


1997

## Comparison of the performance of students with learning disabilities in inclusive classrooms and in pull-out special education programs

Patricia Jordan Rea  
*College of William & Mary - School of Education*

Follow this and additional works at: <https://scholarworks.wm.edu/etd>

 Part of the [Curriculum and Instruction Commons](#), [Secondary Education Commons](#), and the [Special Education and Teaching Commons](#)

---

### Recommended Citation

Rea, Patricia Jordan, "Comparison of the performance of students with learning disabilities in inclusive classrooms and in pull-out special education programs" (1997). *Dissertations, Theses, and Masters Projects*. Paper 1539618499.

<https://dx.doi.org/doi:10.25774/w4-pax4-3e56>

This Dissertation is brought to you for free and open access by the Theses, Dissertations, & Master Projects at W&M ScholarWorks. It has been accepted for inclusion in Dissertations, Theses, and Masters Projects by an authorized administrator of W&M ScholarWorks. For more information, please contact [scholarworks@wm.edu](mailto:scholarworks@wm.edu).

## **INFORMATION TO USERS**

**This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.**

**The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.**

**In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.**

**Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.**

**Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.**

# **UMI**

**A Bell & Howell Information Company  
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA  
313/761-4700 800/521-0600**



**Comparison of the Performance of Students with Learning Disabilities  
in Inclusive Classrooms and in Pull-Out Special Education Programs**

**A Dissertation**

**Presented to**

**The Faculty of the School of Education**

**The College of William and Mary**

**In Partial Fulfillment**

**Of the Requirements for the Degree**

**Doctor of Education**

**by**

**Patricia Jordan Rea**

**November 1997**

**UMI Number: 9815249**

**Copyright 1998 by  
Rea, Patricia Jordan**

**All rights reserved.**

---

**UMI Microform 9815249  
Copyright 1998, by UMI Company. All rights reserved.**

**This microform edition is protected against unauthorized  
copying under Title 17, United States Code.**

---


**UMI**  
**300 North Zeeb Road**  
**Ann Arbor, MI 48103**

PERFORMANCE OF STUDENTS WITH LEARNING DISABILITIES IN  
INCLUSIVE CLASSROOMS AND IN PULL-OUT SPECIAL EDUCATION  
PROGRAMS

By

Patricia Jordan Rea

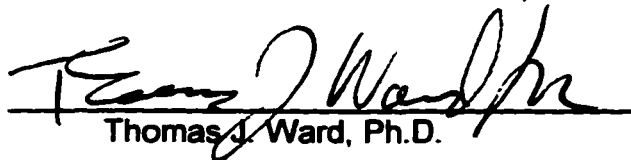
Approved November 1997 by



Virginia L. McLaughlin, Ed.D.  
Doctoral Committee Chair



Christine S. Walther-Thomas, Ph.D.



Thomas J. Ward, Ph.D.

**Comparison of the Performance of Students with Learning Disabilities  
in Inclusive Classrooms and in Pull-Out Special Education Programs**

**ABSTRACT**

**The purpose of this study was to investigate the relationship between placement in inclusive and pull-out special education programs and academic and behavior outcomes for students with learning disabilities. Demographic data such as age, gender, ethnicity, socio-economic status, IQ, education level of the mother, years receiving special education services, and years in the school district established comparability of two groups of middle school students. Qualitative and quantitative methods were used to describe two schools and their special education service delivery models, one inclusive and the other pull-out. IEP goals and objectives, classroom accommodations, and teacher collaboration were examined to provide functional definitions of the models. Results indicated that the two programs differed significantly. Further, students with learning disabilities served in inclusive classrooms earned higher grades, achieved higher or comparable scores on standardized tests, committed no more behavioral infractions, and attended more days of schools than students with learning disabilities served in pull-out special education programs.**

## TABLE OF CONTENTS

<b>ABSTRACT</b>	<b>i</b>
<b>TABLE OF CONTENTS</b>	<b>ii</b>
<b>LIST OF TABLES</b>	<b>v</b>
<b>CHAPTER I: INTRODUCTION</b>	<b>1</b>
<b>Justification for the Study</b>	<b>1</b>
<b>Theoretical Rationale</b>	<b>3</b>
<b>Statement of the Problem</b>	<b>4</b>
<b>Definition of Terms</b>	<b>6</b>
<b>Research Hypotheses</b>	<b>13</b>
<b>Limitations of the Study</b>	<b>15</b>
<b>Ethical Considerations</b>	<b>17</b>
<b>CHAPTER II: REVIEW OF LITERATURE</b>	<b>19</b>
<b>Legal and Regulatory Framework</b>	<b>19</b>
<b>Summary of Relevant Research</b>	<b>22</b>
<b>Special Education Service Delivery Models</b>	<b>22</b>
<b>Special Education Outcome Data</b>	<b>24</b>
<b>The Evolution of the Inclusive Education Movement</b>	<b>28</b>
<b>Outcome Data on Inclusive Education</b>	<b>30</b>
<b>Case Law Refining Least Restrictive Environment</b>	<b>37</b>
<b>Summary</b>	<b>44</b>
<b>CHAPTER III: METHODOLOGY</b>	<b>45</b>
<b>Population and Sample</b>	<b>45</b>



<b>Research Design</b>	<b>47</b>
<b>Student Data</b>	<b>48</b>
<b>School District Description</b>	<b>50</b>
<b>Program Descriptions</b>	<b>52</b>
<b>Outcomes Measures of Student Performance</b>	<b>62</b>
<b>Descriptions of Standardized Tests</b>	<b>62</b>
<b>Course Grades</b>	<b>73</b>
<b>Student Behavioral Infractions</b>	<b>73</b>
<b>School Attendance</b>	<b>74</b>
<b>Specific Null Hypotheses</b>	<b>74</b>
<b>Statistical Analyses</b>	<b>75</b>
<b>Summary of Methodology</b>	<b>76</b>
<b>CHAPTER IV: FINDINGS AND RESULTS</b>	<b>77</b>
<b>Findings and Results</b>	<b>77</b>
<b>Hypothesis 1</b>	<b>77</b>
<b>Hypothesis 2</b>	<b>79</b>
<b>Hypothesis 3</b>	<b>83</b>
<b>Hypothesis 4</b>	<b>88</b>
<b>Hypothesis 5</b>	<b>89</b>
<b>Summary</b>	<b>89</b>
<b>CHAPTER V: CONCLUSIONS, SUMMARY, AND RECOMMENDATIONS</b>	<b>91</b>
<b>Findings and Conclusions</b>	<b>92</b>

<b>Summary of Findings</b>	<b>94</b>
<b>Implications for Further Research</b>	<b>95</b>
<b>Implications for Practice</b>	<b>99</b>
<b>Summary</b>	<b>101</b>
<b>REFERENCES</b>	<b>102</b>
<b>TABLES</b>	
<b>APPENDICES</b>	

## **List of Tables**

<b>Table 1</b>	<b>Summary of Demographic Data on Student Participants</b>
<b>Table 2</b>	<b>School Staffing Patterns</b>
<b>Table 3</b>	<b>Special Education Teacher Characteristics</b>
<b>Table 4</b>	<b>General Education Teacher Characteristics</b>
<b>Table 5</b>	<b>Summary of IEP Goals Data</b>
<b>Table 6</b>	<b>Summary of IEP Objectives Data</b>
<b>Table 7</b>	<b>Summary of IEP Accommodations Data</b>
<b>Table 8</b>	<b>Summary of Student Time Receiving Special Education</b>
<b>Table 9</b>	<b>Summary of Course Grades Data</b>
<b>Table 10</b>	<b>Summary of Students Earning Grades of C or Above</b>
<b>Table 11</b>	<b>Summary of Course Grades by Frequency</b>
<b>Table 12</b>	<b>Summary of ITBS Subtest Scores</b>
<b>Table 13</b>	<b>Summary of ITBS Nonstandard Administration Data</b>
<b>Table 14</b>	<b>Summary of LPT Domain Scores and Number of Administrations</b>
<b>Table 15</b>	<b>Summary of LPT Pass-Fail Data and Nonstandard Administrations</b>
<b>Table 16</b>	<b>Summary of Suspension Data</b>
<b>Table 17</b>	<b>Summary of Student Attendance Data</b>

# CHAPTER I

## INTRODUCTION

### Justification for the Study

**Inclusion of students with disabilities in general education settings is gaining momentum across the United States (Putnam, Speigel, & Bruininks, 1995), raising complex philosophical, legal, and educational issues for schools, the courts, and society as a whole. Thus, numerous position papers have been published in the popular press as well as in professional journals. In general, attention focuses on two major issues: the efficacy of the continuum model in use since the passage of Public Law 94-142 in 1975 and the prudence of the inclusive education reform movement as part of a solution to the shortcomings of the continuum model which consists of a hierarchy of placements ranging from general education classrooms to residential centers (Skrtic, 1995).**

**Reactions to the inclusive movement have varied, often resulting in a polarization of teachers, administrators, families, and advocacy groups. The literature consistently describes the most common concerns. For example, detractors suggest that special education will become diluted and no longer be "special"; that general education is not designed, nor general educators prepared, to meet the unique needs of all students, particularly those with disabilities; that the merger of general and special education is primarily a cost-cutting effort; and that the individualization and continuum of services requirements of IDEA prohibit the identification of one location as appropriate for all students (Gerber, 1984; Kauffman, 1989, 1991, 1993; Lieberman, 1990). Supporters of inclusion, on the**

other hand, insist that students with disabilities have a legal right to be educated with their typical peers in age-appropriate settings (Lipsky & Gartner, 1989, 1991, 1997; Martin, 1991; Yell, 1995); that the development of two separate educational systems has resulted in fragmented and artificial programs for students with disabilities (Villa, Thousand, Stainback, & Stainback, 1992); that poor social, academic, and employment outcomes documented for students with disabilities are reflective of restricted experiences available outside the general education environment (Pugash & Lilly, 1984); that once included in classrooms where expectations are higher and appropriate role models and true opportunities for generalization of skills exist, students will experience improved outcomes as a natural result (Wang, Walberg, & Reynolds, 1992).

Professionals and families planning educational programs for student with disabilities differ in their definitions, perceptions, and opinions of inclusion. Disagreements are due in part to a lack of empirical evidence that inclusion will result in improved outcomes for students (Kauffman & Hallahan, 1993). If the debate surrounding inclusion continues without careful study to support or refute it, the danger exists that inclusion will forever be a philosophy rather than a legitimate mechanism for delivery of services to students with disabilities. Confronting that danger requires gathering data on learner outcomes.

Two major goals of schooling are academic achievement and social adjustment; hence the question becomes how best to enable all students to attain those goals (Mehan, Vellaneuva, Hubbard, & Lintz, 1996). If the evolution of American education continually necessitates change in the system of schooling,

decision makers must consider where students with disabilities fit into the overall picture of change and reform. On a broader scale, if social progression in this country continues on a path toward greater acceptance of diversity, an atmosphere of acceptance must be created in schools so that students with disabilities become accepted members of society.

This study represents important work because it investigated issues related to middle school students with learning disabilities in general education classrooms, in particular, their academic and social experiences. It is critical at this juncture in the development of special education that more complete information on the relative impact of inclusion be gathered for a number of reasons. First, valid data will facilitate improved programs and practice in classrooms. Second, more effective programs and practice should support increased student achievement and socialization, allowing families and professionals to become more effective advocates. Finally, the ultimate goal of this study was to advance knowledge in the field related to inclusive education that can be translated into policy and practice in the education of students with disabilities and their peers.

### Theoretical Rationale

The debate surrounding inclusion of students with disabilities in general education classrooms is intensifying. While some think the debate on inclusive education has a legal base (Osborne & Dimattia, 1994), others claim its rationale lies in best practice for students with disabilities (Baker, Wang, & Walberg, 1995). Yet others support inclusive education on the basis of moral and ethical objection

to segregation and its resulting inequities (Biklin, 1992; Van Dyke, Stallings, & Colley, 1995). While each of these perspectives fuels debate and maintains inclusion as part of the reform movement, the overriding question remains, "How do we best educate students with disabilities?" As more students with disabilities are included in general education classrooms, it becomes critical to determine whether their learning is enhanced in these settings and what pivotal components of inclusive education make the difference.

If proponents of inclusive education are correct, then with appropriate supports, students with disabilities will demonstrate improved academic achievement as evidenced by course grades and standardized test scores (O'Neil, 1995). They will attend school until such time that it is appropriate for them to leave. They will behave in such a way that they become contributing rather than detracting members of the school community. Inclusion proponents think that if students with disabilities have the opportunity to learn in inclusive environments and to be exposed to the general education curriculum, their learning will improve (Sailor, Gee, & Karasoff, 1992). Further, they contend that replacement of segregated settings with integrated settings creates a strong probability that outcomes such as academic performance and social adjustment will improve (Miller, 1990). The lack of solid empirical evidence to support these contentions was the impetus for this study.

### Statement of the Problem

Two decades of providing special education services to students with disabilities have not resulted in the positive achievement and social outcomes

that were originally expected (Blackorby & Wagner, 1996; Giangreco & Edelman, 1995; Kohler, 1994; Marder & D'Amico, 1992; U.S. D. E., 1995). This relative lack of success combined with growing demand for social equity and civil rights, the increasing identification of students requiring services, and the ballooning costs of special education has prompted reconsideration of the special education delivery system (Behrman, 1994; Hasazi, Johnston, Liggett, & Schattman, 1994; Katsiyannis, Conderman, & Franks, 1995; National Association of State Boards of Education, 1992). One of the outcomes of this effort has been the inclusion movement. In many ways a radical departure from traditional special education service delivery structure, inclusive education for students with disabilities is currently in its early stages. Hence, scant empirical evidence exists to support the hypothesis that inclusion is an actual improvement in the way special education is provided or that it will result in more positive long-term outcomes for students.

Research studies designed to evaluate the efficacy of inclusive education are critical. The more quickly quality data and rational analyses become available to educators, legislators, and policy makers, the more expeditiously and wisely research can be translated into sound field practice. To further this effort, this study addressed the following questions:

1. Do middle school students with learning disabilities served in inclusive classrooms demonstrate higher academic achievement than students with learning disabilities served in pull-out special education programs?



2. Do middle school students with learning disabilities commit fewer disciplinary infractions than students with learning disabilities served in pull-out special education programs?
3. Do middle school students with learning disabilities served in inclusive classrooms demonstrate better school attendance than students with learning disabilities served in pull-out special education programs?

### Definition of Terms

Some of the terms used throughout this study will be defined here to clarify meanings relative to existing law and regulations, academic interpretation, and generally accepted practice in the field.

#### Ethnicity

As defined in Merriam-Webster's Collegiate Dictionary (1993), a taxonomic category or subspecies of people belonging to the same stock; a division of mankind possessing traits that are transmittable by descent and sufficient to characterize it as a distinct human type. For purposes of this study, ethnicity refers to federally defined categories: Asian or Pacific Islander, Hispanic, Black (not of Hispanic origin), American Indian or Alaskan Native, White (not of Hispanic origin) (Social Security Act, 21102, Civil Rights Act of 1964, §602).

#### Free Appropriate Public Education (FAPE)

This is a statutory term requiring special education and related services to be provided under IDEA §300.8 at public expense, under public supervision and direction, and without charge to meet standards of the local education agency,

include, preschool, elementary school, or secondary school, and/or vocational education, and are provided in accordance with an IEP.

### **General Education**

**Programs and services provided to students who have not been identified as needing special education; sometimes referred to as "regular education."**

### **Inclusion**

**Opportunities for all students with disabilities to have access to and participate in activities of the total school environment, including those that are academic, social, curricular and extracurricular. Concepts inherent in the implementation of inclusion are that students be educated with age-appropriate peers in their home schools, that necessary support be provided in inclusive settings, and that necessary curricular and instructional or programmatic adaptations and accommodations be made (Giangreco, Cloninger, Dennis, Edelman, 1994). The National Study of Inclusive Education (1994) provides the following definition of inclusive education:**

**Providing to all students, including those with significant disabilities, equitable opportunities to receive effective educational services, with the needed supplementary aids and support services, in age-appropriate classrooms in their neighborhood schools, in order to prepare students for productive lives as full members of society.**

**A 1994 forum of 10 national education organizations identified the following characteristics of inclusive schools: a philosophy and vision built on the belief that all students belong and will learn in general education settings, strong**

**leadership from the principal involving the staff in planning and implementation of programs, high expectations for staff and students, collaborative and cooperative work among staff and students, flexibility in roles and responsibilities, an array of services coordinated by staff to meet student needs, flexible instructional grouping patterns, parent involvement based on equitable partnership, research based strategies ( e.g., cooperative learning, peer tutoring, direct instruction, social and study skills training, computer-assisted instruction, and mastery learning), accountability weighted toward individual student progress rather than mass standardized measures, access based on barrier removal; and continuous professional growth based on student need (Council for Exceptional Children, 1995).**

#### **Individualized Education Program (IEP)**

**A written statement of the educational program that is designed to meet a student's unique needs. The IEP's purposes are to establish learning goals for the student and to state the services that the school district will provide. The document must include (a) the student's current levels of educational performance, specifically academic achievement, social adaptation, prevocational and vocational skills, sensory and motor skills, and speech and language skills; (b) the specific special education and related services to be provided and the extent to which the student will be able to participate in regular educational programs; (c ) annual goals with short-term objectives; (d) anticipated commencement and duration of services; and (e) methods of annual measurement of achievement of the goals and objectives (IDEA §300.346).**

### **Integration**

Education provided where some or all goals and objectives of the student's IEP are met in the general education setting with age-appropriate peers; the process of having students with disabilities become a part of the mainstream of their schools (Stainback & Stainback, 1996). The integration of students with disabilities into age-appropriate general education settings is most commonly referred to as "inclusion."

### **Iowa Test of Basic Skills (ITBS)**

A multilevel skill battery designed to provide for comprehensive and continuous measurement of growth in vocabulary, reading, mechanics of writing, methods of study, and mathematics. Optional measures of science and social studies knowledge are available. Batteries exist for third through ninth grade. Raw scores are obtained, which are then converted into grade equivalents. Grade equivalents in turn are converted to percentile ranks in grade, stanines, and normal curve equivalents for fall, mid-year, and spring. Grade equivalents may also be converted to and from developmental standard scores (Riverside Publishing Company, 1986).

### **Learning Disability**

A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, write, read, or to do mathematical calculations. The term includes such conditions as perceptual disabilities, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not

include students who have learning problems which are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or environmental, cultural, or economic disadvantage (IDEA §300.7 (b) (1)-(13).

#### **Least Restrictive Environment (LRE)**

The legal principle that students with disabilities are to be educated as closely as possible to the general education environment. Special classes, separate schools or other removal of students with disabilities from the regular educational environment should occur "only when the nature or severity of the disability is such that education in regular classes cannot be achieved satisfactorily..." The responsibility rests with local education agencies to make available "to the maximum extent practicable...the provision of special services to enable children to participate in regular educational programs" (IDEA §300.550 (b)(1)-(2).).

#### **Literacy Passport Tests (LPT)**

Reading comprehension, writing, and mathematics tests authorized by the Virginia General Assembly in 1988 as part of the 1992-94 Standards of Quality for Virginia Public Schools. In addition to other promotion and diploma requirements, students must pass all three portions of the Literacy Passport Tests to earn a standard high school diploma. The purpose of these tests is to determine whether students have satisfactorily achieved competence in the K-6 language arts and mathematics Standards of Learning Objectives on which the tests are based. A goal of the program is to have students academically prepared for entry into

secondary school so that they will be able to experience academic success.

(Spagnola & Redfield, 1991, 1992a).

### **Mainstreaming**

An educational term that refers to the practice of placing special education students in general education classes for part of their educational program. This term was widely used in the 1960s through the 1980s. Although it is sometimes used synonymously with inclusion, both philosophical and practical implications of the two concepts differ. Specifically, mainstreaming implies that students with disabilities remain the responsibility of special education and are brought into general education settings if and when the curriculum and instruction are appropriate for individual students. Inclusion differs from mainstreaming, Salend (1996) suggests, in that it implies a collaborative effort between general and special educators to develop classes which "welcome, acknowledge, and affirm all learners by educating them together in high quality, age-appropriate general education settings in their communities" (p. 49).

### **Natural Proportion**

The ratio of students with disabilities to those without disabilities that would normally be expected to exist in the population; by federal expectation 10-12% of the overall student population.

### **Neighborhood School**

The school that serves the student's attendance zone or the school the student would attend if not identified with a disability.

### **Pull-Out Special Education Program**

**An instructional approach that removes certain groups of students from larger, general education classrooms for separate instruction in different settings. Students identified as eligible for such programs as Chapter I, special education, remedial reading, and limited-English proficiency instruction are frequently taught in pull-out programs whose intended purpose is the development of skills needed for success in heterogeneous classes (Wheelock, 1992). Pull-out on a part-time basis is often called a resource program as opposed to a self-contained program.**

### **Related Services**

**Transportation, and such developmental, corrective, and other supportive services (e.g., speech pathology and audiology, psychological services, physical and occupational therapy, recreation, rehabilitation counseling, diagnostic and evaluative medical services) as may be required to assist a student with a disability in benefiting from special education; includes early identification and assessment of disabling conditions (IDEA, §1401.17).**

### **Socio-Economic Status (SES)**

**A determination based on various social and economic factors, generally defined by education agencies as qualification for free or reduced-priced lunches under the federal lunch program. For the purposes of this study, SES is defined by a student's ability or inability to qualify for the federal free or reduced-priced lunch program.**

### **Special Education**

**Specifically designed instruction, at no cost to parents or guardians, to meet the unique needs of student with disabilities, including classroom instruction, instruction in physical education, home instruction, vocational education, instruction in hospitals and institutions, or other setting (IDEA §300.17).**

### **"Students with Disabilities"**

**Term replaced "handicapped students" used until the 1990 reauthorization of Education of Handicapped Act (EHA), now known as the Individuals with Disabilities Education Act (IDEA); students evaluated in accordance with federal regulations (IDEA §300.530-§300.534) whose diagnosis is mental retardation, hearing impairment, deafness, communication impairment, autism, visual impairment, serious emotional disturbance, orthopedic impairment, other health impairment, deaf-blindness, severe and profound disabilities, multiple disabilities, specific learning disabilities, or traumatic brain injury, who, because of these disabilities, require special education and related services (IDEA §300.7).**

### **Research Hypotheses**

**The following hypotheses address the question this study was designed to investigate: "Do middle school students with learning disabilities served in inclusive classrooms demonstrate higher academic achievement, better school attendance, and fewer disciplinary infractions than students with learning disabilities served in pull-out special education programs?":**



- 1. Middle school students with learning disabilities served in inclusive classrooms will achieve higher report card grades in language arts, mathematics, science, and social studies than students with learning disabilities served in pull-out special education programs.**
- 2. Middle school students with learning disabilities served in inclusive classrooms will demonstrate higher scores on the language arts, reading comprehension, mathematics, science, and social studies subtests of the Iowa Test of Basic Skills (ITBS) than students with learning disabilities served in pull-out special education programs.**
- 3. Middle school students with learning disabilities served in inclusive classrooms will demonstrate higher scores on the reading, writing, and mathematics domains of the Virginia Literacy Passport Tests (LPT) than students with learning disabilities served in pull-out special education programs.**
- 4. Middle school students with learning disabilities served in inclusive classrooms will experience fewer in-school and out-of-school suspensions than students with learning disabilities served in pull-out special education programs.**
- 5. Middle school students with learning disabilities served in inclusive classrooms will attend more days of school than students with learning disabilities served in pull-out special education programs.**

### **Limitations of the Study**

**Several readily identifiable aspects of this study necessarily limit the generalizability of results. These limitations arise primarily from the scope of the investigation and from factors that typically impact on research in educational settings such as lack of random assignment, teacher experience, and incidental occurrences that cannot be controlled outside of a clinical setting.**

**The scope of the study is limited by the size of the small, suburban school division from which the sample was drawn. The selection of two schools as the focus resulted in a limited number of subjects. While the number of students was small and may not support generalizability of results to school districts of different size and demography, nevertheless, it was adequate to support the statistical analyses employed.**

**It should further be noted that while the two middle schools chosen for this study implement two distinctly different special education service delivery systems, one inclusive and the other pull-out, current practice in the field has resulted in the adoption of some inclusive practices in the noninclusive school. The most obvious example of such a practice is consultation and collaboration between general education and special education teachers. Because the implementation of current best practices was encouraged by school-based and district administrators, the amount of such interaction between teachers could not be controlled. Differences in the service delivery models used in the two schools were addressed by a comprehensive description of each of them, allowing any conclusions drawn from this study to be placed into meaningful context. The**

**description included information on the administrative and teaching staff such as licensure, degrees, years of experience, and on patterns of support staffing such as numbers and types of support staff. An extensive description of service delivery models detailed instructional models, degree and types of collaboration, percentage of time students received special education, number of students with disabilities in class, and teacher-pupil ratios. An analysis of IEPs reflected students' annual goals and short-term objectives, accommodations, and service delivery time.**

**A further limitation was imposed by the lack of random assignment of students to schools. Students in this study attended schools in their designated attendance zones. This limitation was addressed by the statistic applied to the data. If analyses of the input variables (i.e., age, SES, IQ, gender, ethnicity, educational level of the mother, years receiving special education, and years receiving special education in the school district) indicated that the groups were not comparable, then an analysis of co-variance was intended to be conducted. If there was no difference among input variables, t-tests were planned. Since the scope of this study was experience in the middle school setting, it was impossible to account for exposure to inclusive experiences in elementary schools that some students experienced.**

**As an additional limitation of the study, standardized achievement data are impacted by the fact that not all students are included in the testing pool and that some students with disabilities who do take the tests may have done so under nonstandard conditions, rendering their scores incomparable to others. This issue**

was addressed by a systematic review of any exclusions of students from the standardization sample to determine if patterns existed.

