A COMPARISON OF LEARNING OUTCOMES FOR STUDENTS WITH DISABILITIES TAUGHT IN THREE DISSIMILAR CLASSROOM SETTINGS: SUPPORT SERVICES, TEAM/COLLABORATIVE AND DEPARTMENTAL/PULLOUT

Except where reference is made to the work of others, the work described in this dissertation is the author's own or was done in collaboration with her advisory committee. This dissertation does not include propriety or classified information.

_____

Jackie Echols Powell

Certificate of Approval:

_____	_____
Ronald C. Eaves Professor Rehabilitation and Special Education	Craig B. Darch, Chair Professor Rehabilitation and Special Education
_____	_____
Vivian M. Larkin Assistant Professor Rehabilitation and Special Education	David M. Shannon Professor Educational Foundations, Leadership and Technology

_____

George T. Flowers
Interim Dean
Graduate School

A COMPARISON OF LEARNING OUTCOMES FOR STUDENTS WITH DISABILITIES TAUGHT IN THREE DISSIMILAR CLASSROOM SETTINGS: SUPPORT SERVICES, TEAM/COLLABORATIVE AND DEPARTMENTAL/PULLOUT

Jackie Echols Powell

A Dissertation

Submitted to

the Graduate Faculty of

Auburn University

in Partial Fulfillment of the

Requirements for the

Degree of

Doctor of Philosophy

Auburn, Alabama
May 10, 2007

A COMPARISON OF LEARNING OUTCOMES FOR STUDENTS WITH DISABILITIES TAUGHT IN THREE DISSIMILAR CLASSROOM SETTINGS: SUPPORT SERVICES, TEAM/COLLABORATIVE AND DEPARTMENTAL/PULLOUT

Jackie Echols Powell

_____
Signature of Author

_____
Date of Graduation

VITA

Jackie Doreen (Alston) Echols Powell, daughter of the late Jerry Lee and the late Etta Mae (Johnson) Alston, was born September 19, 1960, in Brooklyn, New York. She graduated from Peach County High School in 1978. She began her studies at the University of West Georgia in September 1978 and graduated with a Bachelor of Science degree in Special Education in 1982. After pursuing a Master of Education Degree in Learning Disabilities and an Education Specialist Degree in Behavior Disorders, she entered Graduate School at Auburn University in August 1993. She is married to Darnell Powell, former New York Jets and Buffalo Bills NFL player, son of Thomas Jefferson and Johnnie Mae (Render) Powell.

DISSERTATION ABSTRACT

A COMPARISON OF LEARNING OUTCOMES FOR STUDENTS WITH DISABILITIES TAUGHT IN THREE DISSIMILAR CLASSROOM SETTINGS: SUPPORT SERVICES, TEAM/COLLABORATIVE AND DEPARTMENTAL/PULLOUT

Jackie Echols Powell

Doctor of Philosophy, May 10, 2007
(Ed.S, University of West Georgia, 1986)
(M.S., University of West Georgia, 1983)
(B.S., University of West Georgia, 1982)

91 Typed Pages

Directed by Craig B. Darch

Learning outcomes for students with mild learning and behavioral disabilities (SWD) are receiving national attention as a result of educational reform focusing on student achievement. This educational reform is the No Child Left Behind Act (NCLBA) of 2001. The effect of the law on helping educate SWD is attracting attention because of the disparate achievement gap between these students and their peers without disabilities. This study compared the learning outcomes of SWD taught in three instructional service delivery models, measured by the Georgia Criterion Reference Competency Test

(CRCT). The CRCT is the state's approved assessment. The participants were 110 eighth-grade SWD. Performance on reading, English Language Arts (ELA), and math were analyzed in this study. The findings of the study show that the group means of each model gained in performance and no model was significantly different from the other, even when combined with time. However, irrespective of model, or time with model, time did make a significant difference in performance scores of SWD. These findings suggest that given time and access to the curriculum, SWD can successfully participate in statewide assessment programs. Supported is current research driving NCLB and need for accountability to ensure that no child is left behind.

ACKNOWLEDGEMENTS

The author would like to thank Dr. David Shannon for his assistance with the statistical analyses and Dr. Craig Darch for introducing us to each other. Thanks are also due to my husband Darnell and my son Michael-David for their support and prayers during the journey of this dissertation.

