.

REFERENCES

- American Federation of Teachers (1993). Several lessons can be learned from "Educating Peter" (Fax communication alert to print and broadcast media). Washington, DC: Author.
- Ayres, B. & Meyer, L.H. (1992). Helping teachers manage the inclusive classroom. School Administrator, 2(49), 30-31, 33, 35, 37.
- Biklen, D. (1992). Schooling without labels: Parents, educators, and inclusive education. Philadelphia: Temple.
- Biklen, D. (1985). Achieving the complete school. New York, NY: Teachers' College Press.
- Blackman, H.P. (1992). Surmounting the disability of isolation. School Administrator. 2(49), 28-29.
- Board of Education, Sacramento City School District v. Holland, 786 F. Supp. 874 (E.D.Cal 1992).
- Capper, C.A. & Larken, J. (1992). The regular education initiative: Educational reorganization for rural school districts. Journal of School Leadership, 2(2), 232-45.
- Casanave, S. (1991). A community of friends. Equity-and-Choice, 8(1), 38-44.

- Chaikind, S., Danielson, L., & Brauen, M. (1993). What do we know about the cost of special education? A selected review. Journal of Special Education, 26(4), 344-370.
- Chambers, J.G. & Hartman, W. (1981). Cost-based approach to the funding of educational programs Stanford University: California Institute for Research on Educational Finance, U.S. Educational Resources Information Center. (ERIC Document Reproduction Service No. ED 202 298)
- Code of Federal Regulations, 34 C.F.R. §300.551 (1992).
- Code of Federal Regulations, 34 C.F.R. §300.382 (1993a).
- Code of Federal Regulations, 34 C.F.R. §300.184 (1993b).
- Code of Federal Regulations, 34 C.F.R. §300.340 (1993c).
- Code of Federal Regulations, 34 C.F.R. §300.350 (1993d).
- Code of Virginia §22.1-98 (1988).
- Code of Virginia §2.1-753 (1992).
- Cohn, E. (1972). Public expenditure analysis. Lexington, MA: Lexington Books.
- Commonwealth of Virginia (1992). Superintendent's Annual Report for Virginia. Richmond: Department of Education, Division of Management Information Services.

- Commonwealth of Virginia (1989a). Facing Up - 23. Richmond: Department of Education, Division of Management Information Services.
- Commonwealth of Virginia (1989b). Improving instructional leadership in special education: A challenge for principals. Richmond: Department of Education, Division of Special Education.
- Commonwealth of Virginia (1988). Report on the Joint Legislative Audit and Review Commission on funding the standards of quality part 2: SOQ costs and distribution. Senate Document No. 24. Richmond.
- Conn, M. (1992). How four communities tackle mainstreaming. School Administrator. 2(49), 22-24.
- Council for Exceptional Children (1993a). CEC policy on inclusive schools and community Settings (Policy adopted by the CEC Delegate Assembly). Reston, VA: Author.
- Council for Exceptional Children (1993b). The invisible powers behind Peter's success (Fax communication alert to print and broadcast media). Reston, VA: Author.
- Council for Learning Disabilities Position Statement April, 1993. (1993). Learning Disability Quarterly, 16(2), 126.
- Daniel R. R. v. State Board of Education, et. al., 874 F. 2d 1036 (5th Cir. 1989).

Debate flares over teaching kids with special needs. (1993, December 13).

Roanoke Times & World News, p. A8.

Dodson, S. D. (1987). Factors related to special education services in Virginia school divisions. Unpublished doctoral dissertation, Virginia Tech University, Blacksburg, VA.

Feldman, E. (1991). Guidelines regarding integration of students with identified special education needs. (ERIC Document Reproduction Service No. ED 343 311)

French v. Omaha Public Schools, 766 F. Supp. 765 (D. NE 1991).

Goodwin, T. C. (Producer), & Warzburg, G. (Director). (1988). Regular Lives [Film]. Washington, D.C.: State of the Art productions.

Goodwin, T. C. (Producer), & Warzburg, G. (Director). (1993). Educating Peter [Film]. New York, NY: Home Box Office

Hornbeck, David (1992). On the changing face of special education: His 'Schools of Distinction' would meet needs of all children. School Administrator, 2,(49), 14-18.

Janney, R. (1992, September). The Virginia Statewide Systems Change Project: Final Report. (Available from the Virginia Commonwealth University, Box 2020, Richmond, VA).

Janney, R., & Beer, M. (1991). The Virginia Statewide Systems Change Project - Moving from segregated to integrated special education: A

- systems change process for local Education agencies. (Available from the Virginia Commonwealth University, Box 2020, Richmond, VA).
- Jenkins, J.R. & Pious, C.G. (1991). Full inclusion and the REI: A reply to Thousand and Villa. Exceptional Children, 6(57), 562-64.
- Jones, P. (1991). Cost of special education: Is mainstreaming really cheaper? Council of Administrators of Special Education, VI(1), 40-43.
- Kakalik, J.S., Furry, W.S., Thomas, M.A., & Carney, M.F. (1981). The cost of special education (Rand Note N-1792-ED). Santa Monica, CA: U.S. Department of Education.
- Kauffman, J.M. & Hallahan, D.P. (1990). What we want for children: A rejoinder to REI proponents. Journal of Special Education, 24, 340-345.
- Kauffman, J.M., & Pullen, P.L. (1989). REI movement throwing baby out with the bath? Virginia Journal of Education, 82(8), 16-19,27.
- Kienas, K. (1986). Comparison of the efficiency and effectiveness of two models for determining the cost of special education programs. Unpublished doctoral dissertation, Virginia Tech University, Blacksburg, VA.
- Larson, J. (1985). Framework for descriptive and comparative cost analysis of public and nonpublic special education programs. Unpublished doctoral dissertation, Virginia Tech University, Blacksburg, VA.

Mavis v. Board of Education, South Lewis Central School District, 1993 WL 532599 (N.D.N.Y.).

McGrew, K., Thurlow, M., Shriner, J., & Spiegel, A. (1992). Inclusion of students with disabilities national and state data collection programs (Technical Report 2). Minneapolis: University of Minnesota, National Center on Educational Outcomes.

National Education Association. (1993). Integrating students with special needs: Policies and practices that work (NEA Publication #1861-3). West Haven, CT.

Nelson, C., Rutherford, R.B., Jr., Center, D.B., & Walker H.M. (1991). Do public schools have an obligation to serve troubled children and Youth? Exceptional Children, 5(57), 406-15.

Oberti v. Board of Education of the Borough of Clementon School District, et al., 801 F. Supp. 1392 (D. NJ 1992).

O'Neil, J. S. (1993). Spreadsheet for conversion of school year consumer price index figures [machine-readable data file]. Blacksburg: Virginia Tech, Division of Administrative & Educational Services (Producer). Blacksburg: College of Education (Distributor).

Porter, G.L. & Richler, D. (Eds.) (1991). Changing Canadian schools: Perspectives on disability and inclusion. Toronto: G. Allen Roeher.

Public Law 101-476. 1991. Individuals with disabilities education act, 20 U.S.C.

Public Law 94-142. 1975. The education for all handicapped children act, 20 U.S.C.

Raynes, M., Snell, M., & Sailor, W. (1991). A fresh look at categorical programs for children with special needs. Phi Delta Kappan, 73(4), 326-331.