This study, like many involving public school classrooms, was also affected by the inability to control for human response. For example, teacher and administrator tolerance for and response to violations of the prescribed code of student conduct varies. As much qualitative and descriptive data as possible was gathered in order to establish a meaningful context. Similarly, course grades are subjective measures determined by individual teachers and therefore subject to variation. These issues were addressed by the use of multiple measures of achievement.

#### Ethical Considerations

Data used in this investigation existed in schools records, many of which were a matter of public record, including numbers of students in special education by grade, disability, ethnicity, and gender. Additional individual data, such as test scores, behavioral records, and grades, were collected. In recording, analyzing, and reporting these individual data, student identity was kept confidential by the assignment of a code to each student. Because student names do not appear anywhere in the document, confidentiality was not breached. Also because no personal contact with students occurred, there was no direct impact on the participants in this study. Program descriptions were obtained from existing records, such as written program descriptions, teacher lesson plans, observation notes, and team meeting records kept in the schools. Every effort was made to minimize time and effort of school district staff needed to produce data.

**Application was made for approval to conduct this study to the College of William and Mary, School of Education Committee on Research on Human Subjects. A letter of application to conduct a research project was submitted to appropriate school division officials for review and approval.**

**Potential ethical risks as the result of the completion of this study were not ignored. It is possible that hypotheses supported in this investigation could be used as bases for programmatic and policy decisions. All reasonable efforts will be made to ensure that no information in this study is used out of context and misrepresented in any way; however, complete control of the published document and its contents is not possible. Finally, no obligation was incurred by this student to anyone involved in either approval or completion of this undertaking.**

## **CHAPTER II**

### **REVIEW OF LITERATURE**

**Effective and efficient provision of special education services for students with disabilities is the focus of much attention in this country. As numbers of students qualifying for services increases, so do demands on the educational system (U.S.D.E., 1996). Currently it is widely debated whether students with disabilities should be educated in general education classrooms and if so, how. This research study addressed the issue of student outcomes in an attempt to help clarify a preferred model of service delivery.**

**This chapter is designed to furnish background information on the development of special education services and an update on the current status of service delivery. The first section describes the legal and regulatory framework within which the special education system has developed and operates. Next, a summary of relevant research is provided, specifically that on special education service delivery models and outcome data on their effectiveness and on the evolution of the inclusion movement and its effectiveness. Finally, a review of case law refining the least restrictive environment provision of The Education of the Handicapped Act (EHA) of 1970 and the Individuals with Disabilities Education Act (IDEA) of 1990 offers insight into how the courts are evaluating the appropriateness of pull-out and inclusive special education programs.**

#### **Legal and Regulatory Framework**

**In the early 1970s the United States Congress conducted an investigation of the status of the education of "handicapped" children and youth. Results**

revealed that there were more than eight million students with disabilities in the United States whose educational needs were not being met. It was further found that more than half of students with disabilities in the United States did not receive appropriate educational services that would enable them to have full equality of opportunity, and that one million students with disabilities were excluded entirely from public schools (Education of Handicapped Children Act, 1975) (EHCA).

In an attempt to correct these injustices and to establish parameters within which schools would meet the individual needs of students with disabilities, Congress passed several pieces of legislation in the following years. Among these, the Education of the Handicapped Act (1970), the Education of All Handicapped Children Act (1975), and the most recent reauthorizations, the Individuals with Disabilities Education Act (1990, 1997) form cornerstones of the federal mandates. The intent of Congress was to ensure that students with disabilities have a free and appropriate public education through assurance of certain procedural safeguards. The purpose of the legislation was to assist states in providing full educational opportunity while ending misidentification, underidentification, and segregation that had characterized services available to students with disabilities up until that time.

While the 1970 legislation set the stage for the education of children with disabilities, the 1975 version, the Education of All Handicapped Children Act (EHCA), detailed the most important legal protections, which include non-discriminatory assessment, special educational services individualized for each

**student and provided in the least restrictive environment, and parental rights. To address the issues of provision of services in the least restrictive environment (LRE), federal legislators established a continuum of services from which the LRE would be chosen for each student, taking into account individual strengths and weaknesses and educational goals determined appropriate by the Individual Education Plan (IEP) committee.**

**Other key pieces of federal legislation that speak to the issue of the education of students with disabilities include Section 504 of the Rehabilitation Act (1973) and the 1990 Americans with Disabilities Act (ADA). Section 504 prohibits discrimination based on disability by any recipient of federal funds; it establishes impairment affecting one or more major life activities as the qualifier for eligibility for civil rights protection. Because it cites learning as one of those major life activities, there is a direct tie to education. Further, most public schools receive federal funding and are consequently governed by the provisions of the act.**

**ADA is a companion piece to other federal civil rights legislation designed to protect the rights of individuals with disabilities in specific areas such as employment, public accommodation, transportation, and telecommunications. Its primary goal is to eliminate discrimination by removing barriers, both social and architectural, that tend to segregate people with disabilities from mainstream American society. In its own language, the intent is "... with sweep of congressional authority... to address the major areas of discrimination faced day-to-day by people with disabilities" (P.L.101-336, Section 2). The primary method**



of achieving the goal, providing full access, is accommodation of impairment. Title II of ADA identifies schools as entities that receive federal funds.

### **Summary of Relevant Research**

The critical relationship explored in this study was that between the model of special education service delivery, specifically pull-out or inclusion in general education, and outcomes of students with learning disabilities (LD). While the field of special education has developed and expanded to serve more students with increasingly complex needs, data on pull-out special education programs for learning disabled students reveal that results have not been satisfactory in terms of school achievement or long-term benefits (Fuchs & Fuchs, 1991, 1995; Johnson & Johnson, 1981; Lloyd & Gambatese, 1991; Madden & Slavin, 1983; Marston, 1987; Reynolds, 1989). Factors identified as barriers to student success are lower expectations; uninspiring and restricted curricula focused on rote or irrelevant tasks; disjointedness from general education curricula; and negative student attitudes resulting from school failure and stigmatizing segregation (Meyen & Skrtic, 1995; Wang, Reynolds, & Walberg, 1988).

Two decades of disappointing outcomes have led to the question: Is there a relationship between placement and outcomes? The following summary of the literature is intended to present data currently available by reviewing models most often used and observed impact on student achievement and behavior.

### **Special Education Service Delivery Models**

In order to meet federal mandates for provision of services without discrimination, school districts throughout the country have during the two

decades since passage of EHA developed an array of services and programs for students with disabilities. These programs comprise a continuum from least to most restrictive. The least restrictive option of services is a general education classroom with full participation with typical age-appropriate peers. In order of increasing restrictivity, then, are general education placement with partial pull-out for special education instruction, special education classroom placement with partial instruction in the general education classroom, full-time special education classroom placement, separate day school, homebound instruction, and full-time residential placement (EHA). Selection of a placement option for a student is based on the nature and severity of the student's disability, the intensity of instruction required, and perceived benefit to and possible damaging effect on the student (Polloway, 1984). Placement decisions are made by IEP committees, who develop appropriate instructional goals and objectives and then determine the setting in which those can best be achieved. That setting, then, becomes the least restrictive environment appropriate for the individual student.

A review of the research reveals that most students with disabilities are in the mild to moderate category and have been served in general education classrooms for part of their school day (Lilly, 1992). Historically, time spent in general education classrooms has been characterized by instruction planned and implemented solely by general education teachers for students without disabilities with any specialized services delivered outside those classrooms usually in resource settings. Typically that placement option consists of special education

teachers working with small groups of students to provide remedial or supplemental instruction on a prescriptive basis (Skrtic, 1995).

Self-contained and part-time special class placements have been utilized when general education classrooms, even with resource class support, are not the preferred alternative for students. Within this configuration, students with similar disabilities are usually grouped together to receive basic skills instruction and any necessary behavioral intervention (Hallahan, Keller, McKinney, Lloyd, & Bryan, 1988). At the secondary level, this option often blends remedial or functional academics with prevocational and vocational skills (Polloway, 1984). Finally, more restrictive settings, such as separate day schools, homebound, or residential schools, serve the needs of a small proportion of students with more significant disabilities who are deemed unable to benefit from involvement with their typical peers and whose instructional programs are impractical to implement in less restrictive settings (Salend, 1996).

#### Special Education Outcome Data

The continuum of services for students with disabilities has not evolved without some negative consequences. Some contend that a dual system has resulted—the general education track and the special education track, each with its own rules and regulations, its own funding streams, and its own administrative structures (Gerber, 1984; Sheehan & Keogh, 1984; Stainback, Stainback, & Forest, 1989; Tindal, 1985; Will, 1986;). Of additional significance are the disadvantages of the traditional special education structure to the students it was designed to serve (McCullom & Turnbull, 1989; Roach, 1993; Thurlow &

**Ysseldyke, 1992). The stigmatization involved with identifying, categorizing, placing, and instructing students based on perceived deficits has been a problematic issue in special education since the passage of EHA (Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1994; Lilly, 1992). Warranting equal concern is frequent lowering of expectations for the achievement and behavior of students with disabilities, a particular threat in segregated programs where lack of academic and social success becomes the norm (Ysseldyke, Thurlow, & Bruininks, 1992). An additional concern with current systems of special education service delivery and their reliance on pull-out programs is restricted access to primary instructional programs available in general education classrooms (Allington & Johnston, 1990; Ysseldyke, Thurlow, & Shriner, 1992). The result is often uncoordinated with inconsistent curricula and instruction (Allington, Stuetzel, Shake, & Lamarche, 1986; Slavin, 1996; Stainback & Stainback, 1991).**

**Outcome data on the effectiveness of special education programs are mixed. According to information published by the National Agenda for Achieving Better Results for Children and Youth with Disabilities (Rockne & Weiss-Castro, 1994), 20 years after the passage of EHA, the following is true:**

- All children and youth with disabilities are now a part of the public education system and guaranteed a free appropriate public education (FAPE).**
- A significant number of children and youth with disabilities previously receiving services in residential institutions are attending public schools.**

- **The needs of many children and youth with learning disabilities now are being recognized and served.**
- **A significant number of children and youth with disabilities are exiting public education, gaining employment, and living independently in the community.**
- **Some youth are entering postsecondary education, in particular, those with sensory impairments who enroll in postsecondary school at about the same rates as youth in the general population.**
- **Statistics from the U.S.D.E. (1990) reveal that three to five years after completion of public education, 57% of students with disabilities were employed. Approximately one quarter of the students tracked were enrolled in postsecondary education, and 36% were living independently.**

**While these data demonstrate that progress has been made in the education of students with disabilities, other data document that outcomes for such students have not met expectations, given the extensive and expensive system of special education currently in existence. For example, students with disabilities tend to hold low-status jobs with only 18% of them earning more than minimum wage. When higher functioning students with learning disabilities and serious emotional disturbance are removed from the numbers, that percentage drops to five (Edgar, 1985, 1988, 1987). Dropouts with disabilities were only half as likely to re-enter the educational system or obtain a General Education Diploma (GED) as dropouts without disabilities. Furthermore, gains occurred**

most often within two groups, students with mild disabilities (i.e., learning disabilities, speech impairments, mild mental retardation) and those with sensory impairments. When students with disabilities are afforded the opportunity to participate in state and local standardized assessment programs with their typical peers, their results are significantly lower (Stainback & Stainback, 1996).

The U.S.D.E.-sponsored National Longitudinal Transition Study (NLTS) revealed the following:

- A disproportionate number of students with disabilities dropped out of school. Overall about 38% of students with disabilities dropped out of school (8% in middle school, 30% in high school), a higher rate than for students in the general population (24%). Dropout rates were especially high for youth with serious emotional disturbance, learning disabilities, mental retardation, and health impairments.
- Almost half of students with serious emotional disturbance dropped out of school. After being out of school for up to five years, 75% of students with serious emotional disturbance who dropped out had been arrested.
- Two-thirds of secondary school students with disabilities failed at least one course at some point in their four years of school. Most of these students were classified as having a serious emotional disturbance or learning disabilities. Failing a course in high school increased the likelihood of dropping out of school and decreased the likelihood of employment.

- **Relatively few students with disabilities enrolled in postsecondary education. After being out of high school for three to five years, fewer than one-third had gone on to postsecondary education, half the rate of youth in general education.**
- **Forty-six percent of youth with disabilities who had been out of school for up to two years were competitively employed. Three years later competitive employment rate for students with disabilities had increased to 57%. This rate, however, remained lower than 69%, the figure for youth in the general population (Wagner & Shaver, 1993). The findings also indicated that almost one in four students with disabilities failed to pass any part of their states' minimum competency tests and only one in 10 passed all sections.**

### **The Evolution of the Inclusive Education Movement**

**Calls for reform in special education began in the 1980s (Algozzine & Korinek, 1985; Gartner & Lipsky, 1987; Hallahan et al., 1988; Kauffman, 1994; Kavale & Forness, 1987). Not insignificantly, the reform movement in special education coincided with a similar movement in general education and in some ways mirrors it (West, 1990). Briefly, researchers investigating both movements have identified more effective programs as being characterized by the following critical elements: curricula that are purposeful, relevant, and problem-solving oriented (Peterson, LeRoy, Field, & Wood, 1992); a focus on individual strengths (Biklin, 1992); high expectations for learning (Lipsky & Gartner, 1991); accountability (Trent, 1989); teacher preparedness (Allington & Johnston, 1990;**

Baker & Zigmond, 1990a); systematic assessment of progress (Kovaleski, Tucker, & Stevens, 1996); parent involvement (Gill & Edgar, 1990); and administrative support (Schattman & Benay, 1992; Spady, 1995; Villa & Thousand, 1992; Yatvin, 1992). Issues of appropriateness, relevance, and outcomes have been focal points of the larger reform debate and also critical elements of the change agenda in special education (Goodman, 1995; Sailor, 1991).

One response to the call for special education reform has been the inclusion of students with disabilities into general education programs. As mentioned, the inclusive education movement has been the focus of much discussion and controversy (Blackman, 1989; Davis, 1988; Kauffman, 1993, 1994; Lieberman, 1985; Stainback & Stainback, 1984, 1996; Wang, Reynolds, & Walberg, 1989). While wide variation exists in current definitions of inclusion, it is generally accepted that key elements of inclusion are unlimited access to general education classrooms and related activities, special education services delivered in or through general education environments, and collaboration between general and special education teachers (Giangreco, Cloninger, & Iverson, 1993). Inclusive classrooms tend to consist of a majority of students without disabilities and some students with disabilities, reflecting natural proportion (Ysseldyke, Thurlow, Wotruba, & Nania, 1990). Often some form of cooperative teaching takes place, meaning general and special educators work together to instruct heterogeneous groups of learners within general education classrooms (Bauwens & Hourcade, 1995; Thousand & Villa, 1992). Direct instruction is the most



commonly used delivery method, while cooperative groups and independent drill and practice are also common (Ysseldyke et al., 1990). For students with mild disabilities, the content is usually either skills-based or complementary to the general content, such as learning strategies or study skills (Stainback & Stainback, 1996). Some pull-out resource intervention is often provided to teach students skills that will help them succeed in mainstream classes (Skrtic, 1995). The expectation in such an inclusive environment is that classroom accommodations and modifications appropriate to individual students will be available (Miller, 1990).

The following critical conditions for successful inclusion have been identified:

- Both general and special education teachers need adequate skills and technical knowledge to meet the needs of students;
- A common language on learners, instructional strategies, and assessment must exist;
- Data on student progress must be collected and analyzed continuously, particularly on students with severe reading and mathematics disorders; and
- Adaptations must include routine planning and collaboration, flexible grouping around instructional need, and a legitimate willingness on the part of teachers to make substantial changes if needed (Blenk & Fine, 1995; Corbin, 1991; Ferguson, Meyer, Jeanchild, Juniper, & Zingo, 1992; Giangreco, 1996; Michigan Study, 1993).

Little clinical data are available to support that all classrooms that purport to be inclusive are characterized by such arrangements (Hallahan et al., 1988; National Study, 1995; Rogers, 1993).

### Outcome Data on Inclusive Education

Early empirical studies of the efficacy of inclusive education programs are few in number and are now dated, comparing integrated services with instructional practices that were prevalent in the late 1970s through the mid-1980s, evidencing less relevance to today's classrooms (Hocutt, 1996). However, more recent studies suggest a trend toward improved academic, social and behavioral outcomes for students receiving special education services (Lipsky & Gartner, 1997). Caveats concerning research on inclusive programs are small sample sizes, lack of random assignment, and lack of comparability of groups since students who are offered inclusive opportunities tend to vary in important ways, such as behavioral characteristics, from students who are maintained in more restrictive environments (Epps & Tindal, 1987; Martin, 1994).

Limited research has been conducted on the academic achievement and social outcomes of students with disabilities and on attitudes of various participants involved in inclusive programs (i.e., students with and without disabilities, families, and general and special educators). In order to understand the research that does exist and to place it better into perspective, it is necessary to identify both the content of studies and the methodology used. Most studies reviewed used outcome indicators of academic achievement, perceived effectiveness (i.e., consumer satisfaction), and/or social interaction appropriateness of students with disabilities. Academic outcomes tend to be

measured by comparisons of grades, standardized test scores, and some curriculum-based assessment. Assessing these outcomes provides a contrast to earlier assessment of mainstreaming experiences when attention was focused on the amount of time students with disabilities spent in general education classrooms rather than on any instructional variables or possible benefits to students (Blenk & Fine, 1995; Smith & Smith, 1985; Wang & Baker, 1985-86; Ysseldyke, Thurlow, Bruininks, Gilman, Deno, McGrew, & Shriner, 1992).

Early studies are not conclusive in their findings on outcomes for students with learning disabilities. For example, Sabatino (1971) compared the achievement of students with learning disabilities who received pull-out special education services to those who received general education services. This is an example of the type of research conducted during the 1970s in that special education services were not typically provided within general education settings. Therefore, this comparison is not particularly helpful when analyzing the efficacy of inclusive programs. Sabatino looked at 97 students; 11 received no classroom intervention; 11 received self-contained services; 11 received resource services for one hour per day; and 48 received resource services for one half hour per week. Students were matched on age, sex, IQ, and perceptual disability but not on academic achievement. One standardized measure revealed that students served in a resource program with part-time placement in general education scored higher in reading. Another standardized measure presented a different pattern, with self-contained students scoring higher. The Wide Range Achievement Test (WRAT), one of the measures, uses only single word

recognition to evaluate reading. The other measure, the Gilmore Oral Reading Test, is reported to have low reliability. However, despite these characteristics, the Sabatino study is used to support integrated special education services.

As the 1980s began, a greater need to evaluate special education programs developed. For example, Carlberg and Kavale (1980) conducted a meta-analysis of 50 studies culled from a group of 860. They determined the unit of analysis to be effect size, that is, the magnitude of the effect of an intervention. These researchers found a positive effect for students classified as "learning disabled" who were served in special education classes. That is, those students showed an 11% improvement in reading achievement.

In contrast, Wang and Baker conducted a meta-analysis in 1985-86 of 11 studies selected out of 264 with different results. Their goal was to determine the effectiveness of general education classroom placement and to identify program characteristics that would support mainstream success, including academic achievement, attitudinal factors, and teacher-student interactions. Of the 541 subjects, only 3% were students with learning disabilities. Overall, Wang and Baker determined that available data suggested that general education exposure had a positive impact on student achievement, attitudes, and behavior.

In a frequently cited study, Affleck, Madge, Adams, and Lowenbraun (1988) compared student achievement data of students with and without disabilities in integrated general education classrooms with those of similar students served in pull-out programs. General education curricula and materials were used to provide instruction. A half-time teaching assistant was assigned to

the integrated classes. Class size was 24 students, eight of whom had disabilities. A comparison of pre- and posttest scores on reading, mathematics, and language arts subtests of the Woodcock-Johnson Psychoeducational Battery revealed no significant difference in performance among elementary school students with learning disabilities in integrated settings and in resource rooms. Comparison of performance on the California Achievement Test showed no significant difference among general education students in the integrated program and in classes without students with disabilities. As a result, the implication is that students in general education classrooms performed as well academically as those served in pull-out programs.

Based on two major data collection efforts through the Minnesota Educational Effectiveness Project (MEEP), Deno, Maruyama, Espin, and Cohen (1990) reported that students with mild disabilities integrated into general education classrooms scored higher on standardized reading tests than did students with disabilities served in resource programs. Study I examined the relationship between the several effectiveness variables identified in MEEP and the attitudes and achievement of students in 31 MEEP schools. Random samples of six students from every class in each school were used to draw student attitude and achievement data. If a school had only one classroom per grade, 12 students were selected. The total sample included 604 students, and data were gathered from 756 school staff, including teachers, principals, and other professional staff working in the target schools. The tools employed were the Basic Academic Skills Samples (BASS) and the School Characteristics Survey.

The BASS data were analyzed to determine whether growth trends were evident across grades. The means for each grade level across participating schools were completed by averaging each student's scores across each skill domain and then across students.