Style of manuals: American Psychological Association Manual (5th ed.)

Computer software used: Microsoft Word XP, Statistical Package for the Social Sciences (SPSS)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION TO THE PROBLEM

If schools are not constantly improving and growing in their capacity to meet the needs of today's students then they are losing ground and failing in their mission of service to young people. — Stone & Fahir, 2004

Background

Figures obtained from the United States Department of Education, Digest of Education Statistics [DES] (2001) reveal that special education is currently serving over 4.4 million students with disabilities (SWD) in the public schools of the United States (DES, 2001). Research shows that SWD are three times more likely than their general education peers to drop out of school. A major cause of dropping out of schools is poor academic performance (DES, 2001). In essence, outcomes for SWD include a widening achievement gap between them and their peers without disabilities (US Department of Education [USDOE], 1994). Ineffective instruction may play a part in both the low-test scores and gradual loss of interest in education by SWD (Brophy & Good, 1986).

Traditional teacher-directed educational models used in most classrooms are based on textbooks that overwhelm many students, especially SWD. The result of this type of teacher-directed instruction is that students often resort to rote learning rather than building understanding (Baker & Zigmond, 1995). Research indicates that providing

specialized models and instructional strategies for SWD may help raise achievement scores and perhaps help prevent SWD from dropping out of school (Chan, 1991; Darch, Carnine, & Gersten, 1984).

Statement of the Problem

Hehir, Stariha, and Walberg (1991) argue that special education has become a process-driven system. The emphasis has been on ensuring that students receive services, but not necessarily on whether they benefit from those services. In order to raise achievement scores, attention must turn to performance outcomes of special education programs from which SWD are receiving their instruction. Including SWD in statewide testing programs necessitates reviewing models of instruction for these students. Students with disabilities are typically removed from general education classes for their instruction, and thus removed from access to the general curriculum (Brophy & Good, 1986). Nevertheless, student gains in the general curriculum are considered important; such student gains are defined to include SWD (McLaughlin & Warren, 1992b).

To help address discrepancies in achievement scores between SWD and students without disabilities, states have received guidance from the reauthorization of the Elementary and Secondary Education Act (ESEA), the No Child Left Behind Act of 2001 (NCLBA). This federal law represents a major departure from a long history of localized control over essential education decisions, according to Jehlen and Winans (2005). The desire to include SWD in the NCLBA raises several concerns for public school systems. Some of these concerns include the need for highly qualified staff; the need for understanding appropriate curriculum and instruction; and the need for accountability

(Kafer, 2004). The NCLBA changes the culture of America's schools by trying to close the achievement gap between SWD and their peers without disabilities, offering more flexibility in instructional programming, giving parents more options, and providing all students with research-based instruction for progress (Meyer, 2004; Jehlen & Winans, 2005). The changing demographics of students served by public schools make it imperative for all teachers to be trained in effective teaching strategies. This might help schools meet the needs of the diverse populations of students (Kauffman, 1989).

According to the NCLBA, every student should make substantial academic progress every year in every class. Effective instruction will help ensure that students meet this goal. Holding schools accountable for the academic achievement of all subgroups helps ensure that no child is left behind. If a school is allowing certain groups to fall behind year after year (e.g., children with disabilities), testing will expose the problem (Meyer, 2004; Paige, 2003). Measuring the progress of SWD in the public schools has come about because legislators agree that failure or lack of achievement will no longer be funded with federal tax monies (Meyer, 2004; Paige, 2003). Since 1965, more than $321 billion in federal funding has been spent to help schools provide the best education possible for SWD. Under the old law, schools continued to receive this funding whether or not their students learned to read or perform basic math skills. The *NCLBA* ties funding to academic achievement for the first time in the history of education. Chronic underachievement is no longer adequate or acceptable (Paige, 2002a, 2002b). Schools that do not demonstrate adequate yearly progress (AYP) for two consecutive years are identified as needing improvement and are subject to immediate interventions—beginning with technical assistance and then more serious corrective actions if the school

continues to not make AYP (Meyer, 2004; Paige, 2002a, 2000b). However, caution must be used with this interpretation of progress because schools can fail to meet AYP for reasons that have nothing to do with the quality of instruction. For example, if less than 95% of any subgroup of students takes the test, the school may fail to meet AYP (Meyer, 2004).