Reynolds, M.C. (1989). An historical perspective: The delivery of special education to mildly disabled and at-risk students. Remedial and Special Education, 6(10), 7-11.

Rossmiller, R. A., Hale A., & Frohreich, L. E., (1970). Educational programming for exceptional children: Resource configuration and costs (National Education Finance Project Study Number 2). Madison: University of Wisconsin.

Salmon, R. G. (1989). Understanding Virginia school finance. Paper presented at a meeting of leaders, Pearisburg, VA, December.

Sapon-Shevin, M. (1990). Student support through cooperative learning. In W. Stainback & S. Stainback (Eds.), Support networks for inclusive schooling: Interdependent integrated education (pp. 65-79). Baltimore: Paul H. Brookes.

Schattman, R. & Benay, J. (1992). Inclusive practices transform. School Administrator, 2(49), 8-12.

Sindelar, P., Watanabe, A.K., McCray, A.D., and Hornsby, P.J. (1992). Special education's role in literacy and educational reform. Teaching Exceptional Children, 3(24), 38-40.

Sklaroff, S. (1994, January 12). A.F.T. urges halt to "Full Inclusion" movement. Education Week, p. 7.

Shapiro, J.P., Loeb, P., Bowermaster, D., Wright, A., Headden, S., & Toch, T. (1993, December 13). Separate and unequal. U.S. News & World Report, pp. 46-60.

Slobojan, A. (1986). A study of educational program costs for Frederick County (MD) Public Schools. Unpublished doctoral dissertation, Virginia Tech University, Blacksburg, VA.

Spagnolo, J., Jr., (1993a). State superintendents memo, administrative number 4. (Available from the Virginia Department of Education, Post Office Box 167, Richmond, VA).

Spagnolo, J., Jr., (1993b). State superintendents memo, administrative number 65. (Available from the Virginia Department of Education, Post Office Box 167, Richmond, VA).

- Spagnolo, J., Jr., (1993c). State superintendents memo, administrative number 105. (Available from the Virginia Department of Education, Post Office Box 167, Richmond, VA).
- Spagnolo, J., Jr., (1993d). State superintendents memo, regulatory number 15. (Available from the Virginia Department of Education, Post Office Box 167, Richmond, VA).
- Spagnolo, J., Jr., (1993e). State superintendents memo, informational number 83. (Available from the Virginia Department of Education, Post Office Box 167, Richmond, VA).
- Spagnolo, J., Jr., (1990). State superintendents memo, administrative number 90. (Available from the Virginia Department of Education, Post Office Box 167, Richmond, VA).
- United States Department of Education. (1993). To assure the free appropriate public education of all children with disabilities: Fifteenth annual report to congress on the implementation of the individuals with disabilities education act. Washington, DC: Office of Special Education Programs, U.S. Office of Special Education and Rehabilitative Services.
- Virginia Education Association. (1993, December). Chalktalk. (Available from Virginia Education Association, 116 S. Third Street, Richmond, VA 23219)

Visco v. School District of Pittsburgh, et al., 684 F. Supp. 1310 (W.D. PA, April 28, 1988).

Webster's New World Dictionary. (1993). New York, NY: World Publishing Company.

Weintraub, F. J., & Ballard, J. (1982). Introduction: Bridging the decades. In J. Ballard, B.A. Ramirez, & F. J. Weintraub (Eds.), Special education in America: Its Legal and Governmental Foundations. Reston, VA: The Council for Exceptional Children 1-9.

Whittaker, J. (1991). Three surprising ways of impeding the integration of students with special needs into FE curricular contexts and how inclusive education may begin to help on this. Vocational Aspect of Education, 43, 3, 225-230.

Wong, K.L.H., Kauffman, J.M., & Lloyd, J.W. (1991). Choices for integration: Selecting teachers for mainstreamed students with emotional or behavioral disorders. Intervention in School and Clinic, 27, 108-115.

York, J., & Vandercook, T. (1989). Strategies for full inclusion (Project Rep. No. 89-4). Minneapolis: University of Minnesota, Institute on Community Integration.

APPENDIX A

EXPENDITURES BY DISABILITY REPORTED BY EIGHT

GROUP A PARTICIPANTS

1987-88

LEA	EMR Total 1987-88	TMR Total 1987-88	SPH Total 1987-88	HH Total 1987-88	DEAF Total 1987-88	SLI Total 1987-88	VH Total 1987-88	SED Total 1987-88
Bath County (009)	\$51,865	\$62,116	\$0	\$0	\$0	\$30,319	\$3,722	\$14,534
Danville City (108)	\$313,272	\$44,637	\$45,462	\$80,212	\$0	\$2,735	\$639	\$268,750
Giles County (035)	\$172,203	\$83,261	\$51,894	\$9,701	\$0	\$57,631	\$1,542	\$55,315
Hanover County (042)	\$233,628	\$116,145	\$42,619	\$33,673	\$8,394	\$195,802	\$29,691	\$442,391
Manassas City (143)	\$110,175	\$94,821	\$11,688	\$0	\$0	\$158,652	\$0	\$149,164
Norfolk City (118)	\$1,374,648	\$800,981	\$0	\$400,017	\$33,654	\$896,839	\$64,497	\$1,454,406
Petersburg City (120)	\$347,173	\$228,332	\$172,701	\$0	\$0	\$161,829	\$894	\$274,430
Wise County (096)	\$339,288	\$220,532	\$160,898	\$0	\$48,729	\$139,388	\$16,225	\$168,704
Average of Eight LEA's	\$367,782	\$181,353	\$60,658	\$65,450	\$11,347	\$205,399	\$14,626	\$353,462
State	\$28,942,003	\$14,304,404	\$7,814,731	\$5,726,663	\$2,151,772	\$26,092,908	\$2,569,368	\$41,056,315

a:\ddis3.wk3

LEA	OI Total 1987-88	OHI Total 1987-88	AUT Total 1987-88	SLD Total 1987-88	DB Total 1987-88	MH Total 1987-88	DD Total 1987-88	SUP. SER Total 1987-88
Bath County (009)	\$174	\$0	\$0	\$157,820	\$0	\$13,509	\$7,264	\$135,143
Danville City (108)	\$0	\$112	\$0	\$507,973	\$0	\$0	\$0	\$739,172
Giles County (035)	\$1,027	\$0	\$973	\$259,968	\$0	\$0	\$33,203	\$108,609
Hanover County (042)	\$1,500	\$1,500	\$2,000	\$1,076,722	\$100	\$42,241	\$187,523	\$621,652
Manassas City (143)	\$0	\$0	\$0	\$936,583	\$0	\$0	\$165,878	\$634,313
Norfolk City (118)	\$454,068	\$116,376	\$39,161	\$4,330,700	\$0	\$882,830	\$928,453	\$4,189,745
Petersburg City (120)	\$0	\$0	\$0	\$323,334	\$0	\$0	\$0	\$193,123
Wise County (096)	\$5,089	\$0	\$0	\$492,214	\$0	\$0	\$40,215	\$451,962
Average of Eight LEA's	\$57,732	\$14,749	\$5,267	\$1,010,664	\$13	\$117,323	\$170,317	\$884,215
State	\$4,583,108	\$886,469	\$5,127,867	\$116,464,775	\$29,898	\$8,331,117	\$19,333,199	\$73,444,702