Study II, which focused on 11 of 31 MEEP schools, compared the instructional program provided to students with mild disabilities in three integrated programs with those provided in conventional resource pull-out programs in three other schools. The difference between program characteristics and cognitive and affective outcomes was also analyzed.

In Study II samples were drawn from 11 of the schools used in Study I, eight of the schools had integrated programs and three were conventional resource pull-out programs. Data were collected on the cognitive and affective characteristics of low-achieving and special education students and on the reading programs in which those students received their instruction with the primary purpose of comparing the instruction in the integrated programs with that in the pull-out programs. Students with disabilities in inclusive classrooms represented 255 of the 758 students. Two hundred fifty-five of 758 students were receiving special education services. Results of these studies indicate that while students with disabilities placed full-time in general education classes scored lower than low-achieving students and typical students, the gap between them was not as wide as that between students in pull-out programs and their typical peers. Students with disabilities in inclusive settings scored higher in both attitude and achievement than nonintegrated students.

The 1990s brought additional research. A small study by Zigmond and Baker (1990) reviewed the Mainstream Experiences for Learning Disabled Students (Project MELD). The mathematics and reading achievement of 13 students with learning disabilities who had been returned from special education classrooms to full-time general education co-taught classrooms was analyzed to detect achievement differences. Standard scores on the California Achievement Test reading and mathematics subtests administered one year apart and a reading curriculum-based assessment revealed that on the academic skills measured the students scored lower, suggesting that advantages of pull-out placement did not result in greater gains than the integrated classroom (Baker & Zigmond, 1990b).

Another meta-analysis by Baker et al. (1995) compared effect sizes of inclusive versus pull-out services for students with disabilities. Here a small to moderate beneficial effect of inclusion was found on academic and social outcomes. Similarly, Halversen and Sailor (1990) reviewed 261 studies to compare the outcomes for students with special needs in inclusive classes with those of their peers in pull-out programs. Results indicated reduced inappropriate behaviors, increased communication skills, greater independence, and higher parental expectations in inclusive classes. Another example is a study in which Schulte, Osborne, and McKinney (1990) found that when students with LD were provided in-class instruction coupled with consultation with general education teachers, they showed greater overall academic gains than students in pull-out special education programs.

**While the research to support or refute the desirability of inclusive special education services is not overwhelming, there appears to be a positive trend in student outcomes as integration into general education experiences increases. As the research base grows, methodological problems such as lack of correction for random assignment, small sample sizes, and lack of clarity of instructional program design may be anticipated to decrease.**

### **Case Law Refining the Least Restrictive Environment Provision**

**Concurrent with the development of special education programs for students with disabilities has been a variety of court cases that have helped to shape and define how services are provided. The promise and the challenge of federal mandates for special education are that no one version of the legally required "free and appropriate public education" (FAPE) fits the requirement of both the letter and the spirit of the law for every student. Certain elements are essential in order to maintain compliance with laws governing the education of students with disabilities but laws, by their very definition, cannot define what is "appropriate" for an individual student. Judgment is left to professionals and families who must work together to craft educational plans that both meet legal mandates and serve the perceived needs of each student. It is easy to understand that disagreement can occur between parties. Those differences can result in legal proceedings that subsequently impact the way services are provided to students.**

**Many such cases have been heard in courts throughout the country since the passage of EHA in 1975. Put into historical perspective, well before the**



passage of the special education legislation of the 1970s, in Brown v. Topeka Board of Education (1954), the United States Supreme Court denounced the practice of separate educational facilities. Two class action suits, Pennsylvania Association for Retarded Citizens v. Pennsylvania (1971) and Mills v. Board of Education (1972), established the constitutional basis for providing education to students with disabilities because denial of education without due process violates the 14<sup>th</sup> Amendment's property rights provision. These cases provided impetus for PL 42-142 (Osborne & Dimattia, 1994).

The least restrictive environment mandate of IDEA must continually be balanced with the appropriateness mandate (McCarthy, 1994). Prior to 1990, the courts generally supported the position of school divisions that for some children appropriate programs were found in segregated settings (Osborne & Dimattia, 1994). Reacting to the availability of specialized programs, the courts were persuaded that their advantages outweighed any possible advantages of an education with nondisabled peers. A series of cases supported the decision that the primary consideration should be the program rather than the least restrictive environment, equating the LRE with the general education classroom and, in essence, saying that segregation of students with disabilities did not constitute a violation of EHA or IDEA ( e.g., A.W. v. Northwest R-1 School District, 1987; Matthews v. Campbell, 1979; Johnston v. Ann Arbor Public Schools, 1983; Lachman v. Illinois State Board of Education, 1988; Liscio v. Woodland Hills School District, 1989; Thomock v. Boise Independent School District, 1988; Mark A. v. Grant Wood Area Education Agency, 1982; Wilson v. Marana Unified

School District, 1984; St. Louis Developmental Disabilities Treatment Center Parents Association v. Mallory, 1984; Visco by Visco v. School District of Pittsburgh, 1988, 1989; Devries by DeBlaay v. Fairfax County School Board, 1989; Gillette v. Fairland Board of Education, 1989).

While citing a strong but not absolute preference for general education placement, courts rendered decisions during the 1970s and 1980s that forbid school divisions to use the LRE to preclude segregated setting if they were found to be in the best interest of the individual student (Board of Education of Hendrick Hudson Central School District v. Rowley, 1982; Board of Education of East Windsor v. Diamond, 1990; Ronker v. Walter, 1983; St. Louis Developmental Disabilities Treatment Center Parents Association v. Mallory, 1984). As the current decade began and substantial efficacy data on traditional special education programs became available, a shift occurred in court decisions. IDEA began to be seen as "a legislative compromise between two competing special educational goals. The first is to integrate students with disabilities into regular classrooms to the greatest extent appropriate...The second is to provide an individually tailored educational program, which allows the student to derive some educational benefit from attending school" (p. 590) (Statutes, Regulations, and Case Law Protecting Individuals with Disabilities, 1997).

The first wave of LRE cases of the "inclusion era" emphasized a student's right to access to general education programs. The process of refinement of "maximum extent appropriate" began. The premier case to address the issue was Daniel R. R. v. El Paso Independent School District (1989). The court concluded

in this case that a school division cannot eliminate a general education classroom as an option for a student before that placement had been tried. It went further to define two exceptions: significant disruptions to the class and undue financial hardship to the schools. Subsequent cases also sanctioned school divisions for failing to consider general education settings, for limiting inclusion, and for failing to document why the use of supplementary aids and services in general education classrooms would not be sufficient for students with disabilities to derive educational benefit (Greer v. Rome City School District, 1991; Mark Z. v. Mountain Brook Board of Education, 1992; Johnson v. Lancaster-Lebanon Intermediate Unit 13, 1991). Clearly, some decisions supported striking a balance between integration in a student's neighborhood school and community and the requirement to specialize and individualize his educational program (Lenn v. Portland School Community, 1993; Amann v. Town of Stow, 1992; Brougham by Brougham v. Town of Yarmouth, 1993).

The courts have sent no clearer message than that in the case of Oberti v. Board of Education of the Borough of Clementon School District (1992). The court ruled that Rafael Oberti, an eight-year-old with a diagnosis of Down Syndrome and severe cognitive and communication disabilities could not be denied inclusion in a general education classroom without adequate effort to make it an appropriate learning environment. The decision stated, "No child should have to earn his way into a regular education classroom." The court did not mandate a general education setting for every child, but highlighted three factors for courts and schools to consider in a subsequent decision determining

whether a student with disabilities can be educated satisfactorily in these classrooms with supplementary aids and services: (a) Has the school division made reasonable rather than token efforts to integrate the student into the classroom? (b) Has a comparison of benefits of integration into general education been made with benefits of a specialized program for the student with disabilities? And (c) Have effects of inclusion of the student with disabilities into the classroom been considered?

On appeal, Board of Education of Sacramento City Unified School District v. Holland (1992), the court upheld the lower court decision that school districts are responsible for proving that a student with disabilities cannot be included and further that, if the student can be educated in the general education setting, that his or her education should occur there even if it is not the best academic setting for that individual. It also defined relevant criteria to be considered by school divisions and courts when determining the appropriate level of inclusion for a student. The four-part test focuses on the benefits of general education settings, non-academic benefits to the student, effects the placement would have on the teacher and other students in the general education setting, and costs to be incurred with general education placements.

A subsequent application of the four-part balancing test took place in Statum v. Birmingham Public School Board of Education (1993). The mother of a seven-year-old girl with significant mental retardation and physical disabilities challenged the school division's recommendation to change the child's placement from general education to a self-contained special education program. The court

agreed with the mother, indicating that the school had failed to show that the self-contained placement would offer greater benefits to the student, that the student's IEP could not be implemented in the general education setting with supplementary aids and services, that an inclusive placement would be detrimental to other students in the class, and that the cost of such a placement would limit the district's ability to educate other students.

While the majority of court decisions in recent years have supported the inclusion of students with disabilities in general education settings, the courts have not mandated such arrangements for all students, preferring to preserve the individualization of placement decisions by IEP committees and thereby implying that inclusion may not benefit all students with disabilities. An example of such a decision is that in Poolaw v. Parker Unified School District (1994). A federal district court upheld a decision that benefits of inclusion for a 12-year-old student with significant hearing loss would be limited and that his extensive educational needs could be met only in a special segregated setting. Nor have the courts mandated that all services be provided in a student's neighborhood school. Integration with typical (i.e., nondisabled) peers may take place in a school other than a student's neighborhood school because sometimes it is neither feasible nor possible for a school division to replicate programs or make plant modifications necessary to serve a student (Barnett by Barnett v. Fairfax County School Board, 1991; Schuldt v. Mankato School District No. 77, 1991).

All of the cases described above address remedies under EHA or IDEA. Few cases have been heard through civil rights complaints under Section 504 of

**the Rehabilitation Act of 1973. This piece of legislation speaks clearly to the expectations for the education of students with disabilities:**

**A recipient of federal funds to which this subpart applies shall educate, or shall provide for the education of, each qualified handicapped person in its jurisdiction with person who are not handicapped to the maximum extent appropriate to the needs of the handicapped person. A recipient shall place a handicapped person in the regular educational environment operated by the recipient unless it is demonstrated by the recipient that the education of the person in the regular education environment with the use of supplementary aids and services cannot be achieved satisfactorily. Whenever a recipient places a person in a setting other than the regular education environment pursuant to this paragraph, it shall take into account the proximity of the alternate setting to the person's home (34 CFR 104.34).**

**Although special education cases are heard through the due process procedures of IDEA, violations of constitutional rights are often asserted in civil rights cases under Section 504. Civil rights plaintiffs can recover money damages against school boards or school officials responsible for civil rights violations. Punitive damages for intentional civil rights violations are available against school officials but not school boards. In addition, a prevailing plaintiff is generally entitled to recover reasonable attorney's fees associated with litigating a civil rights lawsuit. School board members and school officials, including teachers and**

administrators, may be held personally liable for any damages caused by violating the civil rights of any person. Monetary liability in such cases is potentially sizable (Arnold & Dodge, 1994). The possibility of such sanctions makes it all the more critical that sound, defensible decisions be made about special education service delivery to students with disabilities.

### Summary

As educators and policy makers grapple with issues of how best to provide specialized services to students with disabilities, it is critical to contemplate the impetus for the special education system and its developmental history, short- and long-term impact on those it seeks to serve, and the judicial perspective on its obligations and parameters. Progress that has been made as well as risks that are involved in the education of students with disabilities can be clearly documented. The next step, furthering the process while minimizing the risks, will require the type of research that this study was designed to contribute.

## CHAPTER III METHODOLOGY

### Population and Sample

The population for this study consisted of all students with learning disabilities in the eighth grade in two middle schools in a small suburban school division in Virginia during the 1994-1995 and 1995-1996 school years. The focus on middle schools was purposeful because that is the period of a student's education during which he or she transitions from the developmental model of elementary school to the high school where demand for competitive performance is greater and stakes are higher in terms of earning of a high school diploma (Jung & Gunn, 1990; Toepfer, 1988). Also, the middle school model of teaming is characterized by a collaborative structure similar to the model typically used for inclusive service provision for students with disabilities (MacIver, 1990). Specific similar characteristics include cross-disciplinary instruction, heterogeneous grouping, flexible scheduling, and an acceptance of developmental and individual differences (Toepfer, Loundsbury, Arth, & Johnston, 1986; Walther-Thomas & Carter, 1993). It is also common for many states and school districts to measure a variety of outcomes during this transition period, providing a wealth of data for investigation (Epstein & Salinas, 1992; Lipsitz, 1991).

Two schools in the same district were chosen for a twofold reason: (a) to increase the likelihood that many competing or contributing factors in the students' outcomes would be comparable and (b) to distinguish as many factors related to special education service delivery as possible. The intention of the



selection plan was to establish equivalence of as many factors as possible to increase the ability to attribute any differences in observed outcomes to the special education process itself. The schools chosen shared a district perspective in terms of philosophy, goals and objectives, and expectations from the school board and central administration. However, they openly professed to be different in their descriptions of their special education services. One school had a clearly established reputation as an "inclusion" school; the other school described its special education services as pull-out resource.

Students in the sample were classified with learning disabilities by an eligibility committee either in the school district they attended during the period being investigated or in the district from which they had transferred. Removed from the sample were students with learning disabilities not enrolled in their assigned school program for at least two years (i.e., seventh and eighth grade). Students were selected for this study by a computer search of the December 1 Federal Child Count conducted each school year by all school districts in the United States. That database is constructed from special education class rolls produced by the school district's central office staff and distributed to individual schools for modification, if necessary, and verification by the school principal. The completed document is forwarded to the Virginia Department of Education (VDOE) for transmission to the U.S.D.E. after a review for any irregularities, such as duplicate counts.

In the case of transfer from another school district, each student's records were reviewed by an IEP committee and determined to be in order. IEP

committee agreement and parent permission were required for a student to continue in a comparable special education program after transferring to the school district. Prior-year December 1 Child Count records were used to verify previous enrollment in special education. Central Office Student Enrollment Reports were used to verify enrollment in the district during the seventh- and eighth-grade years.

For purposes of this study, students were assumed to have been accurately identified through standard processes using school-based multi-disciplinary eligibility committees of comparable membership in all schools, specifically an administrator, psychologist, special education teacher, and school social worker. That assumption is supported by the fact that an audit of federal programs by the Virginia Department of Education in December of 1994 did not find any records to be deficient or out of compliance after review of a random sample. Additionally, there were no administrative or court challenges to identification decisions of any students used for this study.

### Research Design

This investigation employed a comparative research design because the intent was to establish, through use of both qualitative and quantitative data, the existence of a causal relationship between the placement of students with learning disabilities in inclusive or pull-out special education programs and specific facets of school performance, namely, achievement, behavior, and attendance. Variables investigated in this study clustered into two categories, student variables and program variables. Student variables further clustered into

demographic and outcome variables. Background information on the school district and each school included student population, racial composition, administrative structure, staffing patterns, socio-economic data, and the number and percentage of students identified as eligible for special education services. For statistical analyses, alpha error rates were controlled at .05.

### Student Data

Data on the two groups of students, 36 students from Enterprise Middle School and 22 students from Voyager Middle School (for a total of 58), were drawn from the December 1 Federal Child Count records, Individualized Education Plans (IEPs), special education eligibility records, individual student evaluation reports, class schedules, attendance records, discipline records, report cards, and student scholastic records. Review of these data yielded the following information on each student: chronological age, gender, race, socio-economic status, education level of the mother, disability category, estimated cognitive abilities, years receiving special education services, years enrolled in the present school district, as well as report cards grades, standardized test scores, disciplinary actions, and school attendance. These last four, the measured outcomes, will be discussed at length in Chapter IV.

T-test or chi-square analyses conducted on student demographic data established the comparability of the groups in terms of their chronological age, gender, ethnicity, socio-economic status, mother's education level, estimated cognitive abilities, years receiving special education services, and years attending the current school district (see Table 1a,b,c). Students at Enterprise Middle

School averaged 14.5 years of age (SD=.597), at Voyager Middle School, 14.7 years of age (SD= .618). A t-test revealed an insignificant difference between the two (mean difference = -.2546,  $t = -1.55$ ,  $p = .126$ ). The majority of students in both settings were white, 83.3% at Enterprise and 63.6% at Voyager, representing comparability (Pearson Significance = .08896). Of the targeted students at Enterprise, 77.8% were male, 22.2% female. At Voyager, 77.3% were male, 22.7% female. Again, a statistical analysis of these numbers revealed no significant difference in ethnicity (Pearson Significance = .96430). Of the total sample, 12.1% received free or reduced-fee lunch (8.3% of the studied population at Enterprise, 18.2% at Voyager). A chi-square analysis of these data substantiated that the groups did not differ on this variable (Pearson Significance = .26393).

The groups from the two schools were also similar in terms of the education level of the mother. One hundred percent of the mothers of students at Enterprise had obtained at least a high school diploma, 50% of them had attended college, 33.3% of them earning at least a bachelor's degree. At Voyager the picture was similar. Mothers having at least a high school diploma comprised 90.9% of the group, 45.5% of them had attended college, 13.6% earning at least a bachelor's degree (Pearson Significance = .07931).

A comparison of measured cognitive abilities of the two groups of students revealed no significant differences in terms of full-scale, verbal or performance IQ. Specifically, mean full-scale, verbal, and performance IQ, respectively, for students attending Enterprise Middle were 91.52 (SD = 14.046), 90.67 (SD =

14.734), and 93.4 (SD = 15.142). Mean full-scale, verbal, and performance IQ for students at Voyager Middle were 90.14 (SD = 9.843), 90.14 (SD = 9.342), and 90.68 (SD = 12.469), respectively. T-tests revealed comparability of the groups on each of these cognitive measures (full scale, mean difference = 1.3914,  $t = .41$ ,  $p = .686$ ; verbal, mean difference = .5303,  $t = .15$ ,  $p = .881$ ; performance, mean difference = 2.6793,  $t = .70$ ,  $p = .488$ ).

Students were also comparable on two additional variables: the mean number of years that they had been receiving special education services and that they had been in the school district. At Enterprise students had been receiving special education services for a mean number of 6.7 years (SD = 1.579) and at Voyager for 6.2 years (SD = 1.435). The mean difference was .5404 ( $t = 1.31$ ,  $p = .196$ ). The mean number of years attending school in the current school district was 5.1 years (SD = 2.557) at Enterprise; 4.8 years (SD = 3.142) at Voyager. The mean difference was .2652 ( $t = .35$ ,  $p = .727$ ).

#### School District Description

The district from which the sample of students for this study was drawn is in a fast-growing suburban county with approximately 42,000 citizens of whom roughly 11,000 are public school students. The district has a reputation for high-quality programs and high-achieving students who come from homes with higher-than-state-average incomes and higher-than-state-average education levels.

Data collected by the VDOE, compiled, analyzed, and reported back to the community through the yearly Outcome Accountability Project supported that reputation by indicating the following:

- **1% of the student population was identified as having limited - English proficiency.**
- **88% of the adult population in the community held at least a high school diploma.**
- **4% of the families fell below the federal poverty level.**
- **The median adjusted gross income was \$27,749.**
- **17% of the students in the district had approved applications for free or reduced-fee lunch.**
- **81% of middle school students were absent from school 10 days or less.**
- **59% of the district's students with disabilities were absent from school 10 days or less.**
- **78% of students passed all three Literacy Passport Tests in the sixth grade.**
- **31% of students with disabilities passed all three of the Literacy Passport Tests in the sixth grade.**
- **18% of the district's teachers were minority.**
- **23% of the district's students were minority (Outcome Accountability Project, 1995).**

**The total school district population in 1994-95 was 10,566 students, according to the official Average Daily Membership report to the Virginia Department of Education. The total district population of students with disabilities was 768 (7.3%), according to the official 1994 December 1 Child Count Report**

for the USDE. Of those students, 360 were identified as learning disabled, representing 3.4% of the total population and 46.7% of the population with disabilities. Figures from 1995-96 documented that the total school district enrollment was 10,675. From that figure, 799 (7.5%) students were identified with disabilities, and 368 (3.4%) with learning disabilities. Those with learning disabilities represented 46.1% of the population of students with disabilities.

The district's school board adopted a mission statement that referenced a commitment to the learning of all students provided through equitable programs and services in a safe and orderly environment. It also approved a policy prohibiting discrimination in any of educational programs based on handicap, as required by Section 504 of the Rehabilitation Act of 1973.

#### Program Descriptions

Because the evaluation of any structure requires a clear understanding of what is being evaluated and because various versions of inclusion exist (Thousand & Villa, 1992), a detailed description of both schools' programs is critical to the integrity and the value of this study. That is, its worth depends upon the ability to attribute differences in the achievement, behavior, and attendance of middle school students with learning disabilities to the type of special education services they have received (i.e., pull-out or inclusive). Contextual influences including each school's mission statement, portions of the schools' annual planning documents related to instruction and support services, and staff development plans were considered relevant. Teacher characteristics,

such as degrees, endorsements, years of experience, and race were also examined.

### **Settings**

In order to document the similarities and differences of the two programs, rich descriptions of the two settings were generated (see Appendices A and B). Existing service delivery models were verified through teacher planning documents, supervisor observation notes, students' IEPs, teacher and student schedules, and team meeting minutes. This review of data revealed and validated various program variables, such as type and intensity of special education service delivery, skill areas addressed, amount of teacher consultation, number of students with disabilities in general education classrooms, numbers of students in pull-out instructional groups, and teacher and teacher assistant staffing patterns. Each version was substantiated through a review by the administrator in the building responsible for special education services, one of the special education teachers who taught the participants, and the director of middle schools in the school district.

Enterprise Middle School served students in grades six through eight with a teaming model; that is, that a group of students was divided into classes that rotate during the day with a group of teachers who worked and planned together. During the period of time investigated by this study, the school was staffed by a building principal, two assistant principals, and 63 classroom teachers; 58 (92%) were female, 52 (82.5%) were white. Support staff included three full-time guidance counselors, a psychologist, and school social worker who served the



building approximately one day a week each, and a substance abuse counselor contracted by the school district to work five hours per week in each middle school (see Table 2).

During the 1994-95 school year, 1,141 students attended Enterprise; 89 (7.8%) had identified disabilities, 65 (5.7%) were identified with learning disabilities. Of the students with disabilities, 73% carried an LD label. The school's student population was 16% minority and 36% military. Approximately 12% of its students were eligible for free or reduced-fee lunches. During the 1995-96 school year, enrollment at Enterprise was 1,171, of whom 108 (9.2%) had disabilities and 64 (5.5%) had learning disabilities. Students with learning disabilities represented 59.3% of the school's population with disabilities. For purposes of this study, a total of 36 students received inclusive services at Enterprise after deletion of any students who had not been in the district for at least two years.

A team of nine special education teachers served the students with disabilities assigned to Enterprise. Teacher licensure records maintained in the district's special education files to meet state compliance requirements documented teacher experience and licensure. All of the special education teachers assigned to Enterprise held master's degrees in special education. All of them were endorsed in learning disabilities (LD), five held dual endorsements in LD and emotional disturbance (ED), one in LD and mental retardation (MR), four in general education. Four of the nine special education teachers served the students in the sample during the 1994-95 and 1995-96 schools years, two each

year, representing an average pupil-teacher ratio of 1:9. Of those serving the participating students in 1994-95, one was dually endorsed in learning disabilities and emotional disturbance, the other in learning disabilities and mental retardation. One had three years of teaching experience, all in special education; the other six years all in special education. Both of the special education teachers assigned to eighth-grade teams in 1995-96 held endorsements in LD and ED. One had four years of special education teaching experience; the other, 12 (see Table 3). District records further revealed that during the period being investigated, eighth-grade students with LD at Enterprise were served by three four-person teams of general educators. All of those general education teachers held endorsements either in the content area they were teaching or in middle grades (4-8) education. The mean number of years of teaching experience was 17.3. Of the 12, 4 (33%) held master's degrees (see Table 4).