Under the NCLBA accountability provisions, the states must explain how they will close the achievement gap and make sure all students achieve academic proficiency. Every student must make the grade on state-defined education standards. To reach the standards every state has developed benchmarks to measure progress and make sure every child is learning.

In order to evaluate the instruction of SWD, data must be collected that links instructional service delivery models (ISDM) to achievement. The ISDM must be accountable for allowing SWD access to the general curriculum. This study attempts to compare differences in three ISDM on the measured performance outcomes of the general education curriculum. Another goal of this study is to determine whether there is a significant difference in performance scores on the CRCT for SWD because of the ISDM.

Purpose of the Study

The purpose of this study is to compare the performance outcomes of SWD in three dissimilar ISDM. The study gives a review of the NCLBA, CRCT, and the ISDM. The study discusses academic characteristics of SWD, and reviews historical and current literature in achievement in special education programs. According to Moore, Monaghan,

and Hartman (1997), knowing and revisiting our history helps us understand the conceptual background of current issues and situations and contributes to "a measured grasp of the big picture, that is difficult to attain during contemporary calls for action" (p. 92). Unfortunately, the literature review demonstrates that strides made by SWD are not positive in depth or direction as revealed by the results of testing programs (Digest of Education Statistics, 2001).

This research describes the ten goals outlined for SWD by the NCLBA of 2001. According to the NCLBA, all states must demonstrate improvement in student test scores in reading, ELA, and mathematics each year (Jehlen & Winans, 2005; Paige, 2002). The literature on the NCLBA reflects the importance of teaching the general curriculum to SWD. This research defines and discusses the academic characteristics of SWD, and provides the educational implications of the characteristics. Models used for the instruction of SWD are reviewed. In particular, this study completes an analysis on three different ISDM and their effects on closing gaps in achievement in special education programs. A summary of the analysis includes the performance scores as measured by the CRCT, and raises issues still to be addressed by the analysis. The comparison of the instructional models and their results indicate a further need for studying the ISDM to determine their effect on outcomes for SWD.

Research Questions

1. Is there a significant difference in the performance outcomes of SWD on the CRCT in three dissimilar ISDM?

2. Is there a significant difference in the performance outcomes of SWD on the CRCT over time?

3. Is there a significant difference in the performance outcomes of SWD on the CRCT over time in the three dissimilar ISDM?

Data with the performance scores of the content domain tested were used to analyze the scores of the SWD. Content domains divide the reading, ELA, and math scores. The score of 300 represents the standard for proficiency in each domain.

Definition of Terms

The definitions used from the Georgia Department of Education, Division of Exceptional Children's Services, are provided to ensure a clear understanding of the terms used in this study.

Accountability: Responsibility for one's action, particularly for objectives, procedures and results of one's work and program; involves an explanation of what has been done. Generally describes responsibility for instruction, program implementation, and results.

Assessment: A tool used to measure an established criterion or criteria; includes set competencies, indicators, and descriptors of material to be learned.

Departmental or pullout delivery model (DP): A special education classroom environment where SWD receive instruction from a special education teacher for the content taught.

Georgia Student Assessment Program (GSAP): Designed to measure student achievement of the state mandated curriculum, to identify students failing to achieve

mastery of content, to provide teachers with diagnostic information, and to assist school systems in identifying strengths and weaknesses in order to establish priorities in planning educational programs.

Instructional Service Delivery Model (ISDM): The instructional environments of SWD.

No Child Left Behind Act (NCLB): An educational reform policy that lays the foundation for improving student achievement through state identified standards.

Quality Core Curriculum (QCC): A curriculum utilized in the state of Georgia that includes content domains for all subjects K–8 and 9–12 including guidance.

Scientifically based research: Research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs.

Students with disabilities (SWD): SWD are characterized by a significant difference in the child's achievement in some areas, as compared to his or her overall intelligence according to federal and state regulations for eligibility.

Support services delivery model (SS): A teaching model distinguished by the use of a paraprofessional assisting the student with disabilities in the general education classroom with the general education teacher as the teacher of record in teaching the content taught.