e:\ddiis3.wk3

APPENDIX B

EXPENDITURES BY DISABILITY REPORTED BY EIGHT

GROUP A PARTICIPANTS

1990-91

LEA	EMR Total 1990-91	TMR Total 1990-91	SPH Total 1990-91	HH Total 1990-91	DEAF Total 1990-91	SLI Total 1990-91	VH Total 1990-91	SED Total 1990-91
Bath County (009)	\$56,321	\$13,291	\$0	\$0	\$0	\$28,098	\$2,011	\$12,050
Danville City (108)	\$418,299	\$179,705	\$77,847	\$86,480	\$0	\$213,975	\$35,470	\$261,124
Giles County (035)	\$213,770	\$98,778	\$23,110	\$40	\$0	\$92,778	\$1,134	\$107,721
Hanover County (042)	\$252,203	\$0	\$0	\$35,253	\$21,000	\$309,939	\$35,900	\$453,483
Manassas City (143)	\$112,831	\$91,605	\$361	\$0	\$0	\$173,021	\$0	\$96,114
Norfolk City (118)	\$2,387,264	\$1,026,090	\$364,229	\$495,290	\$0	\$1,786,258	\$115,054	\$2,330,311
Petersburg City (120)	\$219,650	\$305,701	\$270,093	\$0	\$0	\$171,093	\$0	\$219,956
Wise County (096)	\$399,764	\$358,491	\$59,620	\$32,595	\$22,544	\$175,441	\$23,854	\$204,089
Average of Eight LEA's	\$507,488	\$259,208	\$99,408	\$81,207	\$5,443	\$368,825	\$26,678	\$460,606
State	\$33,735,360	\$17,157,567	\$10,059,470	\$6,936,749	\$2,206,407	\$38,833,259	\$3,404,808	\$55,660,132

a:\ddia3.wk3

LEA	OI Total 1990-91	OHI Total 1990-91	AUT Total 1990-91	SLD Total 1990-91	DB Total 1990-91	MH Total 1990-91	DD Total 1990-91	SUP. SER Total 1990-91
Bath County (009)	\$9,338	\$0	\$0	\$211,213	\$0	\$0	\$19,294	\$153,649
Danville City (108)	\$13,409	\$0	\$0	\$692,319	\$0	\$0	\$0	\$1,034,111
Glee County (035)	\$744	\$0	\$0	\$360,799	\$0	\$0	\$57,101	\$132,403
Harover County (042)	\$0	\$0	\$0	\$1,502,669	\$0	\$239,946	\$176,107	\$903,632
Manassas City (143)	\$0	\$0	\$43,198	\$1,049,867	\$0	\$36,017	\$0	\$1,549,800
Norfolk City (118)	\$384,768	\$72,505	\$0	\$3,174,859	\$90,747	\$806,022	\$1,120,396	\$3,959,300
Petersburg City (120)	\$0	\$0	\$34,911	\$411,193	\$0	\$0	\$34,001	\$979,483
Wise County (096)	\$4,826	\$15,616	\$3,264	\$785,601	\$0	\$8,844	\$107,263	\$363,239
Average of Eight LEA's	\$49,135	\$11,015	\$10,172	\$1,023,565	\$11,343	\$136,354	\$189,270	\$1,134,452
State	\$5,671,077	\$2,663,864	\$5,189,782	\$151,050,987	\$126,654	\$10,608,590	\$26,527,914	\$84,375,327

s:\dd\sls.nc.3

APPENDIX C

EXPENDITURE DIFFERENCES BY DISABILITY REPORTED BY EIGHT

GROUP A PARTICIPANTS

1987-88 TO 1990-91

LEA	EMR % Diff	EMR \$ Diff	TMR % Diff	TMR \$ Diff	SPH % Diff	SPH \$ Diff	HH % Diff
Bath County (009)	8.59%	\$4,456	-78.60%	(\$48,825)	0.00%	\$0	0.00%
Danville City (108)	33.53%	\$105,027	302.59%	\$135,068	71.24%	\$32,385	7.81%
Giles County (035)	24.14%	\$41,567	18.84%	\$15,517	-55.47%	(\$28,784)	-99.59%
Hanover County (042)	7.95%	\$18,574	-100.00%	(\$116,145)	-100.00%	(\$42,619)	4.69%
Manassas City (143)	2.23%	\$2,456	-3.39%	(\$3,216)	-96.91%	(\$11,327)	0.00%
Norfolk City (118)	73.66%	\$1,012,616	70.74%	\$425,109	3642289900.00%	\$364,229	23.82%
Petersburg City (120)	-36.73%	(\$127,523)	33.88%	\$77,369	56.39%	\$97,392	0.00%
Wise County (096)	17.82%	\$60,476	62.56%	\$137,959	-62.95%	(\$101,278)	325949900.00%
Average of Eight LEA's	16.40%	\$139,706	38.30%	\$77,855	455286214.04%	\$38,750	40743729.59%
State	16.56%	\$4,793,357	19.95%	\$2,853,163	28.72%	\$2,244,739	21.13%

btdidid2.wk3

LEA	HH \$ Diff	DEAF % Diff	DEAF \$ Diff	SLI % Diff	SLI \$ Diff	VH % Diff	VH \$ Diff
Bath County (009)	\$0	0.00%	\$0	- 7.33%	(\$2,221)	- 45.97%	(\$1,711)
Danville City (108)	\$6,268	0.00%	\$0	7723.58%	\$211,240	5450.86%	\$34,831
Giles County (035)	(\$9,661)	0.00%	\$0	60.99%	\$35,147	- 26.46%	(\$408)
Hanover County (042)	\$1,580	150.18%	\$12,606	58.28%	\$114,137	20.91%	\$6,208
Manassas City (143)	\$0	0.00%	\$0	8.06%	\$14,369	0.00%	\$0
Norfolk City (118)	\$95,273	- 100.00%	(\$33,654)	99.17%	\$889,419	78.39%	\$50,557
Petersburg City (120)	\$0	0.00%	\$0	5.72%	\$9,264	- 100.00%	(\$694)
Wise County (096)	\$32,595	- 53.74%	(\$26,185)	25.87%	\$36,053	47.02%	\$7,829
Average of Eight LEA's	\$15,757	- 0.44%	(\$5,904)	996.92%	\$163,426	678.09%	\$12,052
State	\$1,210,086	2.54%	\$54,635	48.83%	\$12,740,351	32.52%	\$835,440

bdidid12.wk.3

LEA	SED % Diff	SED \$ Diff	OI % Diff	OI \$ Diff	OHI % Diff	OHI \$ Diff	AUT % Diff
Bath County (009)	-17.09%	(\$2,484)	5265.52%	\$9,162	0.00%	\$0	0.00%
Danville City (108)	-2.84%	(\$7,626)	13408900.00%	\$13,409	-99.99%	(\$112)	0.00%
Giles County (035)	94.74%	\$52,406	-27.56%	(\$283)	0.00%	\$0	-100.00%
Hanover County (042)	2.51%	\$11,092	-100.00%	(\$1,500)	-100.00%	(\$1,500)	-100.00%
Manassas City (143)	-35.56%	(\$53,050)	0.00%	\$0	0.00%	\$0	431979900.00%
Norfolk City (118)	60.22%	\$875,905	-19.67%	(\$89,300)	-37.70%	(\$43,871)	-100.00%
Petersburg City (120)	-19.85%	(\$54,474)	0.00%	\$0	0.00%	\$0	349109900.00%
Wise County (096)	20.97%	\$35,385	-5.17%	(\$263)	156159900.00%	\$15,616	32639900.00%
Average of Eight LEA's	12.89%	\$107,144	18761876.64%	(\$8,597)	19519957.79%	(\$3,733)	101716175.00%
State	35.57%	\$14,603,817	23.74%	\$1,087,969	200.50%	\$1,777,395	1.21%