Like Enterprise, Voyager Middle School served students in grades six through eight with a teaming model, each eighth-grade team consisting of four teachers who rotated groups of students throughout the day. The school was staffed during the period of this study by a building principal and two assistant principals, 52 classroom teachers; 48 (92%) were female, 42 (81%) were white. Support staff included two full-time guidance counselors and a part-time school psychologist, school social worker, and substance abuse counselor (see Table 2).

During the 1994-95 school year, 944 students attended Voyager. Of those students, 53 (5.6%) were students with identified disabilities, 31 (3.3%) of whom

had learning disabilities. Of the identified students, 58.6% carried an LD label. Enrollment at Voyager during the 1995-96 school year was 984, of whom 45 (4.6%) had disabilities, 27 (2.7%) LD. Students with LD represented 60% of the school's population with disabilities. The school's student population was 25% minority and 18% military. Approximately 19% of its students were eligible for free or reduced lunches.

Four special education teachers served the students with disabilities assigned to Voyager Middle, three per year during the years of this study. One teacher left between the 1994-95 and 1995-96 school years. One of the four taught a self-contained class of students with mental retardation and had no involvement with the instruction of the participants whose outcomes are measured through this research. The district's teacher licensure records documented that all four of the teachers in question held master's degrees; two were endorsed in LD and ED; one was endorsed in LD and was working on endorsement in MR; the fourth was endorsed in ED and MR. Of the three special education teachers, one had 10 years of experience in special education, one had six years, and the other, two years, for an average of six years special education teaching experience (see Table 3). District records further revealed that during the period from which data were drawn, eighth-grade students with LD were served by two four-person teams of general educators. That group of students received special education services from two teachers each year for a pupil-teacher ratio of 11:1. All of those general education teachers held endorsements either in the content area they were teaching or in middle grades

(4-8) education. The mean number of years of teaching experience was 18.7. Of the eight, 3 (38%) held master's degrees (see Table 4).

Given this demographic frame, the subsequent step was to target specific programmatic variables, including number and nature of IEP goals and objectives, degree of classroom accommodation, and amount of special education service delivery that students in the two groups received. Objective data related to number of accommodations and amount of special education service students received were collected from a review of IEPs. Information on special education service delivery time was gathered from IEPs and then cross-checked with each student's class schedule. In order to determine types of IEP goals and objectives developed for students in each group, a panel of graduate students was requested to code goals and objectives by category [Standards of Learning (SOLs), remedial basic skills, thematic units, learning strategies/ study skills, affective/ behavioral skills, or vocational/career skills]. Coders were provided with directions, a copy of the school district's curriculum, a coding form, and approximately one-third each of the IEPs (See Appendix C). Ten percent of the IEPs were duplicates in order to establish inter-rater reliability. The predetermined required level of consistency was 80%. The group actually achieved a 92% consistency rate.

A systematic examination of IEPs of students in both groups was conducted with the assumption that the content of the IEP was reflective of the curriculum taught through special education. Several features of the documents, including number and types of goals, number and types of objectives, number

and types of accommodations, and amount of time per week each student received special education services suggested significantly different programs.

### IEP Goals

Data indicated that IEPs developed at Enterprise contained significantly more instructional goals than those at Voyager (see Table 5). The mean number of goals for students receiving inclusive services was 3.22 (SD=1.198); 2.50 (SD = 1.144) at Voyager. The mean difference between the two was .7222 ( $t = 2.27, p = .027$ ). Looking at specific categories of goals developed for each group of students, significant differences were found in two categories: those focused on general education curriculum (SOLs) and those focused on remedial skills. IEP committees at Enterprise established goals for students included in general education that reflected school district learning expectations for its eighth graders. IEP committees at Voyager focused on academic deficits and established goals to remediate them. At Enterprise students averaged 1.67 (SD = 1.242) goals related directly to general education curricula. At Voyager the mean number of goals reflective of general education curriculum was .1364 (SD = .465). The mean difference was 1.5303 ( $t = 6.66, p = .000$ ). Conversely, data on a remedial approach to instruction in both schools are reflected. Voyager staff concentrated on teaching remedial basic skills in the pull-out program, as evidenced by the mean number of goals that were remedial in nature (1.91, SD = 1.065). At Enterprise the number of goals focused on remediation of academic deficits was .92 (SD = 1.079). The mean difference in the two groups was -.9924 ( $t = -3.42, p = .001$ ).

In terms of IEP goals, areas showing nonsignificant findings were in goals to teach learning strategies and to address student behavior. Enterprise developed an average of .389 (SD = .549) IEP goals targeted toward learning strategies for included students with learning disabilities while Voyager developed an average of .363 (SD = .727) goals to train students to use learning strategies. The mean difference in the two groups was .0253 ( $t = .15, p = .881$ ). Likewise there was no demonstrated difference in the number of goals for either group intended to impact student behavior. Enterprise's included students had a mean number of goals targeted at behavior of .250 (SD = .604); Voyager's resource students had a mean number of .091 (SD = .294). The mean difference was .1591 ( $t = 1.34, p = .185$ ). It should also be noted that no IEP in either group had goals for thematic units or vocational/career skills.

### IEP Objectives

Moving to another level of detail, analyses of IEP objectives (specific performance expectations) revealed that IEPs written for inclusive services contained significantly more objectives than did those written for pull-out service delivery (see Table 6). Enterprise developed an average of 10.89 (SD = 5.002) objectives for each student served in general education settings. Voyager developed an average of 7.59 (SD = 4.33) objectives for each student served in pull-out special education settings. The mean difference was 3.2980 ( $t = 2.56, p = .013$ ).

In terms of type of IEP objectives, there were two areas in which statistically demonstrable differences emerged: those focused on general

education curricula and those targeting student behavior. Enterprise developed statistically significantly more objectives reflective of general education curricula than did Voyager. IEPs of students receiving inclusive services contained an average of 4.72 (SD = 3.186) SOL objectives while those of students receiving pull-out services contained an average of .45 (SD = .739). The mean difference between the groups was 4.2677 ( $t = 7.71, p = .000$ ).

IEPs for included students at Enterprise contained a mean number of objectives related to behavior of .69 (SD = 1.864), while for students at Voyager who received pull-out services, the mean number was 1.86 (SD = 2.054). The mean difference was -1.1692 ( $t = -2.23, p = .03$ ).

Data analyses revealed no significant differences between the two groups in mean number of IEP objectives for remedial basic skills or for learning strategies. Students in inclusive classrooms at Enterprise averaged 3.36 (SD = 2.820) objectives focused on remedial skills. Students in pull-out programs at Voyager demonstrated an average of 4.13 (SD = 3.121) objectives for remedial instruction. The mean difference was -.7753 ( $t = -.98, p = .333$ ).

Nor were there discernible differences in the number of IEP objectives designed to teach learning strategies. The mean number for included students at Enterprise was 1.97 (SD = 1.920); for Voyager, 1.13 (SD = 1.424). The mean difference was .8359 ( $t = 1.90, p = .063$ ). As with IEP goals, there were no objectives for any student for thematic units or vocational/career skills.

## **Accommodations**

**Analyses of the two schools revealed statistically different implementation patterns for accommodations in the classroom (see Table 7). It is important to consider that accommodations even for students in pull-out special education programs are intended for use in general education classrooms. Students receiving their special education services in general education classes at Enterprise required an average of 14.8 (SD = 6.189) accommodations. Students receiving special education services in pull-out special education classes at Voyager required an average of 5.6 (SD = 2.258) accommodations. The mean difference was 9.1136 ( $t = 8.01, p = .000$ ).**

**Accommodations fell into three categories: instruction, assessment, and behavior (see Appendix D). Instructional accommodations numbered 7.9 (SD = 3.353) for the included group; 3.5 (SD = 1.566) for the group served through pull-out programs. The mean difference between the groups was 4.3889 ( $t = 6.74, p = .000$ ). The mean count of classroom assessment accommodations for students at Enterprise was 5.9 (SD = 2.856); for students at Voyager, 1.8 (SD = .869). The mean difference was 4.1162 ( $t = 8.06, p = .000$ ). There was also a significant difference in implementation of accommodations to address student behavior. IEP committees at Enterprise incorporated an average of .97 (SD = 1.183) behavioral accommodations into IEPs for students in inclusive classrooms. Those at Voyager included an average of .36 (SD = .727) behavioral accommodations into IEPs of students in pull-out programs. The mean difference was .6086 ( $t = 2.17, p = .034$ ).**



### Time Receiving Special Education Services

The final element of the two programs that was analyzed statistically was time that students in each group received special education services (see Table 8). At Enterprise, special education teachers were assigned to instructional teams on which students with disabilities were placed. Service delivery time was designated in minutes per week. For included students, the number of minutes that they received special education intervention averaged 740 (SD = 265.341). At Voyager, special education teachers pulled students out of general education classes to provide serves an average of 252. 27 (SD = 152.876) minutes per week. The mean difference between groups was 487.7273 ( $t = 9.08, p = .000$ ).

### Outcome Measures of Student Performance

Three indicators of student outcomes were measured: academic achievement, behavior, and school attendance. Measures of academic achievement included highest scores, pass/fail rates, number of administrations, and nonstandard administrations on the reading, mathematics, and written language subtests of the LPT; standard scores on the reading, mathematics, science, and social studies subtests of the ITBS; and final course grades in the eighth grade language arts, mathematics, science, social studies curricula.

Following is a description of those indicators:

#### Description of the Standardized Tests

##### The Virginia Literacy Passport Tests

In its 1986 report, the Virginia Commission on Excellence in Education recommended the establishment of the Literacy Passport Testing Program (LPT)

as one of the ways to break the cycle of illiteracy and disparity, admitting that no system claiming excellence can produce thousands of functionally illiterate individuals each year (Spagnola & Redfield, 1991). The high cost of illiteracy and/or retaining students was noted. The Virginia Board of Education and the Department of Education responded to the Commission's recommendations by developing the Literacy Passport Program now in place in the public schools of the state. In 1987 the Board adopted new Standards for Accrediting Public Schools in Virginia, which included requirements for the LPT.

The intent of the Commission in recommending the LPT was to ensure that students had necessary basic skills in reading, writing, and mathematics. The LPT was placed in the sixth grade and determined to be necessary for promotion to ninth grade because the middle school years were seen as a time when attitudes and achievement patterns have become established and students at risk of dropping out can be identified. The possession of a Literacy Passport is a requirement for a regular or advanced diploma for all students who are enrolled in a Virginia public school. Of particular concern to the Commission was that the program promote effort and not be seen as punitive. The emphasis was on early identification of students at risk of dropping out and in need of intervention and remediation. For students unable to meet the LPT requirement for promotion to ninth grade, the Board required school divisions to provide a program that leads to one or more of the following outcomes: passing the LPT for high school graduation, General Education Diploma (GED), certification of program completion, or job entry skills (Spagnola & Redfield, 1992a).

The tests that comprise the Literacy Passport were either selected or developed to assess the Standards of Learning (SOL) objectives in reading, language arts, and mathematics in the Commonwealth. Students obtain the Literacy Passport by passing all three subtests administered by the Department of Education. The program began with students who were classified as sixth graders during the 1989-1990 school year and hence affected the graduation status of twelfth graders in 1995-1996.

Students with disabilities served through an individualized education or service plan, as defined by either IDEA or Section 504, are not required to have obtained Literacy Passports to be classified as ninth graders and are eligible for accommodations in the administrations of the tests (Spagnola & Redfield, 1992).

Students who have not passed all portions of the LPT must be offered the opportunity to take them at each LPT administration. Although students may attend ninth, tenth, eleventh, or twelfth grade and be awarded credit for courses that they complete successfully, no student, including those with disabilities, may be granted a regular or advanced diploma without first obtaining a Literacy Passport (Spagnola & Redfield, 1992b).

The LPT is comprised of three domains. The Reading Domain scores report how well the student is able to understand or construct meaning as he or she reads a selection. This test assesses the reader's ability to predict a missing word using information in surrounding text. The reading selections on the test are nonfiction and range from 300 to 350 words in length. The Mathematics Domain is designed to determine how well the student is able to perform various

computational and problem-solving functions. Finally, the Writing Domain measures how well the student is able to write a paper on an assigned topic. The writing score is obtained by assigning a numerical value to the performance on each area: composing, style, sentence formation, usage, and mechanics.

Reading comprehension domain. Reading comprehension for the LPT is assessed by a commercially developed test, the Degrees of Reading Power (DRP). The DRP consists of reading selections, with a series of word choices to assess a student's understanding of the meaning of the passage. The test has been selected by Virginia educators as an appropriate means of assessing the outcome of the reading comprehension objectives of the Standards of Learning.

Evidence of the validity of the DRP as a measure of reading comprehension comes from several different sources. The DRP has correlations of .80 to .88 with three other tests designed to measure reading comprehension and is more highly correlated with tasks requiring reading comprehension than with tasks assessing vocabulary. Several types of reliability information are reported for the DRP, including:

- internal consistency, or the degree to which students respond consistently to the items on a test, with reliability coefficients of .93 to .97; and
- alternate form reliability, or the degree to which different parallel forms of the test, administered over a short period of time, yield consistent results, with a reliability coefficient of .91.

Additional studies conducted by the test developer show that scores do not change significantly, with the exception of a guessing effect for the lowest score group, when the test is given two weeks apart. Yet, test scores do change significantly after five months, with most students retaining the same rank order of scores. These findings support both the stability of the DRP measure and its ability to detect growth in student learning. According to statistical bias analyses of test data, the DRP appears to measure reading comprehension equally well for African Americans, Hispanics, and Caucasians; for low and high socioeconomic groups; and for males and females (Touchstone Applied Science Associates, 1992).

Writing domain. The writing test of the LPT was developed by the Virginia Department of Education to measure relevant SOL objectives in the language arts. The test requires students to write a composition in response to an extended topic called a prompt. The test models the writing process by suggesting to students that they plan, draft, revise, edit, and proofread their work. Essays are scored on each of five domains: composing, style, sentence formation, usage, and mechanics.

The scoring rubrics for the domains are based on theory and research in the development of children's writing ability, which supports the test's validity. Based on this research and the curricular emphasis of the writing objectives, in determining the final score, composing is weighted three times; style, two times; and sentence formation, usage, and mechanics once. Additional evidence of the validity of the writing test comes from a factor analysis of scores on 10 writing

**prompts. The results of the analysis support the claim that the scores in the five different domains measure different aspects of student writing. The factor analysis supports the curricular decision to weight more heavily the composing and style domains in computing the overall score. The factor identified by these two domains accounted for 55% of the variability of the scores of the total of 95% variability in the analysis.**

**The interrater reliability of the LPT writing subtest, the agreement between raters on a test score, is typical of reliability coefficients for other tests requiring judgment in scoring. The overall score is the sum of the scores on each domain assigned to the composition by two independent readers with the appropriate weights used. Each domain is scored on a 4-point scale, with 4 being the highest score on a domain. Thus, the scores on a composition can range from a low of 16, when both raters give a 1 to all domains, to a high of 64, when both raters give all 4 points.**

**Potential readers are trained through the use of anchor papers with predetermined scores, including a discussion of each of the five domains. Before being accepted as scorers, potential readers must meet specified criteria of accuracy in scoring. Their accuracy is also monitored throughout the process. Periodically, sets of papers that have been discussed and scored by experts are scored by all LPT readers. LPT readers who do not meet accuracy criteria, established by the experts on these papers, are retrained. The compositions scored by readers who are found to be insufficiently accurate are scored again by readers who have met accuracy criteria.**

Statistical bias analyses were conducted on the pilot data for the writing prompts. Only those prompts that appeared unbiased to African Americans and Caucasians and males and females were selected for use in the LPT.

Mathematics domain. The mathematics test was designed by the Virginia Department of Education. To maximize its content validity, the test blueprint and item specifications were derived directly from the SOL objectives in mathematics. Items were designed to reflect skills found in the SOLs, in terms of both content and emphasis. The test blueprint, which specifies the weighting of each SOL objective assessed on the test, was developed by Virginia educators. The item specifications, which govern how items were written for the test, match the characteristics of the SOL objectives. Before being included on the test, items were reviewed for correspondence to the item specifications, and then, through the specification development process, to the mathematics SOLs.

Evidence for the reliability of the mathematics test was obtained through a measure of internal consistency, the degree to which students respond consistently to the items on a test. The reliability coefficient of the base form of the test was .93. Mathematics items used in the base form were examined using statistical bias indices for African American and Caucasian students to eliminate any racial bias in selection of items (Spagnola & Redfield, 1992a).

Validity, reliability, and lack of bias. The validity, reliability, and lack of bias of the LPT were determined through statistical computations as well as the judgment and advice of experts. Psychometric standards for the development and use of tests are the Standards for Educational and Psychological Tests,

prepared by a joint committee of the American Psychological Association, the American Educational Research Association, and the National Council on Measurement in Education. Qualified staff of VDOE determined that the LPT met the standards (Spagnola & Redfield, 1991).

The LPT developers addressed both score reliability (i.e., accuracy and consistency of scores) and bias (i.e., possibility that factors other than proficiency in content being measured could affect student performance). Common to all three domains of the LPT is the inspection of the test components (i.e., reading selections and related items for the reading test, prompts for the writing test, mathematics test items) by a bias review committee. The committee's task was to review the tests for potential offensiveness to any groups of students taking the tests and for student characteristics that could impact their performance. The bias review committee consisted of a representative from each of the seven superintendent's Regional Study Groups and four organizations: the Virginia Congress of Parents and Teachers, the National Organization for Women, the National Association for the Advancement of Colored People and the American Civil Liberties Union.

The validity of using test scores to act as barriers for students relates to the process used to set the cut scores. In the LPT, a modified Angoff procedure has been used to set cut scores on the three tests. As the first step in the Angoff procedure, a panel of educators and parents were provided an overview of the test content to determine how the test results would affect students. Next, the panel determined item performance that would match the degree of proficiency



necessary for students in sixth grade. In addition to considering the content coverage of the test, the standard-setting panel reviewed data on test items to assess the reasonableness of the proficiency judgments. The second step in the procedure was for VDOE staff with measurement and content expertise to use data from the pilot administration of the LPT to analyze and review the cut scores resulting from the proficiency judgments. Finally, the Virginia Board of Education approved the proposed cut scores.

Collection of evidence concerning the validity and fairness of the LPT is an ongoing process. At each administration of the LPT, VDOE staff collect additional information about the technical characteristics of the test, such as decision reliability and generalizability of the writing prompts, and use that information to design test items and develop alternate test forms, when appropriate.

#### The Iowa Tests of Basic Skills (ITBS)

The ITBS published by the Riverside Publishing Company is a battery of nationally standardized tests that measure student achievement in specific skills in vocabulary, reading, mechanics of writing, methods of study, and mathematics (Riverside Publishing Company, 1986). Intended for use in grades three through nine, the tests were required at grades four and eight in the Commonwealth of Virginia as a part of a plan to provide comprehensive and continuous measurement of student progress at the individual, classroom, school and school division levels. In each curricular area, scores represent the range of skills from low-level grade three through superior-level grade nine. Each of the tests is

organized into six overlapping levels of skills development that correspond roughly to chronological age.

Tests may be administered under one of three testing plans. The Graded Testing Plan consists of administering a single level of the tests in each grade. The Functional Level Plan consists of administering only one level to a given grade group with the choice of level dependent on the average level of skill development of the grade group tested. Finally, the Individual Testing Plan consists of administering different levels of the test to different pupils in the same classroom based on the estimated skill level of each individual student.

Adaptations may be made in order to assess most students without altering requirements for standardization. However, departure from standard test administration conditions is taken into account when tests are scored and can result in removal from analyses of certain group scores. Administering tests orally, extending time limits, giving some tests but not others, or varying levels across tests for individual students are all examples of nonstandard administration.

A common developmental score scale is necessary to translate individual test data into objective, easily understood terms that allow for measuring growth and for comparing performance across levels of tests. The ITBS provides two score scales, the grade-equivalent (GE) and the developmental standard score (DSS), which are both computed from raw scores.

The GE scale is a continuous score scale with a range from zero to 140. The numerals in the scale represent grade levels in the total range of

development of the basic skills from the beginning of school to superior performance at the end of junior high school. The unit of measurement is one-tenth of a year's growth. Grade equivalents are converted to percentile ranks in grade, stanines, and normal-curve equivalents for fall, mid-year, and spring. They may also be converted to and from developmental standard scores.

Developmental standard score means for all tests are 100 in grade three (fall) and 160 in grade eight. Therefore, the average annual growth across grades three through eight is 12 points. The standard score scale was designed to provide continuity with the Tests of Achievement and Proficiency in grades nine through 12.

Reliability for the ITBS varies from test to test and grade to grade. Internal consistency reliability coefficients for the five main area scores range from .84 to .96, with composite reliability at .98 for all grades. Content specifications for the ITBS are based upon more than 50 years of research in curriculum, measurement, and test interpretation and use. The 248 skills objectives were determined through systematic consideration of courses of study, statement of authorities in methods, and recommendations of national curriculum groups. The item selection process involved combinations of empirical and judgmental procedures, including evaluation by representative professionals from diverse cultural groups and geographical backgrounds. Test items were reviewed by staff members and outside members of minority groups for possible content bias. A national items bias study was conducted during field tests involving 4300 students per grade in 35 states. Potentially biased items were removed from the

item bank. A review of items was also undertaken to eliminate sex-role stereotyping, to represent equally the historic and current achievements of women and men, and to include approximately equal numbers of male and female proper nouns, pronouns, and other referents, and to use universal or neutral language to avoid sex-role identification in inappropriate situations.

The ITBS was standardized jointly with the Cognitive Abilities Test and the Tests of Achievement and Proficiency. The scores of approximately 15,000 students were used to establish the fall norms of 1984. Spring norms were established on a 33% representative subsample in 1985. Criteria used in selecting and weighting were region, size of school district, family income, and education.

#### Course Grades

Course grades were teacher-determined measures of student achievement in each course reported in letters based on the district-approved point system (A=94-100, B=85-93, C=75-84, D=69-74, F=0-68), evaluating student work, such as tests, quizzes, classwork, homework, and projects. Final course grades in language arts, mathematics, science, and social studies were collected from student report cards.

#### Student Behavioral Infractions

School behavior was defined for purposes of this study as actions that resulted in out-of-school or in-school suspension (e.g., disruption, disobedience, fighting). Data were collected from student scholastic records and cross-referenced for accuracy with district records.

### **School Attendance**

**School attendance was determined by the number of days per school year each student was absent from school. Information was gathered from student attendance records and cross-referenced for accuracy with district official computerized attendance records.**

### **Specific Null Hypotheses**

**Null hypotheses tested were as follows:**

- 1. Middle school students with learning disabilities served in inclusive classrooms did not achieve higher course grades in language arts, mathematics, science, and social studies than middle school students with learning disabilities served in pull-out special education programs.**
- 2. Middle school students with learning disabilities served in inclusive classrooms did not demonstrate higher scores on the language, reading, mathematics, science, and social studies subtests of the ITBS than middle school students with learning disabilities served in pull-out special education programs.**
- 3. Middle school students with learning disabilities served in inclusive classrooms did not demonstrate higher scores on the reading, writing, and mathematics domains of the Virginia Literacy Passport Tests than students with learning disabilities served in pull-out special education programs.**
- 4. Middle school students with learning disabilities served in inclusive classrooms did not experience fewer in-school and out-of-school**

suspensions than students with learning disabilities served in pull-out special education programs.

5. Middle school students with learning disabilities served in inclusive classrooms did not attend more days of school than middle school students with learning disabilities served in pull-out special education programs.

### **Statistical Analyses**

In order to test these hypotheses, data on the performance of the two groups of students were analyzed using t-tests and chi-square tests to identify any significant differences. To measure differences in course grades, t-test were employed. An investigation of achievement on the standardized measures, the ITBS and the LPT, necessitated both t-tests and chi-square tests. T-test analyses were conducted to ascertain significant differences in the highest scores and the number of administrations of each domain of the LPT. Chi-square analyses yielded appropriate data on pass-fail rates and non-standard administrations of each domain. The ITBS data were probed by t-tests for standard score differences and by chi-square analyses for nonstandard administrations. In-school and out-of-school suspension rates as well as attendance were analyzed using t-tests.

### **Summary of Methodology**

This study attempted to determine the relationship between type of special education service delivery, inclusive or pull-out, middle school students with learning disabilities received and certain academic, behavior, and attendance

outcomes. The research design was causal comparative, employing existing archival data on students and school programs. The sample consisted of 58 students with learning disabilities served in two middle schools in a Virginia school district.

Student data were gathered from Federal Child Counts, Individualized Education Plans (IEPs), special education eligibility records, individual student evaluation reports, class schedules, attendance records, discipline records, report cards, and student scholastic records. Those sources yielded the following information: chronological age, gender, ethnicity, socio-economic status, education level of the mother, estimated cognitive abilities, years receiving special education services, years enrolled in the present school district, as well as course grades, standardized test scores, disciplinary records, and school attendance. Program data were gathered from teacher schedules and planning documents, team meeting minutes, student schedules, supervisor observation notes, and IEPs. Based on a compilation of these data, a picture of each school setting, special education services provided in each, and student outcomes was constructed.

## CHAPTER IV

### FINDINGS AND RESULTS

**This chapter presents results of the statistical analyses of the data set drawn from two groups of eighth-grade students with learning disabilities, one served in an inclusive educational setting, the other served through a pull-out special education program. Indicators measuring academic achievement, behavior, and attendance were compared to determine whether inclusive or pull-out special education service delivery produced better outcomes for students with learning disabilities. T-tests and chi-square analyses were performed to ascertain the relationship between the independent and dependent variables.**

**This chapter is organized into sections corresponding to the five hypotheses listed in Chapter III. The results of statistical analyses of the data are presented in summary form in tables accompanied by a description of their significance in narrative form. A determination of the ability to accept or reject the specific null hypothesis based on the data concludes each section.**

#### Hypothesis 1

***Middle school students with learning disabilities served in inclusive classrooms will not achieve higher course grades in language arts, mathematics, science, and social studies than middle school students with learning disabilities served in pull-out special education programs.***

**Data related to the first hypothesis indicated that students with learning disabilities served in inclusive classrooms earned significantly higher grades in all four primary areas of academic instruction (see Table 9). An investigation of**



language arts revealed that 100% of students at both Enterprise Middle School and Voyager Middle School received instruction in language arts. Students in both schools earned grades ranging from F(0) to A (4). However, students in inclusive classes at Enterprise earned significantly higher language arts grades. The mean course grade for students at Enterprise was 2.4 (SD = .806), for Voyager, 1.8 (SD = 1.020), resulting in a significant difference between means (mean difference = .6439,  $t = 2.67$ ,  $p = .01$ ). Thirty-three (91.7%) students at Enterprise passed language arts with a grade of C or better, indicating average or above-average achievement. By comparison, at Voyager, 14 (63.6%) students passed with average or above-average achievement (see Tables 10 and 11).

Course achievement in mathematics in which 100% of the sample from both schools received instruction also was statistically better for students educated in inclusive classrooms (see Table 9). Course grades for both groups ranged from F to A. The mean course grade for students at Enterprise was 2.4 (SD = 9.69), while the mean score for students served in pull-out special education was 1.8 (SD = .853). Once again, this represented a statistically significant difference between means (mean difference = .6263,  $t = 2.50$ ,  $p = .016$ ). Thirty-one (86.1%) students receiving inclusive services made a C or better for their final report card grade in mathematics. Sixteen (72.7%) students at Voyager passed mathematics with a grade of C or better (see Tables 10 and 11).

Students served in inclusive settings also earned better grades in science (see Table 9). Again, the range was from F to A for the students at both Enterprise and Voyager. The mean course grade in science for students at

Enterprise was 2.6 (SD = 1.079); at Voyager, 1.6 (SD = .908). This represented a significant difference in the means (mean difference = .9924,  $t = 3.60$ ,  $p = .001$ ). Thirty-two (88.9%) students at Enterprise received a grade of C or better in science on their report cards, compared to 13 (59.1%) students at Voyager. One hundred percent of the students at both schools received instruction in science (see Tables 10 and 11).

Students in inclusive classrooms for social studies instruction also earned significantly higher course grades (see Table 9). One hundred percent of students at both schools participated in science instruction to earn a grade. The grades at Enterprise ranged from A to F; at Voyager from B to F. The mean for Enterprise was 2.28 (SD = .944). The mean for Voyager was 1.59 (SD = 1.008). This reflected a significant difference in means for the groups (mean difference = .6869,  $t = 2.62$ ,  $p = .011$ ), with students in inclusive programs performing better than those in pull-out programs. Thirty-one (86.1%) students served in inclusive settings received a course grade in science of C or better. By comparison, 11 (50%) students served in pull-out programs received a grade of C or better (see Tables 10 and 11).

In summary, middle school students with learning disabilities served in inclusive classrooms achieved significantly better course grades in language arts, mathematics, science, and social studies. Therefore, Hypothesis 1 was rejected.

### Hypothesis 2

*Middle school students with learning disabilities served in inclusive classrooms will not demonstrate higher scores on the language arts, reading*

*comprehension, mathematics, science, and social studies subtests of the Iowa Tests of Basic Skills (ITBS) than middle school students with learning disabilities served in pull-out special education programs.*

Of the total sample group, 54 students ((93.1%) participated in the ITBS testing in their eighth-grade year. Four students (6.9%) were exempted from taking the tests by their IEP committees. None of those four took any portion of any of the subtests. Thirty-four (62.9%) of the total tested group of students were from Enterprise; 20 (37.0%) were from Voyager. At Enterprise, 34 (94.4%) of the included students were tested; two (5.6%) were not tested. At Voyager, 20 (90.0%) students took the test; two students (9.1%) were not tested.

Statistical analyses of the standard scores on the ITBS subtests produced mixed results (see Table 12). A significant difference was found between the means of the two groups on the language and mathematics subtests. For example, on the language subtest, students at Enterprise achieved a higher mean standard score (mean = 143.2, SD = 18.698) than did students in pull-out programs at Voyager (mean = 130.9, SD = 19.448), resulting in a mean difference of 12.3265 ( $t = 2.31, p = .025$ ). The relative difference would not have been impacted by nonstandard administration. Thus, the data revealed that the number at Enterprise who took the language subtest under nonstandard conditions did not differ from that at Voyager (see Table 13). Thirty-one (91.2%) of the 34 tested students served in inclusive settings participated in the language testing under standard conditions, three (8.8%) under nonstandard conditions. At Voyager, the figure for standard administration was 20 (100%) of the 20 tested, 0

for nonstandard. A chi-square analysis produced a Pearson significance level of .34705.

An analysis of the mathematics subtest of the ITBS also revealed significant variability in the mean scores of the two groups. The students being served in Enterprise's inclusive program averaged a standard score of 150.2 (SD = 18.301), whereas, the students served in Voyager's pull-out program earned an average standard score of 139.9 (SD = 12.100), resulting in a mean difference of 10.3353 ( $t = 2.25, p = .029$ ). This variability between the two means would not be impacted by nonstandard administrations. Data revealed that at Enterprise, 30 (88.2%) of the 34 tested students were administered the test under standard conditions, 4 (11.8%) under nonstandard conditions. At Voyager, 19 (95%) of the tested students were administered the test under standard conditions, one student (5%) under nonstandard conditions. A chi-square analysis produced a Pearson significance level of .62340.

Students in the two groups did not achieve different mean scores on the reading comprehension subtest of the ITBS (see Table 12). Students at Enterprise earned a mean standard score of 143.9 (SD = 21.277); students at Voyager earned a mean standard score of 138.7 (SD = 22.806). The mean difference was 5.2412 ( $t = .85, p = .399$ ). As for the language and mathematics subtests, these subtest scores would not be affected by the number of students in each group administered the test under nonstandard conditions (see Table 13). The participation rates and nonstandard administrations data from the two schools on the reading comprehension subtest were identical to that of the

language subtest: Enterprise tested 31 of the 34 students (91.2%) under standard conditions; Voyager tested all 20 (100%) under standard conditions. By a chi-square analysis, the resulting Pearson significance score was .34705.

There was not a significant discrepancy between the mean standard score on the science subtest of the ITBS for students at Enterprise receiving inclusive educational services and students attending Voyager receiving pull-out special education services (see Table 12). The mean standard score of the former group was 150.5 ( $SD = 28.271$ ). The mean standard score for the latter group was 151.3 ( $SD = 30.2$ ). The mean difference was  $-.8294$  ( $t = -.10$ ,  $p = .920$ ). Data supported that these scores were not skewed by the number of students using nonstandard accommodations in the testing situation (see Table 13). Of the 34 students tested on the science subtest at Enterprise, three (8.2%) did so under nonstandard conditions, 31 (91.2%) under standard conditions. A similar profile emerged at Voyager. All of the 20 students tested there were administered the science subtest under standard conditions. A chi-square analysis of this difference resulted in a Pearson significance of .34705.

Both groups of students demonstrated similar mean standard scores on the social studies subtest of the ITBS. Specifically, students receiving inclusive services at Enterprise earned a mean standard score of 146.2 ( $SD = 30.332$ ). Those receiving pull-out special education at Voyager earned a mean standard score of 147.3 ( $SD = 24.681$ ). The mean difference was  $-1.0941$  ( $t = -.14$ ,  $p = .892$ ). The pattern of standard administration of the science subtest was comparable to that of the other subtests; that is 31 (91.2%) of the 34 students

tested in Enterprise used standard procedures, three (8.8%) nonstandard accommodations. At Voyager all of the students took the science subtest under standard conditions. A chi-square analysis of these data resulted in a Pearson significance score of .34705.

In summary, statistical analyses of data gathered on student performance on the ITBS subtests, including mean scores and number of students requiring nonstandard accommodations, revealed that students with learning disabilities receiving inclusive special education services achieved higher standard scores on the language and mathematics subtests than students with learning disabilities receiving pull-out special education services; the two groups earned similar scores on the reading comprehension, science, and social studies subtests. Therefore, Hypothesis 2 was rejected.

### Hypothesis 3

*Middle school students with learning disabilities served in inclusive classrooms will not demonstrate higher scores on the reading, writing, and mathematics subtests of the Virginia Literacy Passport Tests (LPT) than middle school students with learning disabilities served in pull-out special education programs.*

A review of data on the performance of the sample groups on the LPT revealed that 57(98.3%) students took the tests: 36 (100%) at Enterprise and 21 (95.4%) at Voyager (see Table 14). Analyses of highest scores for the LPT reading subtest yielded an insignificant difference in the mean score of the two groups. Students served in inclusive settings earned a mean score of 257 (SD =

10.262). Students served in pull-out special education programs earned a mean score of 253 (SD = 12.015). This did not indicate a significant difference when a 2-tail t-test was conducted (mean difference = 3.4960,  $t = 1.16$ ,  $p = .249$ ). Nor did a chi-square analysis of pass-fail rates reveal a significant difference between the two groups (Pearson significance = .19644) (see Table 15). Thirty-two (88.9%) students in Enterprise passed the LPT reading subtest before exiting eighth grade to enter high school. Four (11.1%) of that group failed to pass the reading subtest before entering ninth grade. At Voyager results were similar, with 16 (72.7%) passing before exiting middle school and six (27.2%) not passing prior to entrance into high school. The latter figure represents one student at Voyager who was exempted from the testing by the IEP committee. Functionally, an exemption has the same ultimate impact on a student as failure to pass the LPT, that is, rendering him or her ineligible for high school graduation with a regular or advanced diploma.

Accommodations in the number of times students in each group took the reading subtest or the number who required specific testing modifications did not differ significantly between the groups (see Table 15). Students in inclusive classrooms required an average of 2.14 testing opportunities to earn a passing score on the reading subtest; those served in pull-out special education programs required an average of 2.05 testing opportunities. A 2-tail t-test showed no significant difference in the means (mean difference = .0934,  $t = .24$ ,  $p = .807$ ).

Thirty-four (94.4%) of the 36 students at Enterprise required no testing accommodations for the reading subtest, according to their IEP committees. By

comparison, 21 (100%) of the tested population at Voyager required no accommodations (chi-square significance = .23930) (see Table 15).

Next, data on student performance on the mathematics subtest of the LPT were analyzed using the same statistical tests, again revealing nonsignificant differences in the means for the groups (see Table 14). The mean highest score for students served in inclusive classrooms was 255 (SD = 6.446). For students served in pull-out special education programs, the mean highest score on the mathematics subtest was 254 (SD = 5.006). The mean difference was .8294 ( $t = .51, p = .614$ ). Pass-fail rates showed that 32 (88.9%) students attending Enterprise passed the mathematics subtest before exiting eighth grade. Four (11.1%) students in that group did not pass the subtest before leaving middle school. At Voyager, 19 students (86.4%) achieved a passing score on the mathematics subtest before entering high school. Two students did not pass and one student (13.6%) was exempt from the testing. A chi-square analysis of the pass-fail rate showed no significant difference (Pearson significance = .42739).

Neither the number of times the mathematics subtest of the LPT was administered nor the number of students in each group who required modifications in the testing situation differed significantly between the two groups. That is, students receiving inclusive services took the subtest an average of 1.97 (SD = 1.183) times, whereas students in pull-out special education programs averaged 1.86 (SD = 1.356) attempts to pass that subtest. This represented an insignificant difference (mean difference = .1086,  $t = .1086, p = .749$ ) (see Table 14).



**Students requiring modifications for testing according to their IEP committees numbered four at Enterprise, constituting 11.1% of the total group of students with learning disabilities in that testing pool. Thirty-two students (88.9%) required no testing modifications or accommodations. At Voyager, three of 21 students tested required testing accommodations or modifications, representing 13.6% of the total there. One student at Voyager was exempted from the testing by his or her IEP committee. A chi-square analysis not did support a significant difference (Pearson significance = .40908) (see Table 15).**

**Student performance data on the writing subtest of the LPT are indicative of a similar pattern (see Table 14). As was the case with the other two subtests, 57 (98.2%) students were in the testing pool. The mean highest score for the included students (255, SD = 10.992) did not differ significantly from the mean highest score for the students served in pull-out special education programs (258, SD = 10.868). A 2-tail t-test documented that the difference between the means was not significant (mean difference = -3.4643,  $t = -1.15$ ,  $p = .254$ ).**

**One hundred percent of students at Enterprise were given the writing subtest of the LPT. Thirty-two (88.9%) passed that portion of the LPT before leaving middle school, whereas four (11.1%) did not pass it before leaving eighth grade. At Voyager, 21 (95.5%) students were administered the writing subtest. Nineteen (86.4%) students with learning disabilities achieved a passing score prior to entering high school, two (9.1%) did not pass, and one (4.5%) student was exempted from the test by his or her IEP committee. A chi-square analysis of**

the pass-fail data relative to the writing subtest did not reveal a significant difference (Pearson significance = .42739) (see Table 15).

Neither the mean number of times students in each group were given the writing subtest nor the mean number of accommodations the students in each group required was significantly different (see Tables 14 and 15). Students being served in inclusive settings averaged 2.30 (SD = 1.390) testing opportunities prior to entering high school; the students being served in pull-out special education programs averaged 2.59 (SD = 1.501) administrations. A 2-tail t-test revealed an insignificant difference in the number of administrations of the writing subtest (mean difference = -.2854,  $t = -.74$ ,  $p = .465$ ) (see Table 15).

Thirty-five (97.2%) of the students attending Enterprise took the writing subtest under standard conditions, with one student (2.8%) requiring nonstandard accommodations. At Voyager, 20 students (90.9%) in pull-out special education programs received no nonstandard accommodations. One student (4.5%) was administered the subtest under nonstandard conditions. One student in this group did not take the test. A chi-square analysis revealed nonsignificant differences between the two groups (Pearson significance = .72035) (see Table 15).

Statistical analyses of data on student performance on the reading, mathematics, and writing domains of the LPT, including the mean highest score, the pass-fail rates, the number of administrations, and the number of students requiring nonstandard accommodations in the testing conditions revealed that performance of students receiving inclusive services and students receiving pull-out services did not differ significantly. Therefore, Hypothesis 3 was accepted.

#### Hypothesis 4

***Middle school students with learning disabilities served in inclusive classrooms will not experience fewer in-school and out-of-school suspensions than middle schools students with learning disabilities served in pull-out special education programs.***

Results of statistical analyses of data, compiled in Table 16, indicated no significant difference between the two groups relative to behaviors that warranted in-school or out-of-school suspensions. Out-of-school suspension figures revealed that at Enterprise, only one student was suspended for seven days as the result of one infraction (mean = .1944, SD = 1.167). At Voyager, six students were suspended for a total of 17 days stemming from eight incidents (mean = .7727, SD = 1.378). This did not reflect a significant difference in the means of the groups (mean difference of -.5783,  $t = -1.64$ ,  $p = .109$ ).

Similarly, there was no significant difference in in-school suspension rates for the two groups (see Table 16 ). At Enterprise, the included students with disabilities experienced no in-school suspensions (mean = .0000, SD = .000). Six students with disabilities at Voyager were placed in in-school suspension a total of 25 days resulting from 12 incidents (mean = 1.14, SD = 3.075). This did not constitute a significant difference (mean difference = -1.1364,  $t = -1.73$ ,  $p = .098$ ).

In summary, there were no significant differences in the number of days of out-of-school or in-school suspension for middle school students with disabilities served in inclusive classrooms and those served in pull-out special education programs. Therefore, Hypothesis 4 was accepted.

## **Hypothesis 5**

***Middle School students with learning disabilities served in inclusive classrooms will not attend more days of school than middle school students with learning disabilities served in pull-out special education programs.***

Attendance data gathered from both Enterprise and Voyager revealed that students in inclusive classrooms attended significantly more days of school than students in pull-out special education programs (see Table 17). Thus the mean rate of absence for students at Enterprise was 5.6 days ( $SD = 4.095$ ), whereas the mean rate of absence for students at Voyager was 8.7 days ( $SD = 5.410$ ). These numbers represented a mean difference of  $-3.3081$  ( $t = -2.64, p = .011$ ). Thirty (83.3%) of the 36 students at Enterprise missed from two to 15 days of school during their eighth-grade year. Six (16.7%) missed no days of school. Twenty-one (95.5%) of the students at Voyager missed from two to 20 days of school during their eighth-grade year.

Based on the relevant data on school attendance, it is evident that middle school students with learning disabilities being educated in inclusive classrooms were present at school more days than their counterparts being educated through pull-out special education programs. Therefore, Hypothesis 5 was rejected.

### **Summary**

This chapter presented the results of the t-test and chi-square analyses of achievement, behavior, and attendance data on certain outcomes for middle schools students with learning disabilities served in inclusive classrooms and in pull-out special education programs. The statistical analyses were intended to

determine the degree to which these outcomes measures were affected by the service delivery model.

Based on the resulting data, the following findings were noted:

1. Middle school students with learning disabilities served in inclusive classrooms achieved higher course grades in language arts, mathematics, science, and social studies than middle school students with learning disabilities in pull-out special education.
2. Middle school students with learning disabilities achieved higher scores on the language, and mathematics subtests of the ITBS than middle school students with learning disabilities served in pull-out special education programs. The group served in inclusive programs achieved comparable scores on the reading comprehension, science, and social studies subtests.
3. Middle school students with learning disabilities did not demonstrate higher scores on the reading, writing, and mathematics subtest of the Virginia Literacy Passport Tests than middle school students with learning disabilities served in pull-out special education programs.
4. Middle school students with learning disabilities served in inclusive classrooms did not experience fewer in school-school and out-of-school suspensions than middle school students served in pull-out special education programs.
5. Middle school students with learning disabilities served in inclusive classrooms attended more days of school than middle school students served in pull-out special education programs.

## CHAPTER V

### CONCLUSIONS, SUMMARY, AND RECOMMENDATIONS

Efforts to afford all students with disabilities full opportunity to participate in activities of the total school environment (i.e., academic, social, curricular, extracurricular) describe the current inclusion movement. Because of its moral, legal, ethical, political, and economic implications, implementation of an inclusive special education service model has generated considerable controversy. Despite such controversy, however, the inclusion movement continues to gain momentum with a scant but growing research base to support it. At the heart of the debate on inclusive special education services for students with disabilities lies the question of efficacy. Although much attention and energy remain focused on the justification for the movement, the process itself, or affective responses of participants, it is now critical to determine to what extent inclusion serves the best interest of students with disabilities, by producing better academic and social outcomes.

This study was undertaken with the specific objective of contributing to the query about efficacy. The primary research question was, "Do middle school students with learning disabilities included in general education classrooms attain higher academic achievement, behave better, and attend school more regularly than middle school students with learning disabilities receiving pull-out special education services?" A sample of students was drawn from two middle schools in a suburban school district, one providing inclusive special education services, the other pull-out services. Data gathered from numerous archival sources were

analyzed through quantitative and qualitative means to construct a rich description of the contexts in which students were provided special education services and a meaningful interpretation of the achievement, behavior, and attendance outcomes.

### **Findings and Conclusions**

This study revealed the following findings regarding the hypothesized relationship between two different special education service delivery models and academic, behavior, and attendance outcomes for students with learning disabilities:

Middle school students with learning disabilities served in inclusive classrooms earned significantly higher grades in language arts, mathematics, science, and social studies than middle school students with learning disabilities served in pull-out special education programs. This finding suggests that, with adequate support and accommodation, students with disabilities can maintain acceptable achievement standards established by schools' grading practices. Because research indicates that academic failure increases the likelihood that a student will drop out of school, improved classroom achievement has implications for long-term outcomes of high school graduation and subsequent employment.

Another finding of this study was that middle school students with learning disabilities served in inclusive classrooms displayed statistically similar performance on all three subtests of the Literacy Passport Tests (LPT) in terms of highest score earned, number of administrations, and number requiring nonstandard accommodations to that of middle school students with disabilities

served in pull-out special education programs. The data revealed no systematic exclusion of students from the testing pool in either school. Moreover, scores were achieved without a significant difference between groups in the level of non-standard testing accommodation. These findings suggest that maintenance of a focus on standard curriculum for special education intervention does not exceed the ability of some students with disabilities. Nor does intensive instruction on remedial basic skills in a small segregated group necessarily result in improved pass rates on minimum competency testing. In other words, neither inclusive nor pull-out special education models appeared to provide better student preparation for the LPT.