btdiidx2.wk3

LEA	AUT \$ Diff	SLD % Diff	SLD \$ Diff	DB % Diff	DB \$ Diff	MH % Diff	MH \$ Diff
Bath County (009)	\$0	33.83%	\$53,393	0.00%	\$0	-100.00%	(\$13,509)
Danville City (105)	\$0	36.29%	\$184,346	0.00%	\$0	0.00%	\$0
Giles County (035)	(\$973)	38.79%	\$100,831	0.00%	\$0	0.00%	\$0
Hanover County (042)	(\$2,000)	39.56%	\$425,947	-98.98%	(\$100)	468.04%	\$197,705
Manassas City (143)	\$43,198	12.10%	\$113,284	0.00%	\$0	360169900.00%	\$36,017
Norfolk City (118)	(\$39,161)	-26.69%	(\$1,155,841)	907469900.00%	\$90,747	-8.70%	(\$76,808)
Petersburg City (120)	\$34,911	27.17%	\$87,859	0.00%	\$0	0.00%	\$0
Wise County (096)	\$3,264	59.61%	\$293,387	0.00%	\$0	88439900.00%	\$8,844
Average of Eight LEA's	\$4,905	27.58%	\$12,901	113433725.00%	\$11,331	56076269.92%	\$19,031
State	\$61,915	29.70%	\$34,586,212	323.62%	\$96,758	27.34%	\$2,277,473

bdidid2.wk.3

LEA	DD % Diff	DD \$ Diff	SUP. SER % Diff	SUP. SER \$ Diff
Bath County (009)	165.61%	\$12,030	13.69%	\$18,506
Danville City (108)	0.00%	\$0	39.90%	\$294,939
Giles County (035)	71.98%	\$23,898	21.91%	\$23,794
Hanover County (042)	-6.09%	(\$11,416)	45.36%	\$281,980
Manassas City (143)	-100.00%	(\$165,878)	144.33%	\$915,487
Norfolk City (118)	20.67%	\$191,943	-5.50%	(\$230,445)
Petersburg City (120)	340009900.00%	\$34,001	407.18%	\$786,360
Wise County (096)	166.72%	\$67,048	-19.63%	(\$88,723)
Average of Eight LEA's	42501277.36%	\$18,953	80.91%	\$250,237
State	37.21%	\$7,194,715	14.88%	\$10,930,625

bd1dd12.wk3

bd1dd13.wk3

APPENDIX D

TOTAL COST EXPENDITURE ADJUSTMENTS

1987-88 & 1990-91

Total Cost Adjustments

Expenditure – Adjustments 1987– 88

13 Brunswick	\$8,899,517
14 Buchanan	\$24,220,745
18 Carroll	\$15,438,139
31 Floyd	\$8,315,825
52 Lee	\$17,488,105
63 New Kent	\$8,498,871
68 Northumberland	\$4,885,004
88 Spotsylvania	\$31,290,422
91 Sussex	\$8,553,252
92 Tazewell	\$30,559,289
109 Falls Church	\$7,978,774
123 Richmond City	\$149,920,524

Expenditure – Adjustments 1990– 91

13 Brunswick	\$12,291,899
14 Buchanan	\$33,327,976
18 Carroll	\$19,387,385
31 Floyd	\$8,239,890
52 Lee	\$24,374,615
63 New Kent	\$9,734,696
68 Northumberland	\$6,694,334
88 Spotsylvania	\$65,161,446
91 Sussex	\$6,958,909
92 Tazewell	\$39,655,248
109 Falls Church	\$13,900,616
123 Richmond City	\$209,952,646

1990– 91
to
1987– 88
Difference
Percent

State Total	\$3,966,353,618	\$6,123,106,426	\$2,156,752,608	54.38%
Adjusted Total	\$310,048,287	\$449,659,659	\$139,611,392	45.03%
Study Total	\$3,656,305,551	\$5,673,446,767	\$2,017,141,216	55.17%

APPENDIX E

TOTAL ENROLLMENT ADJUSTMENTS

ALL STUDENTS

1987-88 & 1990-91

Total Enrollment Adjustments

All Students

Enrollment – Adjustments 1987–88

13 Brunswick	2,632
14 Buchanan	7,257
18 Carroll	4,266
31 Floyd	1,891
52 Lee	4,924
63 New Kent	1,779
66 Northumberland	1,314
88 Spotsylvania	10,203
91 Sussex	1,651
92 Tazewell	9,425
109 Falls Church	1,146
123 Richmond City	25,736

Enrollment – Adjustments 1990–91

13 Brunswick	2,615
14 Buchanan	6,322
18 Carroll	4,053
31 Floyd	1,889
52 Lee	4,508
63 New Kent	1,843
66 Northumberland	1,367
88 Spotsylvania	12,180
91 Sussex	1,450
92 Tazewell	8,760
109 Falls Church	1,218
123 Richmond City	25,209

1990–91
b
1987–88

State Total	961,439	983,084	21,645	2.25%
Adjusted Total	72,224	71,412	(812)	–1.12%
Study Total	889,215	911,672	22,457	2.53%

distote.mkt3

APPENDIX F

TOTAL ENROLLMENT ADJUSTMENTS

SPECIAL EDUCATION STUDENTS

1987-88 & 1990-91

Total Enrollment Adjustments

Special Education Students

Enrollment – Adjustments 1987–88

13 Brunswick	303
14 Buchanan	723
18 Carroll	634
31 Floyd	286
52 Lee	614
63 New Kent	248
66 Northumberland	152
88 Spotsylvania	1,025
91 Sussex	153
92 Tazewell	752
109 Falls Church	201
123 Richmond City	3,214

Enrollment – Adjustments 1990–91

13 Brunswick	276
14 Buchanan	704
18 Carroll	650
31 Floyd	310
52 Lee	556
63 New Kent	282
66 Northumberland	154
88 Spotsylvania	1,200
91 Sussex	53
92 Tazewell	795
109 Falls Church	212
123 Richmond City	3,272