Middle school students with learning disabilities served in inclusive classrooms scored higher on the language and mathematics subtests of the lowa Tests of Basic Skills (ITBS) than middle school students with learning disabilities served in pull-out special education programs. The two groups demonstrated comparable scores on reading comprehension, science, and social studies subtests. The majority of students in both groups participated in the ITBS testing without nonstandard accommodation, rendering their scores meaningful for comparisons.

Additionally, this investigation revealed that middle school students with learning disabilities served in inclusive classrooms demonstrated rates of in-school and out-of-school suspension comparable to those of middle school students served in pull-out special education programs. This would suggest that any increased demands of full-time general education placement did not result in



increased acting-out behavior. Or if they did, one might surmise that special and general educators collaboratively addressed any inappropriate behaviors, negating need for removal from the classroom with all its possible negative consequences. The behavior of students with disabilities has received considerable attention as the number of inclusive classrooms has increased and the perception persists that those students create additional disruption and distraction (Rogers, 1993). This study provides some evidence to the contrary, however.

Middle school student with learning disabilities served in inclusive classrooms attended significantly more days of school than did middle school students with learning disabilities in pull-out special education programs. School attendance is a meaningful consideration because it is not possible to provide quality instructional and social experiences for students who are absent from the classroom. One might conclude from this study that inclusion into the natural order and experiences of school encouraged daily attendance and that increased daily attendance positively impacted achievement (e.g., grades and test scores).

#### Summary of Findings

Based on an examination of course grades, standardized test scores, behavior, and school attendance, this study serves both to support and extend a growing body of research evidence that suggests inclusion in general education classrooms results in improved outcomes for students with disabilities. When student demographics and school variables were comparable, middle school students with learning disabilities served in inclusive classrooms earned better

grades, scored as well or better on standardized measures of achievement, committed no more behavioral infractions, and attended more days of school than did middle school students with learning disabilities students served in pull-out special education programs. Previous research has shown that students served in inclusive rather than pull-out programs demonstrate improved academic performance (e.g., Affleck et al., 1988; Baker et al., 1995; Carlberg & Kavale, 1980; Chase & Pope, 1993; Deno et al., 1990; Giangrecro & Edelman, 1995; Jenkins, Jewell, O'Connor, Kenkins, & Troutner, 1994; Schulte et al., 1990; Wang & Baker, 1985-86; Wang, Walberg, & Reynolds, 1992; Zigmond & Baker, 1990). Prior investigations have also indicated that student attitudes and overall classroom behavior tended to be positively impacted by inclusion into general education settings (Baker et al., 1995; Giangreco & Edelman, 1985; Wang & Baker, 1985-86). This research is consistent with the findings of these prior studies.

One of the strengths of this study is that it presents data on a variety of performance indicators and discrete program variables. The program descriptors provide meaningful context, functionally define inclusion, and increase the probability that the successful elements of the programs illustrated here may be replicated for further research.

#### **Implications for Further Research**

While this study clearly suggests that students with disabilities included in general education classrooms demonstrate better outcomes on some measures

than their peers in pull-out programs and comparable outcomes on others, it leaves a number of questions unanswered and in need of further exploration.

The focus of this investigation was 58 middle school students with learning disabilities. Although this number is large in comparison to some other studies of inclusion, the field of special education would be advanced by replication of this research design with larger sample sizes, supporting computation of effect size. Such an approach might enable researchers to find significant differences in variables unable to be detected in this study because of its size. It would also be important to replicate this research model in other settings, at other levels, and with students in different disability categories to determine the impact of inclusive service delivery on their achievement and behavior. For example, it would be helpful to know if the benefits of inclusion in general education are increased by implementation early in a child's school career. Further, because outcomes for students with emotional and behavioral disorders are cause for concern, the efficacy of integration in more normal settings as an intervention is critical information for professionals and families attempting to plan for greater success for these youngsters.

The key to the meaningfulness of such an efforts, however, would be the functional definition of the service delivery system. There are those, for example, whose definition of inclusion is the pull-out model described here. Complete program descriptions such as those contained in this study provide critical information to consumers and users of research. Without such descriptions, it would not have been readily apparent that both schools provide exemplary

programs of their own type. Much of the power of these results hinges on the fact that two excellent, similar programs produced different results with comparable students. Only by providing clear context can results of research studies take on practical meaning.

Another question that begs an answer is the extent to which there is a connection between student profiles and the elements necessary for success in school, specifically in general education classrooms. Although the unit of analysis for this study was the school, it is important to determine the impact that inclusive education has on the individual student. Therefore, an in-depth examination of academic and social performance variations of students with disabilities who exhibit different ability profiles would provide invaluable information to families and professionals responsible for creating effective programs for individual students. For example, inclusive service delivery for language arts instruction may be more beneficial to a student with above-average ability and deficits in visual perception and mathematics than for a student with average ability and deficits in auditory perception and reading. On the other hand, the reverse scenario might just as well be the case. The point is that the research in the field has not yet explored the issues of interaction of service delivery models, instructional variables, and individual student profiles.

Case studies of students with disabilities who have been included in general education classrooms are not rare; however, they have tended to focus on affective issues, such as the struggle to have students included, increased social opportunities, and perceptions of families and teachers of students'

successes (Skrtic, 1995). It is the intent of this researcher as a follow-up to this work to investigate more long-term outcomes for students. Specifically, data will be gathered on a subset of the group of students who participated in this study and analyzed in terms of high school achievement, graduation rates, transition success, and post-school vocational and/or educational involvement. More long-term studies of this type are needed to assess the true outcomes of inclusion.

Another highly political issue for serious inquiry in an age of severe budgetary constraints is the cost-effectiveness of inclusion. As demand for public funds has grown, school officials have found themselves increasingly accountable for every expenditure. Because special education represents significantly increased per-pupil costs for those eligible for services, it is a prime target for intense scrutiny. The funds spent should reap the expected benefit—students more competent, capable, and prepared for the rights and responsibilities of productive citizenship. If inclusive services result in more add-on costs for localities, there will be a demand for proof that extra money will produce added benefit for included students and for society at large. On the other hand, if costs are relatively similar for inclusion and for pull-out special education and if outcomes for students are at least comparable, how does a nation whose identity is based on egalitarianism justify segregating any group of students away from the mainstream of life? Even if there is any increased cost for providing inclusive services, how do we defend the segregation of students with disabilities merely to save money? Only solid evidence that couples outcomes with costs will provide a legitimate answer to these questions. Each of these areas provides ground for

potential research that might further the knowledge base on inclusion, maintain a focus on student outcomes, and result in more appropriate services for students with disabilities.

### **Implications for Practice**

P. L. 107-05, the Amendments to IDEA (1997), incorporated into federal law the clearest message yet highlighting the preference for general education placements for students with disabilities. However, that preference must be balanced with the law's accompanying requirement for appropriate services calculated to confer benefit. Placement in a general education environment merely as token participation without derived benefit satisfies neither the intent nor the spirit of the law. Although all of the issues regarding inclusive education for students with disabilities have not been resolved, the findings of this study provide important information that can have a significant impact on educational policy, teacher preparation, and classroom practice. Thus, the results suggest that with adequate adaptations, individualized programs, and sufficient support, improved outcomes for students with disabilities are possible in the mainstream of American education.

One practical implication of this research is the obvious need for a thorough and comprehensive assessment of students' needs for accommodations and modifications in instruction and assessment. Results revealed that the inclusive general education program investigated was characterized by more collaboration, accommodation, and focus on standard curriculum than was the pull-out program. Given data such as those presented in

**this study, professionals providing technical assistance and families seeking genuine experiences and reasonable expectations for students can craft improved educational programs.**

**Another ramification implies change in the way that general and special education teachers interact. Data gathered for this study demonstrate that, although the two participating schools were similar in most ways, clearly they differed in the degree of collaboration that existed in the building and in the roles of general and special education teachers, particularly in relationship to one another. Clear communication, frequent interaction, and co-equal collaboration serving to blend systems appear to hold more promise for effective practice than do more parallel interventions and independent subsystems.**

**Findings of this study also indicate that IEPs of students in different settings were written with a different focus. Students receiving inclusive services had IEPs centered around standards-based general education curriculum taught to all students at their grade level, whereas students receiving pull-out special education had IEPs slanted toward basic remedial skills. It would appear that families and professionals developing such documents for students with disabilities would want to acknowledge that success in general education necessitates a shift in focus and in implementation of services. The benchmark in general education is general education curricula, and the path to mastery of that curricula is paved with appropriate special education support (e.g., specially designed instruction paired with necessary accommodations and modifications). The necessity for continuous, well-designed research to address increased**

**demand for empirical evidence no matter what the model of choice cannot be overstated. At the programmatic level, such as this study investigated, trends in improved outcomes should be monitored and promising practices continuously implemented and assessed. But equally as critical is close monitoring of progress toward clearly established outcomes of individual students.**

### **Summary**

**School effectiveness depends in large part on its ability to respond to individual student need. In the case of students with disabilities, that responsibility is heightened. The assumption that segregation from typical peers is the price that students with disabilities have to pay in order to learn may be erroneous. When making decisions to vary the educational experiences offered to students, planning teams need to use a sound system of objective criteria designed to predict success. Appropriate demands should be balanced with appropriate support for learning. In an age of competing educational agendas, professionals and families must consider the long-term benefits and long-term consequences of decisions they make. Findings and conclusions generated by this study may aid policy makers, families, and professionals in judiciously reviewing the inclusion of students with disabilities into the mainstream of public education.**



## REFERENCES

Affleck, J., Madge, S., Adams, A., & Lowenbraun, S. (1988). Integrated classrooms versus resource model: Academic viability and effectiveness.

Exceptional Children, 54, 339-348.

Algozzine, B., & Korinek, L. (1985). Where is special education for students with high prevalence handicaps going? Exceptional Children, 51, 388-394.

Allington, R., & Johnston, P. (1990). Coordination, collaboration, and consistency: The redesign of compensatory and special education interventions. In R. Slavin, N. Karweit, & N. Madden (Eds.), Effective programs for students at risk (pp. 321-352). Boston: Allyn and Bacon.

Allington, R., Stuetzel, H., Shake, M., & Lamarche, S. (1986). What is remedial reading? A descriptive study. Reading Research and Instruction, 24, 15-30.

Amann v. Town of Stow, 991 F.2d 929 (1<sup>st</sup> Cir. 1993).

Americans with Disabilities Act of 1990, PL 101-336, 42 U.S.C. §12101 et seq.

Arnold, J., & Dodge, H. (1994). Room for all. The American School Board Journal, 24-25.

A.W. v. Northwest R-1 School District, 813 F.2d 158 (8<sup>th</sup> Cir. 1987).

Baker, E., Wang, M., & Walberg, H. (1995). The effects of inclusion in learning. Educational Leadership, 52(4), 33-34.

Baker, J., & Zigmond, N. (1990a). Are regular education classes equipped to accommodate students with learning disabilities? Exceptional Children, 56, 515-527.

Baker, J., & Zigmond, N. (1990b). Mainstreaming learning disabled students: The impact on regular education students and teachers. Paper presented at the annual meeting of the American Research Association, Boston, MA.

Barnett by Barnett v. Fairfax County School Board, 927 F.2d 146 (4<sup>th</sup> Cir 1991), cert. den., --U.S.--, 112 S.Ct.175, 116 L.Ed.2d 138 (1991).

Bauwens, J., & Hourcade, J. (1995). Cooperative teaching: Rebuilding the schoolhouse for all students. Austin, TX: Pro-Ed.

Berhmann, J. (1994). Including everyone. Arizona School Boards Association Journal, 24(2), 6-8.

Biklen, D. (1992). Schooling without labels. Philadelphia: Temple University Press.

Blackman, H. (1989). Special education placement: Is it what you know or where you live? Exceptional Children, 55, 459-462.

Blackorby, J., & Wagner, M. (1996). Longitudinal postschool outcomes of youth with disabilities: Findings from the National Longitudinal Transition Study. Exceptional Children, 62(5), 399-413.

Blenk, K., & Fine, D. (1995). Making school inclusion work: A guide to everyday practices. Cambridge, MA: Brookline.

- Board of Education of East Windsor v. Diamond, 606 F.2d 987 (3d Cir.1986).**
- Board of Education of Hendrick Hudson Central School District v. Rowley, 102 S. Ct. 3034 (1982).**
- Board of Education of Sacramento City Unified School District v. Rachel H., 786 F.Supp. 874 (E.D.Cal.1992).**
- Brougham by Brougham v. Town of Yarmouth, 823 F.Supp. 9 (D.Me.1993).**
- Brown v. Board of Education of Topeka, 347 U.S. 483 (1954).**
- Carlberg, C., & Kavale, K. (1980). The efficacy of special versus regular class placement for exceptional children: A meta-analysis. The Journal of Special Education, 14, 459-462.**
- Chase, V., & Pope, E. (1993). Model for mainstreaming: The synergistic approach. Paper presented at the Learning Disabilities Association of America Conference, San Francisco.**
- Corbin, N. (1991). The impact of learning together: What's working. St. Paul: Minnesota Department of Education.**
- Council for Exceptional Children. (1995). Creating schools for all our students: What twelve schools have to say. Reston, VA: Author.**
- Daniel R. R. v. El Paso Independent School District, 874 F. 2d 1036 (5<sup>th</sup> Cir. 1989).**
- Davis, W. (1988). The regular education initiative debate: Its promises and problems. Exceptional Children, 55(5), 440-446.**

Deno, S., Maruyama, G., Espin, C., & Cohen, C. (1990). Educating students with mild disabilities in general education classrooms: Minnesota alternatives. Exceptional Children, 57, 150-161.

Devries by DeBlaay v. Fairfax County School Board, 882 F.2d 876 (4<sup>th</sup> Cir.1989).

Edgar, E. (1985). How do special education students fare after they leave school? A response to "Factors associated with the employment status of handicapped youth existing high school from 1979 to 1983." Exceptional Children, 51, 470-473.

Edgar, E. (1987). Secondary programs in special education: Are many of them justifiable? Exceptional Children, 53, 555-561.

Edgar, E. (1988). Employment as an outcome for mildly handicapped students: Current status and future directions. Focus on Exceptional Children, 21(1), 1-8.

Education for All Handicapped Children Act of 1975, PL 94-142, 20 U.S.C. §1400 et seq.

Education of the Handicapped Act of 1970, PL 91-230, 20 U.S.C. §1400 et seq.

Epps, S., & Tindal, G. (1987). The effectiveness of differential programming in serving students with mild handicaps: Placement options and instructional programming. In M.C. Wang, M.C. Reynolds, & H.J. Walberg (Eds.), Handbook of special education: Vol. 1. Research and practice (pp. 213-248). New York: Pergamon.

Epstein, J., & Salinas, K. (1992). Promising programs in the middle grades. Reston, VA: National Association of Secondary School Principals.

Ferguson, D., Meyer, G., Jeanchild, L., Juniper, L., & Zingo, J. (1992). Figuring out what to do with the grownups: How teachers make inclusion "work" for students with disabilities. Journal of the Association for Severe Handicaps, 17(4), 218-1226.

Fuchs, D., & Fuchs, L. (1991). Framing the REI debate: Abolitionists versus conservationists. In J.W. Lloyd, N.N. Singh, & A.C. Repp (Eds.), The regular education initiative: Alternative perspectives on concepts, issues, and models (pp. 241-255). Sycamore, IL: Sycamore Publishing Company.

Fuchs, D., & Fuchs, L. (1995). What's so "special" about special education? Phi Delta Kappan, 76(7), 552-530.

Gartner, A., & Lipsky, D. (1987). Beyond special education: Toward a quality system for all students. Harvard Educational Review, 57(4), 367-395.

Gerber, M. (1984). Learning disabilities and cognitive strategies: A case for training or constraining problem solving? Journal of Learning Disabilities, 16(5), 255-260.

Giangreco, M. (1996). Choosing options and accommodations for children (COACH). In S. Stainback & W. Stainback (Eds.), Inclusion: A guide for educators (p. 237-254). Baltimore: Paul H. Brookes.

Giangreco, M., Cloninger, C., Dennis, R., & Edelman, S. (1994). Problem-solving methods. In J.S. Thousand, R. Villa, & A. Nevin (Eds.), Creativity and

collaborative learning: A practical guide to empowering students and teachers (p. 321-346). Baltimore, MD: Paul H. Brookes.

Giangreco, M., Cloninger, C., & Iverson, V. (1993). Choosing options and accommodations for children: A guide to planning inclusive education. Baltimore: Paul H. Brookes.

Giangreco, M., Dennis, R., Cloninger, C., Edelman, S., & Schattman, R. (1994). "I've counted Jon": Transformational experiences of teachers educating students with disabilities. Exceptional Children, 59, 359-372.

Giangreco, M., & Edelman, W. (1995). Coordinating support services in inclusive classrooms. Presentation at TASH conference, San Francisco.

Gill, D., & Edgar, E. (1990). Outcomes of a vocational program for students with mild disabilities. The Pierce County Vocational/special education cooperative. Journal of Vocational Special Needs Education, 12(3), 7-22.

Gillette v. Fairland Board of Education, 725 F.Supp. 343 (S.D. Ohio 1989).

Goodman, J. (1995). Change without difference: School restructuring in historical perspective. Harvard Educational Review, 65(1), 1-29.

Greer v. Rome City School District, 950 F.2d 688 (11<sup>th</sup> Cir. 1991).

Hallahan, D., Keller, C., McKinney, J., Lloyd, J., & Bryan, T. (1988). Examining the research base of the regular education initiative: Efficacy studies and the Adaptive Learning Environments Model. Journal of Learning Disabilities, 21(1), 29-35.

Halverson, A.T., & Sailor, W. (1990). Integration of students with severe and profound disabilities: A review of the research. In R. Gaylord-Ross (Ed.),

**Issues and Research in Special Education (pp. 124-148). New York: Teachers College Press.**

**Hasazi, S., Johnston, A., Liggett, A., & Schattman, R. (1994). A qualitative policy study of the least restrictive environment provision of the Individuals with Disabilities Education Act. Exceptional Children, 60(6), 491-507.**

**Hocutt, A. (1996). Effectiveness of special education: Is placement a critical factor? In R. E. Berhman (Ed.), The Future of Our Children, 6(1), 77-102.**

**Individuals with Disabilities Education Act of 1990, PL 101-476, 20 U.S.C. §1400 et seq.**

**Individuals with Disabilities Education Act of 1997, PL 107-05, 20 U.S.C. § 1400 et seq.**

**Jenkins, J., Jewell, M., O'Connor, R., Jenkins, L., & Troutner, J. (1994). Accommodations for individual differences within classroom ability groups: An experiment in school restructuring. Exceptional Children, 55, 420-428.**

**Johnson, D., & Johnson, R. (1981). The integration of handicapped children into the regular classroom: Effects of cooperative and individualistic instruction. Contemporary Educational Psychology, 6, 344-355.**

**Johnson v. Lancaster-Lebanon Intermediate Unit 13, 757 F.Supp. 606 (E.D.Pa., 1991).**

**Johnston v. Ann Arbor Public Schools, 569 F.Supp. 1502 (E.D. Mich. 1983).**

**Jung, P., & Gunn, R. (1990). Serving the educational and developmental needs of middle-level students. NASSP Bulletin, 74(525), 73-79.**

Katsiyannis, A., Conderman, G., & Franks, D. (1995). State practices on inclusion: A national review. Remedial and Special Education, 16(5), 279-287.

Kauffman, J. (1989). The regular education initiative as Reagan-Bush education policy: A trickle-down theory of education for the hard-to-teach. Journal of Special Education, 23(3), 256-278.

Kauffman, J. (1991). Restructuring in sociopolitical context: Reservations about the effects of current reform proposals on students with disabilities. In J.W. Lloyd, N.N. Singh, & A.C. Repp (Eds.), The regular education initiative: Alternative perspectives on concepts, issues, and models (pp.57-66). Sycamore, IL: Sycamore Publishing Company.

Kauffman, J. (1993). How to achieve radical reform of special education. Exceptional Children, 60, 6-16.

Kauffman, J. (1994). Two perspectives on inclusion: One size does not fit all. Beyond Behavior, 5(3), 11-14.

Kauffman, J., & Hallahan, D. (1993). Toward a comprehensive delivery system: The necessity of identity, focus, and authority of special education and other compensatory programs. In J. Goodlad & T. Lovitt (Eds.), Integrating general and special education (pp. 367-390). Columbus, OH: Charles E. Merrill.

Kavale, K., & Forness, S. (1987). History, politics, and the general education initiative: Sleet's reinterpretation of learning disabilities as a case study. Remedial and Special Education, 8(5), 6-12.



Kohler, P. (1994). Serving students with disabilities in postsecondary education settings: A conceptual framework of program outcomes. Unpublished manuscript, University of Illinois, Urbana-Champaign.

Kovaleski, J., Tucker, J., & Stevens, L. (1996). Bridging special and regular: The Pennsylvania initiative. Educational Leadership, 53(5), 44-47.

Lachman v. Illinois Board of Education 852 F.2d 290 (7<sup>th</sup> Cir.1988).

Larry P. v. Riles, 495 F. Supp. 926, (N.D. Ca, 1979).

Leinhardt, G., & Pally, A. (1982). Restrictive educational settings? Exile or haven. Review of Educational Research, 52, 557-578.

Lenn v. Portland School Community, 998 F.2d 1083 (1<sup>st</sup> Cir.1993).

Lieberman, L. (1985). Special education and regular education: A merger made in heaven? Exceptional Children, 51, 513-516.

Lieberman, L. (1990). REI revisited... again. Exceptional Children, 56, 561-562.

Lilly, M. (1992). Labeling: a tired, overworked, yet unresolved issue in special education. In S. Stainback & W. Stainback (Eds.), Controversial issues confronting special education (pp. 85-95). Boston: Allyn and Bacon.

Lipsitz, J. (1991). Successful schools for young adolescents. New Brunswick, NJ: Transaction.

Lipsky, D., & Gartner, A. (1989). Beyond separate education—Quality education for all. Baltimore: Paul H. Brookes.

Lipsky, D., & Gartner, A. (1991). Restructuring for quality: In J. Lloyd, N. Singh, & A. Repp (Eds.), The regular education initiative: alternative perspectives

on concepts, issues, and models (pp. 44-56). Sycamore, IL: Sycamore Publishing Company.

Lipsky, D., & Gartner, A. (1997). Inclusion and school reform: Transforming America's classrooms. Baltimore: Paul H. Brookes.

Liscio v. Woodland Hills School District, 734 F.Supp. 689 (W.D. Pa. 1989).

Lloyd, J., & Gambatese, C. (1991). Reforming the relationship between regular and special education: Background and issues. In J. Lloyd, N. Singh, & A. Repp (Eds.), The regular education initiative: Alternative perspectives on concepts, issues, and models (pp. 3-15). Sycamore, IL: Sycamore Publishing Company.

MacIver, D. (1990). Meeting the needs of young adolescents: Advisory groups, interdisciplinary teaching teams, and school transition programs. Phi Delta Kappan, 71, 458-464.

Madden, N. A., & Slavin, R. (1983). Mainstreaming students with mild handicaps: Academic and social outcomes. Review of Educational Research, 53, 519-569.

Marder, C., & D'Amico, R. (1992). How well are youth with disabilities really doing? A comparison of youth with disabilities and youth in general. Menlo Park, CA: SRI International.