1990–91	
to	
1987–88	
Difference	Percent

State Total	103,587	110,734	7,147	6.90%
Adjusted Total	8,305	8,464	159	1.91%
Study Total	95,282	102,270	6,988	7.33%

distot.m3

APPENDIX G
CASE STUDY DATA
INCLUSIVE SCHOOL DIVISION
1987-88

	AUT	SLD	DB	MH	DD	TOTALS
(SP ED)						
Admin	\$0	\$20,266	\$0	\$479	\$638	\$47,873
Inst	\$0	\$220,348	\$0	\$419	\$24,903	\$564,823
Attend/Hlth	\$0	\$8,068	\$0	\$191	\$254	\$19,058
(Sp Ed)	\$0	\$248,682	\$0	\$1,088	\$25,795	\$631,753
(Reg Ed)						
Admin	\$0	\$4,542	\$0	\$91	\$104	\$9,164
Inst	\$0	\$169,351	\$0	\$3,378	\$3,882	\$341,701
Attend/Hlth	\$0	\$1,065	\$0	\$21	\$24	\$2,149
(Reg Ed)	\$0	\$174,957	\$0	\$3,490	\$4,010	\$353,013
Total Discrete Costs	\$0	\$423,639	\$0	\$4,578	\$29,806	\$984,767
Main/Operation						
(Reg Ed)						
Pupil Transportation	\$0	\$23,514	\$0	\$555	\$741	\$55,546
School Food Service	\$0	\$10,381	\$0	\$245	\$327	\$24,522
Oper/Main	\$0	\$45,886	\$0	\$1,084	\$1,445	\$108,391
Fixed Charges	\$0	\$88,951	\$0	\$2,125	\$2,833	\$212,483
Summer School	\$0	\$903	\$0	\$21	\$28	\$2,133
Adult Ed	\$0	\$1,174	\$0	\$28	\$37	\$2,773
Other Educ Programs	\$0	\$1,245	\$0	\$29	\$39	\$2,940
Capital Outlay	\$0	\$2,623	\$0	\$62	\$83	\$6,197
Dep/Build	\$0	\$178,200	\$0	\$4,209	\$5,613	\$420,945
Dep/Vehicles	\$0	\$2,308	\$0	\$55	\$73	\$5,454
Debt Service	\$0	\$17,251	\$0	\$408	\$543	\$40,750
(Sp Ed)						
Other Educ Programs	\$0	\$373,437	\$0	\$8,821	\$11,762	\$882,133
Capital Outlay	\$0	\$10,897	\$0	\$257	\$343	\$25,740
Dep/Vehicles	\$0	\$1,719	\$0	\$41	\$54	\$4,061
Debt Service	\$0	\$12,616	\$0	\$298	\$397	\$29,801
Total	\$0	\$809,691	\$0	\$13,698	\$41,965	\$1,896,701
Per Pupil	\$0	\$6,376	\$0	\$4,566	\$10,491	\$21,423
Total (90-91 Value)	\$0	\$936,732	\$0	\$15,847	\$48,549	\$2,194,294
Per Pupil (90-91 Value)	\$0	\$7,376	\$0	\$5,282	\$12,137	\$24,795

APPENDIX H
CASE STUDY DATA
INCLUSIVE SCHOOL DIVISION
1990-91

Discrete Costs (SP ED)	EMR	TMR	S&P	HH	D	SLI	VI	SED	OI	OHI
SP ED Dist/Student	\$35,615	\$7,974	\$1,063	\$532	\$0	\$23,921	\$1,063	\$11,694	\$532	\$1,596
SP ED Dist/Teacher	\$59,365	\$18,068	\$8,604	\$0	\$0	\$25,811	\$0	\$12,905	\$0	\$0
SP ED Dist/Direct	\$185,296	\$74,478	\$20,211	\$40	\$0	\$86,980	\$1,134	\$56,766	\$0	\$0
62230	\$4,812	\$1,077	\$144	\$72	\$0	\$3,232	\$144	\$1,580	\$72	\$215
(Reg Ed)	\$285,088	\$101,596	\$30,021	\$643	\$0	\$139,943	\$2,341	\$82,945	\$603	\$1,810
20 Ele	\$43,839	\$832	\$0	\$1,431	\$0	\$71,800	\$1,598	\$19,356	\$1,639	\$3,079
30 Sec	\$40,973	\$778	\$0	\$1,338	\$0	\$67,107	\$1,493	\$18,091	\$1,532	\$2,878
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Discrete Costs	\$84,812	\$1,610	\$0	\$2,769	\$0	\$138,907	\$3,091	\$37,447	\$3,172	\$5,957
	\$369,900	\$103,206	\$30,021	\$3,413	\$0	\$278,850	\$5,432	\$120,393	\$3,775	\$7,767
Admin/Inst	\$230,643	\$51,637	\$6,885	\$3,442	\$0	\$154,910	\$6,885	\$75,734	\$3,442	\$10,327
Attend/Health	\$939	\$210	\$28	\$14	\$0	\$630	\$28	\$308	\$14	\$42
Transport	\$19,131	\$4,283	\$571	\$286	\$0	\$12,849	\$571	\$6,282	\$286	\$857
Operation/Main	\$35,057	\$7,849	\$1,046	\$523	\$0	\$23,546	\$1,046	\$11,511	\$523	\$1,570
School Food	\$6,761	\$1,514	\$202	\$101	\$0	\$4,541	\$202	\$2,220	\$101	\$303
Summer	\$1,115	\$250	\$33	\$17	\$0	\$749	\$33	\$366	\$17	\$50
Adult	\$1,417	\$317	\$42	\$21	\$0	\$952	\$42	\$465	\$21	\$63
Other Ed Programs	\$1,417	\$317	\$42	\$21	\$0	\$952	\$42	\$465	\$21	\$63
Dep/Build	\$1,854	\$415	\$55	\$28	\$0	\$1,246	\$55	\$609	\$28	\$83
Dep/Vehicles	\$46	\$10	\$1	\$1	\$0	\$31	\$1	\$15	\$1	\$2
Debt Service/Facilities	\$10,357	\$2,319	\$309	\$155	\$0	\$6,956	\$309	\$3,401	\$155	\$464
	\$308,737	\$69,120	\$9,216	\$4,608	\$0	\$207,361	\$9,216	\$101,376	\$4,608	\$13,824
Totals	\$678,638	\$172,327	\$39,237	\$8,021	\$0	\$486,211	\$14,648	\$221,769	\$8,383	\$21,591
Per Pupil	\$10,129	\$11,488	\$19,619	\$8,021	\$0	\$4,086	\$7,324	\$10,080	\$8,383	\$7,197

Discrete Costs (SP ED)	AUT	SLD	DB	MH	DD	TOTALS
SP ED Dist/Student	\$0	\$64,851	\$0	\$0	\$3,721	\$152,560
SP ED Dist/Teacher	\$0	\$70,550	\$0	\$0	\$8,604	\$203,906
SP ED Dist/Direct	\$0	\$262,836				\$687,740
62230	\$0	\$8,762	\$0	\$0	\$503	\$20,613
	\$0	\$406,999	\$0	\$0	\$12,827	\$1,064,819
(Reg Ed)						
20 Ele	\$0	\$148,879	\$0	\$0	\$6,125	\$296,378
30 Sec	\$0	\$137,091	\$0	\$0	\$5,724	\$277,006
Other	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$283,770	\$0	\$0	\$11,849	\$573,384
Total Discrete Costs	\$0	\$690,769	\$0	\$0	\$24,677	\$1,638,203
Admin/Inst	\$0	\$419,977	\$0	\$0	\$24,097	\$987,978
Attend/Health	\$0	\$1,709	\$0	\$0	\$98	\$4,021
Transport	\$0	\$34,836	\$0	\$0	\$1,999	\$81,950
Operation/Main	\$0	\$63,836	\$0	\$0	\$3,663	\$150,171
School Food	\$0	\$12,310	\$0	\$0	\$706	\$28,959
Summer	\$0	\$2,030	\$0	\$0	\$116	\$4,776
Adult	\$0	\$2,580	\$0	\$0	\$148	\$6,070
Other Ed Progra ms	\$0	\$2,580	\$0	\$0	\$148	\$6,070
Dep/Build	\$0	\$3,377	\$0	\$0	\$194	\$7,944
Dep/Vehicles	\$0	\$84	\$0	\$0	\$5	\$199
Debt Service/facilities	\$0	\$18,858	\$0	\$0	\$1,082	\$44,363
Facilities						
	\$0	\$562,179	\$0	\$0	\$32,256	\$1,322,502
	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$0	\$1,252,947	\$0	\$0	\$56,933	\$2,960,705
Per Pupil	\$0	\$10,270	\$0	\$0	\$8,133	

APPENDIX I
CASE STUDY DATA
NON-INCLUSIVE SCHOOL DIVISION
1987-88

Discrete Costs		EMR	TMR	S&P	HH	D	SLI	VI	SED	OI	OHI
(SP Ed)	Admin	\$5,249	\$762	\$423	\$762	\$85	\$13,886		\$6,350	\$762	\$254
	Inst	\$123,636	\$24,312	\$30,571	\$24,262	\$12,181	\$71,961		\$24,701	\$24,062	\$23,962
	Attend/Hlth	\$8,204	\$1,191	\$662	\$1,191	\$132	\$21,702		\$9,925	\$1,191	\$397
	(Sp Ed)										
		\$137,090	\$26,265	\$31,656	\$26,215	\$12,398	\$107,549		\$220,976	\$26,015	\$24,613
(Reg Ed)	Admin	\$709	\$14	\$2	\$295	\$14	\$5,984		\$1,399	\$234	\$63
	Inst	\$34,732	\$695	\$110	\$14,449	\$671	\$293,317		\$68,592	\$11,482	\$3,107
	Attend/Hlth	\$345	\$7	\$1	\$144	\$7	\$2,914		\$681	\$114	\$31
Total Discrete Costs	(Reg Ed)										
		\$35,785	\$716	\$114	\$14,887	\$691	\$302,215		\$70,873	\$11,830	\$3,201
		\$172,875	\$26,981	\$31,770	\$41,102	\$13,089	\$409,764		\$291,649	\$37,845	\$27,814
Main/Operation											
(Reg Ed)											
Other Educ Programs	Pupil Transportation	\$10,467	\$1,519	\$844	\$1,519	\$169	\$27,687		\$12,662	\$1,519	\$506
	School Food Service	\$11,734	\$1,703	\$946	\$1,703	\$189	\$31,039		\$14,195	\$1,703	\$568
	Oper/Main	\$23,195	\$3,367	\$1,871	\$3,367	\$374	\$81,356		\$28,059	\$3,367	\$1,122
	Fixed Charges	\$32,368	\$4,699	\$2,610	\$4,699	\$522	\$85,618		\$39,155	\$4,699	\$1,566
	Summer School	\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0
	Adult Ed	\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0
	Other Educ Programs	\$1,291	\$187	\$104	\$187	\$21	\$3,416		\$1,562	\$187	\$62
	Capital Outlay	\$4,854	\$705	\$391	\$705	\$78	\$12,838		\$5,871	\$705	\$235
	Dep/Build	\$11,363	\$1,649	\$916	\$1,649	\$183	\$30,056		\$13,745	\$1,649	\$550
	Dep/Vehicles	\$284	\$41	\$23	\$41	\$5	\$751		\$344	\$41	\$14
	Debt Service	\$8,807	\$1,278	\$710	\$1,278	\$142	\$23,295		\$10,653	\$1,278	\$426
	Refund/Revenue										
		\$104,363	\$15,149	\$8,416	\$15,149	\$1,683	\$276,057		\$126,246	\$15,149	\$5,050
(Sp Ed)	Other Educ Programs	\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0
	Capital Outlay	\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0
		\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0
Total		\$277,238	\$42,130	\$40,186	\$56,252	\$14,773	\$685,821		\$417,894	\$52,995	\$32,864
Per Pupil		\$4,472	\$4,681	\$8,037	\$6,250	\$14,773	\$4,182		\$5,572	\$5,888	\$10,955
Total (90-91 Value)		\$320,737	\$48,741	\$46,491	\$65,078	\$17,090	\$793,426		\$483,462	\$61,310	\$38,020
Per Pupil (90-91 Value)		\$5,173	\$5,416	\$9,298	\$7,231	\$17,090	\$4,838		\$6,446	\$6,812	\$12,673

casew87

Discrete Costs		AUT	SLD	DB	MH	DD	TOTALS
(SP Ed)	Admin	\$85	\$22,607	\$0	\$339	\$1,101	\$52,664
	Inst	\$24,062	\$346,724	\$0	\$23,937	\$55,583	\$989,953
	Attend/Hlth	\$132	\$35,332	\$0	\$529	\$1,720	\$82,309
	(Sp Ed)	\$24,279	\$404,662	\$0	\$24,805	\$58,404	\$1,124,926
(Reg Ed)	Admin	\$0	\$5,928	\$0	\$53	\$162	\$14,860
	Inst	\$9	\$290,649	\$0	\$2,616	\$7,960	\$728,388
	Attend/Hlth	\$0	\$2,887	\$0	\$26	\$79	\$7,236
	(Reg Ed)	\$9	\$299,466	\$0	\$2,695	\$8,201	\$750,484
	Total Discrete Costs	\$24,288	\$704,128	\$0	\$27,500	\$66,605	\$1,875,410
Main/Operation (Reg Ed)							
Pupil Transportation		\$169	\$45,076	\$0	\$675	\$2,195	\$105,008
School Food Service		\$189	\$50,534	\$0	\$757	\$2,460	\$117,723
Oper/Main		\$374	\$99,890	\$0	\$1,496	\$4,864	\$232,703
Fixed Charges		\$522	\$139,390	\$0	\$2,088	\$6,787	\$324,721
Summer School		\$0	\$0	\$0	\$0	\$0	\$0
Adult Ed		\$0	\$0	\$0	\$0	\$0	\$0
Other Educ Programs		\$21	\$5,561	\$0	\$83	\$271	\$12,954
Capital Outlay		\$78	\$20,902	\$0	\$313	\$1,018	\$48,692
Dep/Buid		\$183	\$48,933	\$0	\$733	\$2,383	\$113,995
Dep/Vehicles		\$5	\$1,223	\$0	\$18	\$60	\$2,850
Debt Service		\$142	\$37,926	\$0	\$568	\$1,847	\$88,352
Refund/Revenue							
		\$1,683	\$449,435	\$0	\$6,733	\$21,883	\$1,046,998
							\$1,046,998
(Sp Ed)							
Other Educ Programs		\$0	\$0	\$0	\$0	\$0	\$0
Capital Outlay		\$0	\$0	\$0	\$0	\$0	\$0
		\$0	\$0	\$0	\$0	\$0	\$0
Total		\$25,972	\$1,153,563	\$0	\$34,233	\$88,488	\$2,922,409
Per Pupil		\$25,972	\$4,320	\$0	\$8,558	\$6,807	\$3,380,935
Total (90-91 Value)		\$30,047	\$1,334,557	\$0	\$39,604	\$102,372	\$3,380,935
Per Pupil (90-91 Value)		\$30,047	\$4,998	\$0	\$9,901	\$7,875	