Mark A. v. Grant Wood Area Education Agency, 795 F.2d 52 (8<sup>th</sup> Cir 1986).

Mark Z. v. Mountain Brook Board of Education, 792 F. Supp. 1228 (N.D. AL 1992).

Marston, D. (1987). The effectiveness of special education. Journal of Special Education, 21, 13-27.

Martin, E. (1994). Inclusion: Rhetoric and reality. Exceptional Parent, 24(2), 39-42.

Martin, R. (1991). Special education law in America: The rights of the student and the responsibilities of those who serve. Arlington, TX: Future Horizons, Inc.

Matthews v. Campbell, 551 EHLR (E.D. VA. 1979).

McCarthy, M. (1994). Inclusion and the law: Recent judicial developments. Research Bulletin. Bloomington, IN: Center for Evaluation, Development, and Research.

McCullom, H., & Turnbull, B. (1989). Educational indicators. Washington, DC: Policy Studies Associates.

Mehan, J., Villaneuva, I., Hubbard, L., & Lintz, A. (1996). Constructing school success. Cambridge, MA: University Press.

Merriam-Webster's collegiate dictionary (10<sup>th</sup> ed.). (1993). Springfield, MA: Merriam-Webster.

Meyen, E., & Skrtic, T. (1995). Special education and student disability (4<sup>th</sup> ed.). Denver: Love Publishing Company.

Michigan Department of Education. (1993). Final report of the inclusive education recommendation committee: Findings and recommendations. Lansing: Author.

- Miller, L. (1990). The regular education initiative and school reform: Lessons from the mainstream. Remedial and Special Education, 11(3), 17-22.
- Mills v. Board of Education, 348 F. Supp. 866 (D.D.C. 1972).
- National Association of State Boards of Education. (1992). Winners all: A call for inclusive schools. Washington, DC: Author.
- National Study of Inclusive Education. (1994). New York: The City University of New York, National Center on Educational Restructuring and Inclusion.
- National Study of Inclusive Education. (1995). New York: The City University of New York, National Center on Educational Restructuring and Inclusion.
- Oberti v. Board of Education, 995 F. 2d 1204 (3<sup>rd</sup> Cir. 1993).
- O'Neil, J. (1995). Can inclusion work? A conversation with Jim Kauffman and Mara Sapon-Shevin. Educational Leadership, 52, 7-11.
- Osborne, A.G., & Dimattia, P. (1994). The idea's least restrictive environment mandate: legal implications. Exceptional Children, 61(1), 6-14.
- Pennsylvania Association of Retarded Citizens (PARC) v. Pennsylvania, 334 F. Supp. 1257 (E.D. Pa. 1972), and 343 F. Supp. 279 (E.D. Pa. 1972).
- Peterson, M., LeRoy, B., Field, S., & Wood, P. (1992). Community-referenced learning in inclusive schools: effective curriculum for all students. In S. Stainback & W. Stainback (Eds.), Curriculum considerations in inclusive classrooms (pp. 207-227). Baltimore: Paul H. Brookes Publishing Co.

Polloway, E. (1984). The integration of mildly retarded students in the school: A historical review. Remedial and Special Education, 5(4), 18-28.

Poolaw v. Parker Unified School District, 21 IDELR 1 (D. Ariz. 1994).

Pugash, M., & Lilly, M. (1984). Reconceptualizing support services for classroom teachers: Implications for teacher education. Journal of Teacher Education, 35(5), 48-55.

Putnam, J., Speigel, A., & Bruininks, R. (1995). Future directions and inclusion of students with disabilities: A delphi investigation. Exceptional Children, 61(6), 553-576.

Rehabilitation Act of 1973, PL 93-112, 29 U.S.C. §701 et seq.

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

Riverside Publishing Company. (1986). The Iowa tests of basic skills.  
Riverside, CA: Author.

Roach, V. (1993). Winners all: A call for inclusive schools. PTA Today, 18, 13-14.

Rockne, J., & Weiss-Castro, R. (1994). The national agenda for achieving better results for children and youth with disabilities. (Report No. CSOS-R-292).  
Washington, DC : Department of Education. (ERIC Document Reproduction No. ED 373 530)

Rogers, J. (1993). The inclusion revolution. Research Bulletin, 11.  
Bloomington, IN: Center for Evaluation, Development, and Research.

- Ronker v. Walter, 700 F.2d 1058 (6<sup>th</sup> Cir. 1983).
- Sabatino, D. (1971). An evaluation of resource rooms for children with learning disabilities. Journal of Learning Disabilities, 4(2), 27-35.
- Sailor, W. (1991). Special education in the restructured school. Exceptional Children, 53, 391-398.
- Sailor, W., Gee, K., & Karasoff, P. (1992). School restructuring and full inclusion. San Francisco: California Research Institute.
- Salend, S. (1996). Effective mainstreaming. New York: Macmillan.
- Schattman, R., & Benay, J. (1992). Inclusive practices transform special education in the 1990's. The School Administrator, 49(2), 6-12.
- Schuldt, v. Mankato School District No. 77, 937 F.2d 1357 (8<sup>th</sup> Cir., 1991).
- Schulte, A., Osborne, S., & McKinney, J. (1990). Academic outcomes for students with learning disabilities in consultation and resource programs. Exceptional Children, 57(2), 162-172.
- Sheehan, R., & Keogh, B. (1984). Approaches to evaluation in special education. In B.K. Keogh (Ed.), Advances in special education: Vol. 4. (pp.1-20). Greenwich, CT: JAI Press.
- Skrtic, T. (1995). The national inquiry into the future of education for students with special needs. Counterpoint, 4(7), 6.
- Slavin, R. (1996). Neverstreaming: Preventing learning disabilities. Educational Leadership, 53(3), 4-7.
- Smith, G., & Smith, D. (1985). A mainstreaming program that really works, Journal of Learning Disabilities, 18(3), 369-372.

**Social Security Act of 1965, PL 89-97, 20 U.S.C., et seq. 286.**

**Spady, W. (1995). Outcome-based education: From instructional reform to paradigm restructuring. In J. Block, S. Everson, & T. Guskey (Eds.), School improvement programs: A handbook for educational leaders (pp. 367-398). New York: Scholastic Leadership Policy Research.**

**Spagnola, J., & Redfield, D. (1991). Promotion and programs for students as consequence of the Literacy Testing Program. Richmond: Virginia Department of Education.**

**Spagnola, J., & Redfield, D. (1992a). Literary passport testing program policy interpretation. Richmond: Virginia Department of Education.**

**Spagnola, J., & Redfield, D. (1992b). Special notice regarding Literacy Passport and special education students. Richmond: Virginia Department of Education.**

**St. Louis Developmental Disabilities Treatment Center Parents Association v. Mallory, 591 F.Supp. 1416 (W.D.Mo.1984).**

**Stainback, S., & Stainback, W. (Eds.). (1991). Curriculum considerations in inclusive classrooms: Facilitating learning for all students. Baltimore: Paul H. Brookes.**

**Stainback, S., & Stainback, W. (Eds.). (1996). Inclusion: a guide for educators. Baltimore: Paul H. Brookes.**

**Stainback, W., & Stainback, S. (1984). A rationale for the merger of special and regular education. Exceptional Children, 51(2), 102-111.**

**Stainback, W., & Stainback, S. (1996). Controversial issues confronting special education: Divergent perspectives. Boston: Allyn and Bacon.**

**Stainback, S., Stainback W., & Forest, M. (1989). Educating all students in the mainstream of regular education. Baltimore: Paul H. Brookes.**

**Statum v. Birmingham, 699 F.2d 929 (11<sup>th</sup> Cir. 1993).**

**Statutes, regulations and case law protecting individuals with disabilities. (1997). Rosemount, MN: Data Research, Inc.**

**Thornock v. Boise Independent School District 1, 767 P.2d 1241 (Idaho 1988).**

**Thousand, J., & Villa, R. (1992). Sharing expertise and responsibilities through teaching teams. In W. Stainback & S. Stainback (Eds.), Support networks for inclusive schooling: Interdependent integrated education (pp. 151-166). Baltimore: Paul H. Brookes.**

**Thurlow, M., & Ysseldyke, J. (1992). Can "all" ever really mean "all" in defining and assessing student outcomes? Minneapolis: University of Minnesota, National Center on Educational Outcomes.**

**Tindal, G. (1985). Investigating the effectiveness of special education: An analysis of methodology. Journal of Learning Disabilities, 18(3), 101-102.**

**Toepfer, C. (1988). What to know about young adolescents. Social Education, 52(2), 110-112.**

**Toepfer, C., Loundsbury, J., Arth, A., & Johnston, J. (1986). Editorial. The Clearing House, 60(3), 6-10.**



Touchstone Applied Science Associates. (1992). The degrees of reading power. Brewster, NY: Author.

Trent, S. (1989). Much to do about nothing: A clarification of issues on the regular education initiative. Journal of Learning Disabilities, 22(1), 23-25.

U.S. Department of Education. (1990). Twelfth annual report to Congress on the implementation of the Individuals with Disabilities Education Act.

Washington, DC: Author.

U.S. Department of Education. (1995). Seventeenth annual report to Congress on the implementation of the Individuals with Disabilities Education Act.

Washington, DC: Author.

U.S. Department of Education. (1996). Eighteenth annual report of Congress on the implementation of the Individuals with Disabilities Education Act.

Washington, DC: Author.

Van Dyke, R., Stallings, M., & Colley, K. (1995). How to build an inclusive school community. Phi Delta Kappan, 77(2), 16-19.

Villa, R., & Thousand, J. (1992). Administrative supports to promote inclusive schooling. In W. Stainback & S. Stainback (Eds.), Support networks for inclusive schooling (pp. 201-218). Baltimore: Paul H. Brookes.

Villa, R., Thousand, J., Stainback, W., & Stainback, S. (Eds.). (1992). Restructuring for caring and effective education: An administrative guide to creating heterogeneous schools. Baltimore: Paul H. Brookes.

Visco by Visco v. School District of Pittsburgh, 684 F. Supp. 1310 (W.D. Pa. 1988).

Wagner, M., & Shaver, D. (1993). The national longitudinal transition study of special education students: Report on procedures for the first wave of data collection. Menlo Park, CA: SRI International.

Walther-Thomas, C., & Carter, K. (1993). Cooperative teaching: Helping students with disabilities succeed in mainstream classrooms. Middle School Journal, 25(1), 33-38.

Wang, M., & Baker, E. (1985-86). Mainstreaming programs: Design features and effects. Journal of Special Education, 19, 503-521.

Wang, M., Reynolds, M., & Walberg, H. (1988). Integrating children of the second system. Phi Delta Kappan, 70(1), 248-251.

Wang, M., Reynolds, M., & Walberg, H. (1989). Who benefits from segregation and murky water? Phi Delta Kappan, 71(1), 64-67.

Wang, M., Walberg, H., & Reynolds, M. (1992). A scenario for better—not separate—special education. Educational Leadership, 50(2), 35-38.

West, F. (1990). Educational collaboration in the restructuring of schools. Journal of Educational and Psychological Consultation, 1(1), 23-40.

Wheelock, A. (1992). Crossing the tracks: How "untracking" can save America's schools. New York: The New Press.

Will, M. (1986). Educating students with learning problems: A shared responsibility. Washington: U.S. Department of Education, Office of Special Education and Rehabilitation Services.

Wilson v. Marana Unified School District No. 6 of Pima County, 735 F. 2d 1178 (9<sup>th</sup> Cir. 1984).

Yatvin, J. (1992). Learning to swim in the mainstream: Educating handicapped children in regular education classrooms. Virginia State Reading Association Journal, 17, 6-11.

Yell, M. (1995). The least restrictive environment mandate and the courts: Judicial activism or judicial restraint? Exceptional Children, 61, 578-581.

Ysseldyke, J., Thurlow, M., & Bruininks, R. (1992). Expected educational outcomes for students with disabilities. Remedial and Special Education, 13(6), 19-30.

Ysseldyke, J., Thurlow, J., Bruininks, R., Gilman, R., Deno, S., McGrew, K., & Shriner, J. (1992). An evolving conceptual model of educational outcomes for children and youth with disabilities. Minneapolis: University of Minnesota, National Center on Educational Outcomes.

Ysseldyke, J., Thurlow, M., & Shriner, J. (1992). Outcomes are for special educators too. Teaching Exceptional Children, 25(1), 36-50.

Ysseldyke, J., Thurlow, M., Wotruba, J., & Nania, P. (1990). Instructional arrangements: Perceptions from general education. Teaching Exceptional Children, 22(4), 4-7.

Zigmond, N., & Baker, J. (1990). Mainstream experiences for learning disabled students (Project MELD): Preliminary report. Exceptional Children, 57(2), 176-185.

## List of Tables

<b>Table 1</b>	<b>Summary of Demographic Data on Student Participants</b>
<b>Table 2</b>	<b>School Staffing Patterns</b>
<b>Table 3</b>	<b>Special Education Teacher Characteristics</b>
<b>Table 4</b>	<b>General Education Teacher Characteristics</b>
<b>Table 5</b>	<b>Summary of IEP Goals Data</b>
<b>Table 6</b>	<b>Summary of IEP Objectives Data</b>
<b>Table 7</b>	<b>Summary of IEP Accommodations Data</b>
<b>Table 8</b>	<b>Summary of Student Time Receiving Special Education</b>
<b>Table 9</b>	<b>Summary of Course Grades Data</b>
<b>Table 10</b>	<b>Summary of Students Earning Grades of C or Above</b>
<b>Table 11</b>	<b>Summary of Course Grades by Frequency</b>
<b>Table 12</b>	<b>Summary of ITBS Subtest Scores</b>
<b>Table 13</b>	<b>Summary of ITBS Nonstandard Administration Data</b>
<b>Table 14</b>	<b>Summary of LPT Domain Scores and Number of Administrations</b>
<b>Table 15</b>	<b>Summary of LPT Pass-Fail Data and Nonstandard Administrations</b>
<b>Table 16</b>	<b>Summary of Suspension Data</b>
<b>Table 17</b>	<b>Summary of Student Attendance Data</b>

**Table 1 a****Summary of Demographic Data on Student Participants**

Characteristics	Enterprise			Voyager			Mean Difference	t-Value	df	2-Tail Sig.
	Mean	SD	SE of Mean	Mean	SD	SE of Mean				
Age	14.5	.597	.100	14.7	.618	.132	-.2546	-1.55	56	.126
IQ										
Full Scale	91.53	14.046	2.341	90.14	9.843	2.099	1.3914	.41	56	.686
Verbal	90.67	14.734	2.456	90.14	9.342	1.992	.5303	.15	56	.881
Performance	93.36	15.142	2.524	90.68	12.469	2.658	2.6793	.70	56	.488
Years Receiving Special Education	6.7	1.579	.263	6.2	1.435	.306	.5404	1.31	56	.196
Years in School District	5.1	2.557	.426	4.8	3.142	.670	.2652	.35	56	.727

**Table 1 b**  
**Summary of Demographic Data on Student Participants**

Characteristics	Enterprise		Voyager		Chi-Square Value	df	Significance
	White	Non-White	White	Non-White			
Ethnicity	30 (83.3%)	6 (16.7%)	14 (63.6%)	8 (36.4%)	2.89315	1	.08896
Gender	Male	Female	Male	Female	Chi-Square Value	df	Significance
	28 (77.8%)	8 (22.2%)	17 (77.3 %)	5 (22.7%)			
Socio-economic status	Non-Eligible Free/Reduced Lunch 33 (91.7%)	Eligible Free/Reduced Lunch 3 (8.3%)	Non-Eligible Free/Reduced Lunch 18 (81.8)	Eligible Free/Reduced Lunch 4 (18.2%)	1.24803	1	.26393

**Table 1 c**

**Summary of Demographic Data on Student Participants**

Characteristics		Enterprise				Voyager						
Mother's Educational Level	Some HS	HS Diploma	Some College	College Degree	Some HS	HS Diploma	Some College	College Degree	Chi-Square	df	2-Tail Sig.	
	0 (%)	18 (50%)	6 (16.6%)	12 (3.4 %)	2 (9.1%)	10 (45.5%)	7 (31.8%)	3 (13.6%)	6.77826	3	.07931	

**Table 2**

**School Staffing Patterns**

<b>Staff</b>	<b>Enterprise</b>	<b>Voyager</b>
<b>Principals</b>	<b>1</b>	<b>1</b>
<b>Assistant Principals</b>	<b>2</b>	<b>2</b>
<b>Counselors</b>	<b>3</b>	<b>2</b>
<b>Psychologists</b>	<b>1 day per week</b>	<b>1 day per week</b>
<b>Social worker</b>	<b>1 day per week</b>	<b>1/2 day per week</b>
<b>Teachers</b>	<b>63</b>	<b>52</b>
<b>Special Education Teachers</b>	<b>9</b>	<b>4</b>



**Table 3**

**Special Education Teacher Characteristics**

<b>Characteristics</b>	<b>Enterprise (<math>n = 9</math>)</b>	<b>Voyager (<math>n = 4</math>)</b>
<b>Years experience</b>	<b>3-12 (<math>M = 6.25</math>)</b>	<b>2-10 (<math>M = 6.00</math>)</b>
<b>Master's degrees</b>	<b>9 (100%)</b>	<b>4 (100%)</b>
<b># Endorsed for assignment</b>	<b>9 (100%)</b>	<b>4 (100%)</b>

**Table 4**

**General Education Teacher Characteristics**

<b>Characteristics</b>	<b>Enterprise (n = 63)</b>	<b>Voyager (n = 52)</b>
<b>Years experience</b>	<b>2-24 (M = 17.3)</b>	<b>4-27 (M = 18.3)</b>
<b>Master's degrees</b>	<b>4 (33%)</b>	<b>3 (38%)</b>
<b># Endorsed for assignment</b>	<b>12 (100%)</b>	<b>8 (100%)</b>

**Table 5**

**Summary of IEP Goals Data**

	Enterprise			Voyager			Mean Difference	t-Value	df	2-Tail Sig.
	Mean	SD	SE of Mean	Mean	SD	SE of Mean				
Total of IEP Goals	3.2	1.198	.200	2.5	1.144	.244	.7222	2.27	56	.027
Standards of Learning Goals	1.7	1.242	.207	.14	.468	.100	1.5303	6.66	48.74	.000
Remedial Goals	.92	1.079	.180	1.9	1.065	.227	-.9924	-3.42	56	.001
Learning Strategies Goals	.39	.549	.092	.36	.727	.155	.0253	.15	56	.881
Behavior Goals	.25	.604	.101	.09	.294	.063	.1591	1.34	53.92	.185

**Table 6**

**Summary of IEP Objectives Data**

	Enterprise			Voyager			Mean Difference	t-Value	df	2-Tail Sig.
	Mean	SD	SE of Mean	Mean	SD	SE of Mean				
Total of IEP Objectives	10.9	5.002	.834	7.6	4.328	.923	3.2980	2.56	56	.013
Standards of Learning Objectives	4.7	3.186	.531	4.5	.739	.157	4.2677	7.71	40.90	.000
Remedial Objectives	3.4	2.820	.470	4.1	3.121	.665	-.7753	-.98	56	.333
Learning Strategies Objectives	2.0	1.920	.320	1.1	1.424	.304	.8359	1.90	53.76	.063
Behavior Objectives	.70	1.864	.311	1.9	2.054	.438	-1.1692	-2.23	56	.030

**Table 7**

**SUMMARY OF IEP ACCOMMODATIONS DATA**

	Enterprise			Voyager			Mean Difference	t-Value	df	2-Tail Sig.
	Mean	SD	SE of Mean	Mean	SD	SE of Mean				
Total Accommodation	14.8	6.189	1.032	5.6	2.258	.481	9.1136	8.01	48.10	.000
Instructional Accommodation	7.9	3.353	.559	3.5	1.566	.334	4.3889	6.74	53.16	.000
Assessment Accommodation	5.9	2.856	.476	1.8	.869	.185	4.1162	8.06	44.70	.000
Behavioral Accommodation	.97	1.183	.197	.36	.727	.155	.6086	2.17	56	.034

**Table 8**

**Summary of Student Time Receiving Special Education**

	Enterprise			Voyager			Mean Difference	t-Value	df	2-Tail Sig.
	Mean	SD	SE of Mean	Mean	SD	SE of Mean				
Minutes per Week Receiving Special Education	740.0	265.3	44.223	252.3	142.876	30.461	487.7273	9.08	55.33	.000

**Table 9**

**Summary of Course Grades Data**

	Enterprise			Voyager			Mean Difference	t-Value	df	2-Tail Sig.
	Mean	SD	SE of Mean	Mean	SD	SE of Mean				
Language Arts	2.41	.806	.134	1.772	1.020	.218	.6439	2.67	56	.010
Mathematics	2.4	.969	.162	1.818	.853	.182	.6263	2.50	56	.016
Science	2.6	1.079	.180	1.6	.908	.194	.9924	3.60	56	.001
Social Studies	2.3	.944	.157	1.6	1.008	.215	.6869	2.62	56	.011

**Table 10**

**Summary of Students Earning Course Grades of C or Above**

	<b>Language Arts</b>	<b>Mathematics</b>	<b>Science</b>	<b>Social Studies</b>
<b>Enterprise</b>	<b>33 (91.7%)</b>	<b>31 (86.1%)</b>	<b>32 (88.9%)</b>	<b>31 (86.1%)</b>
<b>Voyager</b>	<b>14 (63.6%)</b>	<b>16 (72.7%)</b>	<b>13 (59.1%)</b>	<b>11 (50%)</b>



**Table 11**

**Summary of Course Grades by Frequency**

Grades	Language Arts		Mathematics		Science		Social Studies	
	Enterprise	Voyager	Enterprise	Voyager	Enterprise	Voyager	Enterprise	Voyager
0	1	2	1	2	2	3	2	3
1	2	6	4	4	2	6	3	8
2	16	11	14	12	13	10	17	6
3	15	1	12	4	11	3	11	5
4	2	2	5	0	8	0	3	0

**Table 12****Summary of ITBS Scores**

	<b>Enterprise</b>			<b>Voyager</b>			<b>Mean Difference</b>	<b>t-Value</b>	<b>df</b>	<b>2-Tail Sig.</b>
	<b>Mean</b>	<b>SD</b>	<b>SE of Mean</b>	<b>Mean</b>	<b>SD</b>	<b>SE of Mean</b>				
<b>Language</b>	<b>143.2</b>	<b>18.698</b>	<b>3.207</b>	<b>130.9</b>	<b>19.448</b>	<b>4.349</b>	<b>12.3265</b>	<b>2.31</b>	<b>52</b>	<b>.025</b>
<b>Reading Comprehension</b>	<b>143.9</b>	<b>21.277</b>	<b>3.649</b>	<b>138.7</b>	<b>22.806</b>	<b>5.100</b>	<b>5.2412</b>	<b>.85</b>	<b>52</b>	<b>.399</b>
<b>Mathematics</b>	<b>150.2</b>	<b>18.301</b>	<b>3.139</b>	<b>139.9</b>	<b>12.100</b>	<b>2.706</b>	<b>10.3353</b>	<b>2.25</b>	<b>52</b>	<b>.029</b>
<b>Science</b>	<b>150.5</b>	<b>28.271</b>	<b>4.848</b>	<b>151.3</b>	<b>30.201</b>	<b>6.753</b>	<b>-.8294</b>	<b>-.10</b>	<b>52</b>	<b>.920</b>
<b>Social Studies</b>	<b>146.2</b>	<b>30.332</b>	<b>5.202</b>	<b>147.3</b>	<b>24.681</b>	<b>5.519</b>	<b>-1.0941</b>	<b>-.14</b>	<b>52</b>	<b>.892</b>