casew87

APPENDIX J
CASE STUDY DATA
NON-INCLUSIVE SCHOOL DIVISION
1990-91

Discrete Costs (SPED)	EMR	TMR	S&P	HH	D	SLI	SED	OI	OHI	AUT
SPED Dist/Student	\$21,155	\$5,567	\$2,784	\$3,340	\$1,113	\$84,065	\$33,403	\$5,567	\$1,670	\$2,227
SPED Dis/Teacher	\$24,167	\$7,355	\$3,502	\$0	\$0	\$17,512	\$21,015	\$3,502	\$3,502	\$3,502
SPED Dist/Direct	\$164,991	\$102,273	\$75,974	\$19,110	\$19,594	\$85,981	\$214,968	\$79,397	\$0	\$103,821
(Reg Ed)	\$210,313	\$115,195	\$82,260	\$22,450	\$20,707	\$187,558	\$289,386	\$88,467	\$5,173	\$109,550
20 Ele	\$12,615	\$458	\$65	\$5,709	\$795	\$160,047	\$32,519	\$7,561	\$1,841	\$22
30 Sec	\$11,365	\$412	\$59	\$5,143	\$716	\$144,186	\$29,297	\$6,811	\$1,659	\$20
Other	\$774	\$28	\$4	\$350	\$49	\$9,822	\$1,996	\$464	\$113	\$1
Total Discrete Costs	\$24,754	\$898	\$128	\$11,202	\$1,561	\$314,055	\$63,811	\$14,836	\$3,613	\$43
	\$235,068	\$116,093	\$82,388	\$33,652	\$22,268	\$501,613	\$333,197	\$103,303	\$8,785	\$109,593
Admin/Inst	\$84,811	\$22,319	\$11,159	\$13,391	\$4,464	\$337,010	\$133,911	\$22,319	\$6,696	\$8,927
Attend/Health	\$973	\$256	\$128	\$154	\$51	\$3,865	\$1,536	\$256	\$77	\$102
Transport	\$7,612	\$2,003	\$1,002	\$1,202	\$401	\$30,246	\$12,018	\$2,003	\$601	\$801
Operation/Main	\$11,483	\$3,022	\$1,511	\$1,813	\$604	\$45,631	\$18,131	\$3,022	\$907	\$1,209
School Food	\$6,569	\$1,729	\$864	\$1,037	\$346	\$26,104	\$10,372	\$1,729	\$519	\$691
Dep/Build	\$613	\$161	\$81	\$97	\$32	\$2,437	\$968	\$161	\$48	\$65
Dep/Vehicles	\$15	\$4	\$2	\$2	\$1	\$61	\$24	\$4	\$1	\$2
Debt Service/Facilities	\$36,945	\$9,722	\$4,861	\$5,833	\$1,944	\$146,808	\$58,334	\$9,722	\$2,917	\$3,869
	\$149,021	\$39,216	\$19,608	\$23,530	\$7,843	\$592,162	\$235,296	\$39,216	\$11,765	\$15,686
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$384,089	\$155,309	\$101,996	\$57,182	\$30,111	\$1,093,775	\$568,493	\$142,519	\$20,550	\$125,279
Per Pupil casew90	\$10,108	\$15,531	\$20,399	\$9,530	\$15,056	\$7,244	\$9,475	\$14,252	\$6,850	\$31,320

Discrete Costs (SP ED)	SLD	DB	MH	DD	TOTALS
SP ED Dist/Student	\$175,367	\$0	\$3,897	\$7,237	\$351,847
SP ED Dist/Teacher	\$42,029	\$0	\$0	\$7,005	\$133,093
SP ED Dist/Direct	\$689,132	\$0	\$90,148	\$85,687	\$1,751,115
	\$906,528	\$0	\$94,045	\$99,929	\$2,236,055
(Reg Ed)					
20 Ele	\$203,210	\$0	\$7,626	\$7,445	\$446,928
30 Sec	\$183,071	\$0	\$6,870	\$6,708	\$402,637
Other	\$12,471	\$0	\$468	\$457	\$27,428
	\$398,752	\$0	\$14,964	\$14,610	\$876,994
	\$1,305,280	\$0	\$109,009	\$114,539	\$3,113,049
Total Discrete Costs					
Admin/Inst	\$703,035	\$0	\$15,623	\$29,014	\$1,410,533
Attend/Health	\$8,062	\$0	\$179	\$333	\$16,176
Transport	\$63,096	\$0	\$1,402	\$2,604	\$126,593
Operation/Main	\$95,190	\$0	\$2,115	\$3,928	\$190,985
School Food	\$54,455	\$0	\$1,210	\$2,247	\$109,255
Dep/Build	\$5,083	\$0	\$113	\$210	\$10,199
Dep/Vehicles	\$127	\$0	\$3	\$5	\$255
Debt Service/Facilities	\$306,255	\$0	\$6,806	\$12,639	\$614,455
	\$1,235,304	\$0	\$27,451	\$50,981	\$2,478,452
	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0
Totals	\$2,540,584	\$0	\$136,460	\$165,520	\$5,591,500
Per Pupil casew90	\$8,065	\$0	\$19,494	\$12,732	

APPENDIX K

PER PUPIL EXPENDITURES REPORTED BY EIGHT

GROUP A PARTICIPANTS

REGULAR AND SPECIAL EDUCATION

ELEMENTARY

1987-88 & 1990-91

Appendix K

LEA	Special Educ. Per Pupil Cost *1987-88	Special Educ. Per Pupil Cost 1990-91	Special Educ. Percentage Difference	Regular Educ. Per Pupil Cost *1987-88	Regular Educ. Per Pupil Cost 1990-91	Regular Educ. Percentage Difference	Difference in Percentages Special Educ./Regular Educ.
Bath County	\$6,108	\$6,246	2.25%	\$4,923	\$5,566	13.07%	10.82%
Darville City	\$4,244	\$4,793	12.95%	\$3,916	\$3,861	-1.41%	-14.36%
Giles County	\$6,747	\$4,490	-33.45%	\$3,142	\$3,468	10.37%	43.82%
Hanover County	\$3,504	\$4,301	22.74%	\$3,366	\$3,665	8.23%	-14.50%
Manassas City	\$5,812	\$4,252	-26.84%	\$4,072	\$3,832	-5.90%	20.94%
Norfolk City	\$5,110	\$9,315	82.29%	\$4,795	\$4,109	-14.31%	-96.60%
Petersburg	\$6,214	\$8,977	9.29%	\$4,414	\$4,569	3.52%	-5.77%
Wise County	\$4,333	\$4,635	6.98%	\$3,212	\$3,459	7.70%	0.72%
Mean of 8	\$5,509	\$5,876	9.52%	\$3,982	\$4,066	2.66%	-6.87%

*Expressed in 1990-91 Values

4 is for me 4, we 3

APPENDIX L

PER PUPIL EXPENDITURES REPORTED BY EIGHT

GROUP A PARTICIPANTS

REGULAR AND SPECIAL EDUCATION

SECONDARY

1987-88 & 1990-91

Appendix L

LEA	Special Educ. Per Pupil Cost *1987-88	Special Educ. Per Pupil Cost 1990-91	Special Educ. Percentage Difference	Regular Educ. Per Pupil Cost *1987-88	Regular Educ. Per Pupil Cost 1990-91	Regular Educ. Percentage Difference	Difference in Percentages Special Educ./Regular Educ.
Bath County	\$6,660	\$9,711	45.80%	\$6,510	\$8,558	31.43%	-14.37%
Danville City	\$4,215	\$6,834	57.41%	\$3,913	\$4,233	8.19%	-49.22%
Giles County	\$6,261	\$4,837	-22.75%	\$3,718	\$4,800	29.09%	51.84%
Harrover County	\$4,284	\$5,257	22.71%	\$4,138	\$4,479	8.23%	-14.48%
Martinsburg City	\$6,766	\$5,964	-11.85%	\$5,440	\$3,787	-30.36%	-18.54%
Norfolk City	\$5,110	\$8,775	71.72%	\$4,795	\$5,762	20.16%	-51.56%
Petersburg	\$6,371	\$10,539	25.89%	\$4,470	\$4,437	-0.74%	-26.64%
Wise County	\$5,625	\$6,127	8.93%	\$4,532	\$4,641	2.41%	-6.51%
Mean of 8	\$5,911	\$7,231	24.73%	\$4,889	\$5,087	8.55%	-16.19%

*Expressed in 1990-91 Values

ds for m4.wk3

APPENDIX M
SUMMARY OF ANALYSIS

Appendix M

Summary of Analysis

School Division Groups	Research Question	Summary of Analysis
Group A - Eight inclusive school divisions	Did the reported per pupil cost of special education show a significant change when compared to regular education per pupil cost over the three-year period using standard reporting data to establish per pupil costs?	Elementary: No significance within the group Elementary: 7 of 8; No significance within divisions Secondary: No significance within the group Secondary: No significance with divisions
Group A - Eight inclusive school divisions	Did the percent of special education cost, compared to total education cost change significantly over a three-year period of time?	No significance within the group Significance within all divisions
Group B - Case study school divisions; one inclusive and one non-inclusive	Was there a significant difference in change from 1987-88 to 1990-91 between the cost of inclusive special education and special education without an inclusive model for the identification group of disabled students, when using a more precise method for determining special education costs?	No significance within the group No significance within disabilities
Group B - Case study school divisions; one inclusive and one non-inclusive	Is there a significant difference in change when using standard reporting expenditure data from 1987-88 to 1990-91 between the percentage of special education cost represented in total expenditures when comparing a school division which utilized an inclusion model to a division which did not utilize an inclusion model?	No significance within the group Significance within the divisions
Group B - Case study school divisions; one inclusive and one non-inclusive	Was there a significant change in the cost of inclusive special education for a school division implementing an inclusive model of special education, when comparing the standard state reporting data with the cost determined by a more precise method?	No significance within the group Significance found in EMR, TMR, & DD; all other disability areas had no significance
Group C - All Virginia School Divisions	Statewide, did the percentage of special education cost compared to total education cost change significantly from 1987-88 to 1990-91	Significance found

APPENDIX N
HIGHLIGHTS OF FINDINGS

Appendix N

Highlights of Findings

School Division Groups		Research Question	Highlights of Findings
Group A - Eight inclusive school divisions	Did the reported per pupil cost of special education show a significant change when compared to regular education per pupil cost over the three-year period using standard reporting data to establish per pupil costs?	Elementary: Two of eight showed a reduction in special education per pupil costs; Three of eight showed a reduction in regular education costs (one of the three was the same) Secondary: Two of eight showed a reduction in special education per pupil costs; Two of eight showed a reduction in regular education costs (one of the two was the same)	
Group A - Eight inclusive school divisions	Did the percent of special education cost, compared to total education cost change significantly over a three-year period of time?	Six of the eight had reductions in the percentage of expenditures represented by special education Five of the eight had reductions in the percentage of special education students represented by total enrollment	
Group B - Case study school divisions; one inclusive and one non-inclusive	Was there a significant difference in change from 1987-88 to 1990-91 between the cost of inclusive special education and special education without an inclusive model for the identification group of disabled students, when using a more precise method for determining special education costs?	Inclusive showed an increase in expenditures in TMR and EMR and showed a reduction in SPH Non-inclusive showed an increase in all three areas	
Group B - Case study school divisions; one inclusive and one non-inclusive	Is there a significant difference in change when using standard reporting expenditure data from 1987-88 to 1990-91 between the percentage of special education cost represented in total expenditures when comparing a school division which utilized an inclusion model to a division which did not utilize an inclusion model?	Inclusive showed an increase Non-inclusive showed a reduction	
Group B - Case study school divisions; one inclusive and one non-inclusive	Was there a significant change in the cost of inclusive special education for a school division implementing an inclusive model of special education, when comparing the standard state reporting data with the cost determined by a more precise method?	Major reduction in SPH	
Group C - All Virginia School Divisions	Statewide, did the percentage of special education cost compared to total education cost change significantly from 1987-88 to 1990-91	Percent for expenditures reduced while the percent of identified special education students increased	

APPENDIX O
GROUP A
and
STATE-WIDE ENROLLMENT DATA

Enrollment Reported by Eight Virginia Systems Change Participants and State Totals 1987-88 & 1990-91

LEA	Special Educ. Enrollment 1987-88	Total LEA Enrollment 1987-88	Special Educ. % of Total 1987-88	Special Educ. Enrollment 1990-91	Total LEA Enrollment 1990-91	Special Educ. % of Total 1990-91	Difference in Percentages of Special Educ. Pre/Post Inclusion
Bath County	111	876	12.67%	90	782	11.51%	-1.16%
Danville City	608	6,901	8.82%	667	8,162	8.17%	-0.65%
Giles County	300	2,922	10.27%	283	2,633	10.75%	0.48%
Hanover County	963	10,209	9.43%	987	11,298	8.74%	-0.70%
Manassas City	562	4,210	13.35%	556	4,733	11.75%	-1.60%
Norfolk City	3,766	34,291	10.98%	3,811	34,064	11.19%	0.21%
Petersburg City	605	5,888	10.28%	478	5,673	8.43%	-1.85%
Wise County	886	9,015	9.83%	887	8,523	10.41%	0.58%
Average of the Eight LEA's	975	9,289	10.70%	970	9,484	10.23%	-0.48%
State Totals	95,282	888,215	10.72%	102,270	911,672	11.22%	0.50%

ds.cw.net3

VITA
Robert C. McCracken

Education: Virginia Polytechnic Institute and State University, Ed.D.,
Educational Administration, 1994

Virginia Polytechnic Institute and State University,
C.A.G.S., Educational Administration, 1993

Virginia Polytechnic Institute and State University, M.A.,
Educational Administration, 1976

California State College, B.S., Elementary Education, 1973

Experience:
1989-94

Superintendent
Giles County Public Schools
Pearisburg, VA

1985-89

Administrative Assistant-Special Education
Stafford County Public Schools
Stafford County, VA

1982-85

Principal-Sinclair Elementary & Stonewall Middle Schools
Prince William County
Manassas, VA

1978-82

Instructional Materials Supervisor
Prince William County
Manassas, VA

1973-78

Teacher-Neasbco Elementary School
Prince William County
Manassas, VA

Background:

Born June 2, 1951
Spangler, PA

Married-Patricia Lott McCracken
Children-Rebecca Cristine, Seth Robert, & Todd Patrick