**Table 13****Summary of ITBS Nonstandard Administration Data**

	Enterprise			Voyager			Chi-Square	df	Sig
	Standard	Nonstandard	Exempt	Standard	Nonstandard	Exempt			
Language	31 (86.1%)	3 (8.3%)	2 (5.6%)	20 (90.9%)	0 (0%)	2 (9.1%)	2.11656	2	.34705
Reading Comprehension	31 (86.1%)	3 (8.3%)	2 (5.6%)	20 (90.9%)	0 (0%)	2 (9.1%)	2.11656	2	.34705
Mathematics	30 (83.3%)	4 (11.1%)	2 (5.6%)	19 (86.4%)	1 (4.5%)	2 (9.1%)	.94515	2	.62340
Science	31 (86.1%)	3 (8.3%)	2 (5.6%)	20 (90.9%)	0 (0%)	2 (9.1%)	2.11656	2	.34705
Social Studies	31 (86.1%)	3 (8.3%)	2 (5.6%)	20 (90.9%)	0 (0%)	2 (9.1%)	2.11656	2	.34705

**Table 14**

**Summary of Literacy Passport Domain Scores and Number of Administrations**

Reading	Enterprise			Voyager			Mean Difference	t-Value	df	2-Tail Sig.
	Mean	SD	SE of Mean	Mean	SD	SE of Mean				
Highest Score	257	10.262	1.710	254	12.015	2.622	3.4960	1.16	55	.249
Number of Administrations	2.1	1.437	.240	2.0	1.362	.290	.0934	.24	56	.807
<b>Writing</b>										
Highest Score	255	10.992	1.832	258	10.868	2.372	-3.4643	-1.15	55	.254
Number of Administrations	2.3	1.390	.232	2.6	1.501	.320	-.2854	-.74	56	.456
<b>Mathematics</b>										
Highest Score	255	6.446	1.074	254	5.006	1.092	.8294	.51	55	.614
Number of Administrations	2.0	1.183	.194	1.9	1.356	.289	.1086	.32	56	.749

**Table 15**

**Summary of Literacy Passport Tests Pass-Fail Rates and Nonstandard Administrations**

	Enterprise			Voyager					
Reading	Passed	Failed	Exempt	Passed	Failed	Exempt	Chi-Square	df	Sig.
<b>Pass-Fail Rate</b>	32 (88.9%)	4 (11.1%)	0 (0%)	16 (72.7%)	5 (22.7%)	1 (4.5%)	3.25477	2	.19644
<b>Administrations</b>	Standard 34 (94.9%)	Nonstandard 2 (5.6%)	Exempt 0 (0%)	Standard 21 (95.9%)	Nonstandard 0 (0%)	Exempt 1 (4.5%)	2.86006	2	.23930
Writing	Passed	Failed	Exempt	Passed	Failed	Exempt	Chi-Square	df	Sig
<b>Pass-Fail Rate</b>	32 (88.9%)	4 (11.1%)	0 (0%)	19 (86.4%)	2 (9.1%)	1 (4.5%)	1.70014	2	.42739
<b>Administrations</b>	Standard 35 (97.2%)	Nonstandard 1 (2.8%)	Exempt 0 (0%)	Standard 21 (95.5%)	Nonstandard 1 (4.5%)	Exempt 0 (0%)	.12816	1	.72035
Mathematics	Passed	Failed	Exempt	Passed	Failed	Exempt	Chi-Square		
<b>Pass-fail Rate</b>	32 (88.9%)	4 (11.1%)	0 (0%)	19 (86.4%)	2 (9.1%)	1 (4.5%)	1.70014	2	.42739
<b>Administrations</b>	Standard 32 (88.9%)	Nonstandard 4 (11.1%)	Exempt 0 (0%)	Standard 18 (81.8%)	Nonstandard 3 (13.6%)	Exempt 1 (4.5%)	.178771	2	.40908

**Table 16**

**SUMMARY OF SUSPENSION DATA**

	Enterprise			Voyager			Mean Difference	t-Value	df	2-Tail Sig.
	Mean	<u>SD</u>	SE of Mean	Mean	<u>SD</u>	SE of Mean				
Days of Suspension from School	.1944	1.167	.194	.7727	1.378	.294	-.5783	-1.64	38.95	.109
Days of Suspension in School	.0000	.000	.000	1.1364	3.075	.656	-1.1364	-1.73	21	.098

**Table 17**

**Summary of Student Attendance Data**

	Mean	Enterprise <u>SD</u>	SE of Mean	Mean	Voyager <u>SD</u>	SE of Mean	Mean Difference	t-Value	df	2-Tail sig.
<b>Days Absent</b>	5.6	4.095	.682	8.9	5.410	1.153	-3.3081	-2.64	56	.011

## **Appendices**

**Appendix A School Description: Enterprise Middle School**

**Appendix B School Description: Voyager Middle School**

**Appendix C Directions to Coders**

**Appendix D IEP Accommodations Check Sheet**



## **Appendix A**

### **School Description:**

**Enterprise Middle School**

## **ENTERPRISE MIDDLE SCHOOL\***

**Enterprise was a middle school (grades six through eight) staffed by a principal, two assistant principals, 63 teachers, and three full-time guidance counselors. A school psychologist, school social worker, and drug prevention counselor were assigned to the building on a part-time basis. This school met both Virginia and the Southern Association for School Accreditation standards for accreditation consistently throughout its 28-year history.**

**It had operated as a middle school for three years at the time this study was conducted. Prior to that it had been a seventh- and eighth-grade intermediate school since the 1970s. The implementation of the middle school model was based on a five-year strategic plan developed by district staff. At the time of the transition from the traditional junior high school, extensive training and professional development were provided by the district with a focus on interdisciplinary teaming, heterogeneous grouping, and developmentally appropriate instructional strategies. The district acknowledged that implementation of a middle school structure would require substantial changes in the organization of the school and in classroom instruction. Staff development was provided by well-known experts in the field, university consultants noted for their expertise in special education and inclusive education, and district staff viewed as credible curriculum and instructional leaders.**

**Enterprise's mission statement said that "all students can learn...in a safe**

*\*Fictitious names were used. The names of the two schools were changed to protect the identity of the participants.*

and orderly environment” and that the school “values diversity in both students and staff.” Enterprise was the school district’s pilot inclusive setting at that level during the 1992-93 and 1993-94 school years. The school administration, in collaboration with the central district staff, decided to continue the model upon completion of the two-year pilot study.

Enterprise Middle School provided inclusive special education services for all of its students with disabilities. Nine multiply endorsed special education teachers served students with learning disabilities (LD), emotional disturbance (ED), other health impairments (OHI), and mental retardation (MR) in grades six through eight. Students were heterogeneously grouped in general education classrooms and served through a combination of various structures: co-teaching, collaborative consultation, and monitoring

The shift from pull-out special education to inclusive service delivery occurred simultaneously with implementation of the middle school concept. Concurrently, and perhaps significantly, a new superintendent, director of middle schools, and director of student services were appointed by the school board. All three individuals were strong supporters of inclusive education for students with disabilities. Initially, the teaching staff objected to what they viewed as two significant changes occurring at once. District leaders and school administration persuaded the staff that the characteristics of successful middle schools are also the essential elements of successful inclusive schools. In particular, developmentally appropriate instructional practices, active learning strategies, accommodation and valuing of individual needs and preferences, access to a

variety of opportunities to learn and grow, and flexible grouping patterns were distinguishing factors of both middle school and inclusive school models.

The administrative staff at Enterprise Middle School supported the inclusive model. The principal and one of the assistant principals were transferred to other positions within the district during the two-year period of this study. The assistant principal who remained at the school was one of the original leaders of the inclusive effort implemented in 1992. She had extensive skill and experience in both middle school and elementary school education; in addition, she was licensed in special education although she never taught in the field. She had been assigned to Enterprise Middle School for eight years at the time that this study was conducted.

The regular routine of the administrative team at Enterprise included attendance at teacher team meetings, cyclical classroom observations, involvement in parent conferences, participation in Child Study and IEP meetings, and supervision and evaluation of teachers. Each of the administrators assumed primary responsibility for one of the three grade levels as did one of the three guidance counselors. The administrator and counselor retained responsibility for a group of students as they progressed through middle school.

Each grade level at Enterprise was divided into several instructional teams and subsequently into classes within teams. Each team had a theme-related name (e.g., Pilots and Navigators) in an attempt to build camaraderie among students. Since the school spent a substantial amount of time, money, and energy organizing around and promoting the themes, the team names were

chosen by teachers because that students might choose trendy names that lose their appeal quickly. In addition, changing names with each new group of teammates would be unlikely to foster the continuity and stability thought to be critical to the atmosphere of middle schools.

Four to six teachers formed a team that taught Core academic courses (e.g., language arts, mathematics, science, and social studies) and provided instructional behavioral support for all of their students. Teams serving students with disabilities also included a special educator, full-time, when possible. These teachers were supported by a physical education teacher and from two to four teachers for Encore elective classes (e.g., foreign language, computers, drama). The number of teachers on a team depended upon the grade level (three for sixth and four each for seventh and eighth grades). Three-teacher teams in the sixth grade helped students transition from two-teacher teams in elementary school to the four-member teams in the eighth grade, in preparation for the typical high school model with six or seven teachers for each student. Each grade-level team had from 80-85 students in the sixth grade, approximately eight to 10 of whom were students with disabilities, and from 100-120 students in the seventh and eighth grades, approximately 12 of whom were students with disabilities. This proportion of students with disabilities to students without disabilities represented the district's and the school's commitment to maintaining as close to a natural proportion as possible.

During the period of this study, average pupil-teacher ratios in Core subject classrooms at Enterprise Middle School was 26:1 at all three grade

levels, 24:1 in Encore classes, and 28:1 in physical education. Students were grouped heterogeneously by instructional and developmental needs. Students with disabilities were flexibly clustered so that, for instance, any students on a team who required reading and language arts intervention through special education was assigned to that class during the period that the special education teacher was co-teaching reading and language arts in the general education classroom. Similarly, if a student with a disability did not need mathematics intervention through special education, he or she was assigned to that class in the same fashion as any other student. This procedure ensured that students received the services required by IEPs while avoiding rigidly grouping students because of identified disabilities.

Student schedules included four Core periods (e.g., language arts, mathematics, science, social studies), one physical education class, and two electives. In order to address the special needs of at-risk students, the district developed an academic coaching model that allowed for the substitution of a coaching class for one elective. A districtwide cross-disciplinary team of teachers and administrators created a process for (a) identifying students, who had not passed all of the subtests of the Literacy Passport Tests, who scored at or below the 25<sup>th</sup> percentile on the Iowa Tests of Basic Skills, or who had failed or who were in danger of failing a class; (b) grouping them according to academic need; (c) providing additional time and instruction in each day's material. The goal was to improve classroom performance as well as to increase test scores. Whenever possible, coaching was taught by the same teacher the student had for the

subject or another teacher from the team. As was true of other academic classes, coaching classes were co-taught by general and special educators. Enrollment in coaching classes did not exceed 15 students.

General education instruction was based on the school district's locally developed curriculum for each grade level. The curriculum goals were based on the state's Standards of Learning (SOLs), prescribed objectives for each academic subject. Teachers on each team worked together to coordinate units of study to promote greater coherence and relevance for all students. The IEPs of students with disabilities were, by and large, based on general education curriculum with appropriate accommodations and modifications to address the students' weaknesses deficits and utilize their strengths.

Teachers and administrators at Enterprise Middle School created a model for implementing inclusive special education services based on team teaching and collaborative planning. General and special education teachers co-taught four periods per day and had one period of individual planning and one period of team planning. During team planning, teachers discussed curriculum concerns, classroom management, instructional strategies, and student progress. During individual planning time, co-teachers met frequently to plan academic content, presentation format, practice activities, and evaluation procedures. Once a week, during the individual planning time, all special education teachers met to coordinate their work, collaborate on challenging cases and issues, exchange information, and share successes. These teachers noted that earning credibility as rightful participants in general education was one of the major barriers they

faced. One teacher cited that challenge as having helped her to identify with students with disabilities who faced similar challenges.

Co-teaching in the general education classrooms took a variety of forms. Sometimes teachers took turns presenting the content (i.e., interactive teaching). One of the teachers instructed while the other circulated to observe and monitor student progress. Sometimes teachers divided the class into two groups and taught the lesson in parallel, or each taught part of the lesson and then switched groups. One teacher may have taken responsibility for teaching students who did not master the material initially and required additional instruction. For students whose learning objectives differed from those of most of the class, teachers may have worked with a group within the class on particular skills, using a "class-within-a-class" concept. Interactive teaching accommodated the needs of students with different but complementary objectives (i.e., when one teacher presented the content while the teaching partner instructed study skills, learning strategies, or social skills needed for success in the general education curriculum and environment). This content/process division was also evident when co-teachers used other variations, such as parallel teaching, station teaching, and alternative teaching. These approaches allowed for individualization within the general education classroom necessary for the success of heterogeneous groups of learners.

Administrators, teachers, guidance counselors, school psychologists, and school social workers at Enterprise provided support for students with disabilities through individual and group counseling related to developmental and personal



issues, career guidance activities, and structured family systems interventions. Some disability awareness training was also conducted; however, the staff reported reluctance to create an atmosphere that highlighted differences. Instead, they preferred to approach diversity and acceptance of all individuals in a more holistic manner.

Enterprise Middle School developed a reputation as an "inclusion" school both within the school district and throughout the state. Observations by professionals and families were routine. The school served as a model for other schools that were committed to the implementation of inclusive services. The staff continued to refine and enhance its model, utilizing more strategies, gathering and analyzing more and different types of outcome data, and attempting to disseminate information on their philosophy and practice.

**Appendix B**

**School Description:**

**Voyager Middle School**

## **VOYAGER MIDDLE SCHOOL\***

**Voyager was a middle school (grades six through eight) staffed by a principal, two assistant principals, and two full-time guidance counselors. A support team consisting of a school psychologist, a school social worker, and a drug prevention counselor was also assigned to the building part-time. Until it became a racially integrated intermediate school in the late 1960s, Voyager was an all-black 1-12 grade school and as such had a long history in the community. At the time this study was conducted, its refurbished auditorium had recently been dedicated to a well-known black American poet for whom the original school was named. Voyager had maintained accredited status from both the Virginia Department of Education and the Southern Association for School Accreditation for nearly three decades.**

**Voyager had existed as a middle school for three years at the time of this study. As part of the school district's five-year strategic plan to implement a middle school model, staff from Voyager participated in the professional development opportunities offered by the school district to facilitate successful change. Voyager's individual transition plan to a middle school included piloting one interdisciplinary team that developed and implemented its own curriculum. After this experience, teachers were divided into teaching teams at each grade level, three-person teams at sixth grade and four-person teams at seventh and eighth grades. The school spent substantial time and effort designing**

*\*Fictitious names used. The names of the two schools were changed to protect the identity of the participants.*

**interdisciplinary units of instruction and in organizing students into heterogeneous groups for instruction. Considerable attention was paid to issues of student discipline, as evidenced by the development of a schoolwide discipline plan and sponsorship of a peer-mediation initiative.**

**The school's mission statement spoke of a duty "... to educate all children in a healthy environment...so that they can achieve their potential and become lifelong learners." Further, it stated that the school "has a responsibility to provide curriculum and instruction which result in improved student performance."**

**Voyager served students with disabilities through pull-out special education programs. Two multiply endorsed special education teachers served students with learning disabilities (LD), emotional disturbance (ED), and other health impairments (OHI) in grades six through eight in a resource room. A third special educator taught a self-contained class for students mental retardation (MR).**

**Voyager did not request to be the pilot site for the implementation of middle school inclusive special education services. A number of factors may explain this. First, Voyager had experienced a series of administrative changes as the result of two resignations, a death and a reassignment. Additionally, no administrator at Voyager at the time of site selection expressed an interest in leading the initiative. Moreover, there had been no advance preparation at that site for such a systemic change. These circumstances were determined by district administrators to make successful implementation less likely than at another site.**

**A three-person administrative team remained intact at Voyager during the two-year period of this study. While they shared responsibility for special education services, one of the assistant principals was assigned that area as a primary duty. In her role as administrator of special education, she attended child study meetings, chaired IEP committee meetings, and supervised and evaluated special education teachers.**

**Each grade level at Voyager Middle School was divided into instructional teams and subsequently into classes. Each team had a theme-related name (e.g., Trekkers and Travelers), fostering a sense of closeness and belonging. Several teams had t-shirts for their students with their logos printed on them. Teachers could also be seen wearing theirs on "School Spirit Days." Conscious effort went into ensuring that students were heterogeneously grouped by instructional need, developmental characteristics, and ethnicity. Each team had from four to six teachers, depending on the grade level, supported by two to four elective (Encore) teachers. Grade-level teams had between 80 and 85 students in the sixth grade and between 100 and 120 students each in the seventh and eighth grades. During this study, average pupil-teacher ratios in Core academic classrooms were 28:1 in sixth grade, 29:1 in seventh grade, and 26:1 in eighth grade. Numbers in elective classes were 22:1 and in physical education, 28:1.**

**Students with disabilities were not assigned to teams or classes any differently than other students. Their schedules, however, included the number of special education resource class periods required by their IEPs. For some students that represented a one- or two-period block. For others the periods were**

not blocked but spread throughout the day. Special education resource classes were substituted for electives. For example, if a student with a disability required direct intervention from a special educator, he or she forfeited elective studies, such as band, computers, or drama. Students received primary instruction in Core academic areas in general education classrooms and received remedial instruction in the resource room.

Instruction in general education classrooms at Voyager was based on the school district's locally developed curriculum for each grade level. This curriculum was based on the state's Standards of Learning (SOLs), prescribed objectives for each subject. Teachers on each team coordinated units of study to assist students in making the connections between academic disciplines. Any accommodations and modifications required for a student's success were outlined in his or her IEP. Some of them, such as use of assistive technology or prepared copies of class notes, were implemented by general education teachers. Others, such as oral administration of tests or completion of class assignments, were implemented by special education teachers in the resource room.

Interaction between general and special education teachers at Voyager consisted largely of reviews of student progress focused on problem areas in which the special educator offered possible solutions and the general educator provided a list of skills, incomplete assignments, or tests the student needed assistance with in the resource room. Meetings usually took place before or after school. Other less formal contact would take place while passing in the halls or

during lunch breaks. Most of the students with disabilities were encouraged to keep assignment notebooks to take home. Special educators relied heavily on those notebooks to remain apprised of the status of their students. Special education teachers were not assigned to general education teams and did not routinely attend team meetings. Instead, their presence was typically requested if a student was experiencing an academic or behavioral crisis. The expertise of special educators was also tapped when a student without a label presented a challenge with which the team wanted assistance.

Students who had not passed all subtests of the Literacy Passport Tests, who scored at or below the 25<sup>th</sup> percentile on the Iowa Tests of Basic Skills, or who had failed or were in danger of failing a class, may have substituted an academic coaching class for one elective. This caused some difficulties for students receiving special education because they would not have a period to substitute if they were already in a pull-out resource room. Additionally, if a student attended a resource period once a day in lieu of an elective class, attending a coaching class left him or her with no elective. Both special and general educators admitted that this was an unattractive option for struggling students who sometime achieved their only measurable school success in elective classes.

Guidance services for students with disabilities at Voyager were provided on a pull-out basis and focused on developmental and personal issues, and career awareness. As the school moved from the traditional organizational model

to the middle school model, more emphasis was placed on group guidance rather than individual counseling.

Staff at Voyager Middle School continued to assess the effectiveness of pull-out special education programs. They expressed a desire to investigate those inclusive practices that they could implement in their setting without having to dismantle the resource room, which both general and special educators saw as important and successful.



**Appendix C**  
**Directions to IEP Coders**

## Directions to Coders:

In your packet are the goals and objectives from IEPs of middle school students. Your task is to code both goals and objectives by the categories described below. Please feel free to use the curriculum guide if you are unsure of whether or not a goal or objective is part of the standard curricula.

In addition to portions of IEPs, you have tally sheets for coding. They are coded by student with the appropriate number of sheets for the goals and objectives you have been assigned.

**SOL (Standard of Learning)** Goals and objectives related to SOLs reflect standard curricula (learning objectives) at a particular grade level or for a specific course prescribed by either the state of Virginia or the school district from which these IEPs were collected. You will see that the local school district standards are usually denoted as YCO.

An example is mastery of core course content with objectives that reflect specific learning objectives for the course.

**Remedial Basic Skills** Goals and objectives for remedial instruction address skill deficits such as reading, math, and written language.

Examples of remedial basic skills are phonics, word recognition, reading comprehension, basic math facts, simple writing samples, etc.

**Thematic Units** Goals and objectives for thematic units organize content around an interesting theme or topic.

Examples are outer space, animals, bravery, or music.

**Learning Strategies/Study Skills** Goals and objectives based on learning strategies/study skills emphasize learning rules, procedures, and processes that lead to the acquisition of behaviors necessary for mastery of academic content.

Examples are use of note-taking and note cards, test-taking strategies, use of assignment notebooks and calendars, pre-writing strategies, mnemonics, outlining, and other methods which help students to compensate for weaknesses and master learning objectives.

**Affective/Behavioral Skills** Goals and objectives based on affective/behavioral intervention emphasize development and/or enhancement of inter- and intra-personal skills, self-management skills, and social /adaptive skills, which help students to meet behavioral expectations in the school community. These goals and objectives are aimed at social deficits and are designed to

remediate inappropriate behavior by decreasing or eliminating negative behaviors and emphasizing or reinforcing appropriate behaviors.

Examples are decreasing talking-out or off-task behaviors while increasing work completion.

**Vocational/Career Skills** Goals and objectives based on a vocational/career model focus on prerequisite and requisite skills for employment.

Examples are independent, self-monitoring and self-management, and task completion.

**Appendix D**

**School District**

**Middle School IEP Accommodations Check Sheet**

## **ACCOMMODATIONS CHECK SHEET**

Please check appropriate items and attach form to each IEP.

**NAME** \_\_\_\_\_

**DATE** \_\_\_\_\_

### **ASSESSMENT ACCOMMODATIONS:**

Tests read orally, paraphrased, and dictated answers  
Short-answer, multiple-choice, or true/false response  
Modified tests (altered form or shortened)  
Word bank provided  
Limited choices on multiple-choice  
Score based on number correct out of number attempted  
Extra time for test completion  
Individual or small-group administration  
Use of calculator, spell-check, or tables  
Dictation, scribing, recorded, or word processor responses  
Assistance with transfer of responses to scantron sheet

### **INSTRUCTIONAL ACCOMMODATIONS:**

Taped texts  
Highlighted materials  
Taped lectures  
Notetaking assistance  
Extended time for completion of assignments  
Shortened assignments  
Assignment notebook  
Study sheets  
Repeated review and drill  
Use of assistive technology for written assignments  
Use of calculator, spell-check, or tables  
Preferential seating  
Multisensory techniques  
Clear, concise instructions  
Visual models: diagrams, mapping, formulas

### **BEHAVIORAL ACCOMMODATIONS:**

Frequent breaks  
Defined limits  
Cooling off periods  
Concrete reinforcers  
Positive reinforcement

**OTHER:** \_\_\_\_\_