Team or collaborative service delivery model (TC): A partnership where two or more individuals or organizations actively work together on a project or problem. Teachers are certified in the state in which they teach in the TC model. The general education teacher is usually the teacher of record for content taught.

Limitations of the Study

The sample in this study includes SWD from five middle schools in Georgia. All public school children in this state are evaluated on the CRCT. Only those eighth-graders with mild learning and behavior disabilities were included in this study. This sample may not be representative of all eighth-graders with disabilities in the United States. Each state has its own eligibility requirements and each school district has the ability to decide which students may benefit from participating in an alternate assessment.

Importance of the Study

The results of this study may be used to further define the use of delivery models for instruction. The data gathered contain information regarding performance outcomes for SWD while (a) in the three dissimilar ISDM, (b) across time, and (c) across time in the three ISDM. This may be beneficial for schools and school districts that are looking at making instructional decisions about special education delivery options. This study also compares change in group means in the three content areas analyzed. The results of this study provide a view of performance outcomes, change over the years, and a way of showing growth, and the continuing educational needs of SWD. This study will also help individuals begin to acknowledge the benefit of having SWD included in statewide assessments. This study will help move school systems toward closing the gaps in achievement between SWD and their peers without disabilities. Rigorous attention aimed at access to the general curriculum in the ISDM, may close the gap in achievement.

Summary

While instructional service delivery models (ISDM) play a vital role in the education of SWD in this age of accountability, the models must show effectiveness in increasing student performance through access of the general curriculum. Effective delivery of instruction is the key to successful learning outcomes for SWD. Chapter One provides background information on the need to look at performance for SWD on statewide tests and how they measure up to their peers. It also provides a discussion on how SWD may access the general curriculum. This chapter also gives a historical perspective and provides the purpose, research questions, limitations, key definitions, and the importance of the study. Chapter Two presents a review of the literature relevant to the study. In Chapter Three discusses the research design, instrumentation, experimental procedures, data processing, and analysis. The results of the data collection and statistical analysis are presented in Chapter Four. Finally, Chapter Five provides a summary of the study with recommendations and suggestions.

II. REVIEW OF THE LITERATURE

Let us use the wisdom of the past to address the challenge of accountability today and tomorrow. — Gysbers, 2004

History of the NCLBA of 2001 and SWD

In moving to improve education for all students, President Bush signed on January 8, 2002, the NCLBA, into federal law. This Act revised the 1965 Elementary and Secondary Education Act (Robelen, 2005). The basic purpose and provisions of NCLB are to ensure that each child in the United States meets the learning standards established by his or her state. No Child Left Behind was passed to raise achievement levels for all students, provide new accountability measures linked to state standards, and better prepare teachers for today's learners (Riley, 2002; Robelen, 2005). No Child Left Behind is built on four common-sense pillars: (a) accountability for results, (b) an emphasis on doing what works based on scientific research, (c) expanded parental options, and (d) expanded local control and flexibility (Paige, 2003). Meyer (2004) states that despite billions of federal dollars having been spent to improve student achievement and close the achievement gap over the past 40 years, test scores have remained flat. Students with disabilities as a group are not performing on national and statewide tests as well as their peers without disabilities. Therefore, performance goals for SWD became part of the

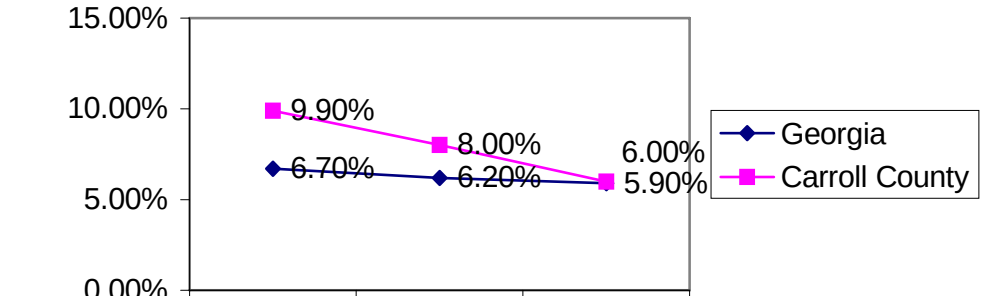
nation's educational agenda with the signing of NCLB. These goals are to help ensure that all students will be able to meet high academic standards (Paige, 2003; Riley, 2002). Ten performance goals for SWD are outlined in the implementation of NCLB. The ten goals are:

1. Decrease the percentage of SWD who drop out of school.
2. Increase the percentage of SWD who earn a regular education diploma.
3. Decrease the gap in performance between students with and without disabilities on statewide achievement tests.
4. Increase the percentage of time SWD receive instruction in the general educational setting with appropriate supports and accommodations.
5. Increase the percentage of "fully certified" personnel who teach SWD.
6. Increase the percentage of SWD who transition to their desired post-school outcome.
7. Increase the percentage of parents of SWD who are active and satisfied participants in their child's education.
8. Decrease the percentage of SWD who are removed from school for disciplinary reasons.
9. Increase the percentage of young children who are receiving intervention services.
10. Decrease the disproportionate representation of SWD to reflect the demographics of the general population.

The goals for SWD are measured for accountability through a report card developed by the state to ensure that each system is meeting the target. The following

tables compare Georgia's performance with the national performance. The performance of the school system in this study is comparable to the state's data.

Figure 1 provides the percentages of SWD who drop out of school. The percentage of SWD in Carroll County dropping out of school ranges from 9.9% to 6.0% over the past three years. The number of special education students dropping out has changed very little according to Carroll County's 2005–2006 Continuous Improvement Monitoring Plan (CIMP). Figure 1 shows that the school system continues to decrease the percentages of students who exit school by dropping out. As part of the school system's school reform efforts, they have targeted educational factors that may influence the dropout rate of SWD. One factor is the instructional models of SWD and their possible effects on student achievement levels. This study reviews three models of instruction and their influence on levels of achievement in SWD.

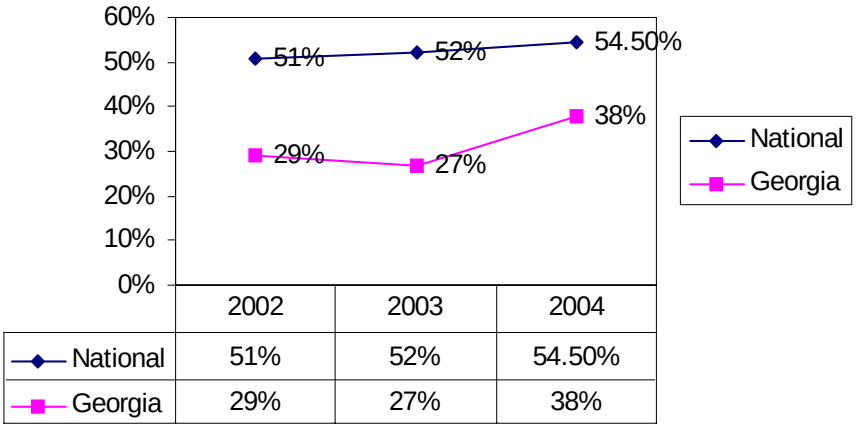


	FY2003	FY2004	FY2005
Georgia	6.70%	6.20%	5.90%
Carroll County	9.90%	8.00%	6.00%

Figure 1. Percentage of SWD Who Drop Out Of School

Figure 2 provides the percentage of SWD who earn a regular education diploma. As shown in Figure 2, the percentage of SWD in Georgia who earn their regular

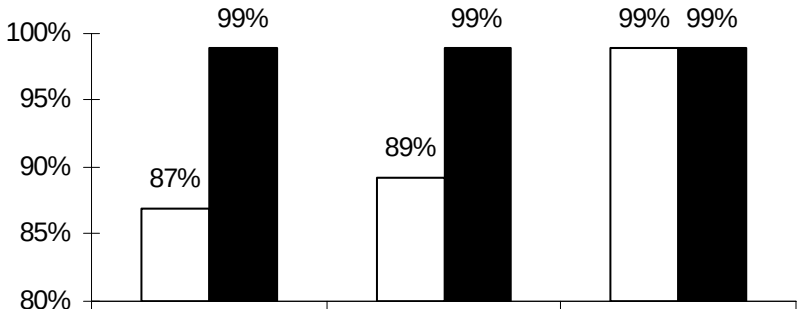
education diploma does not compare well with national percentages. For example, note that for three years, less than 40% of SWD in Georgia received their diploma. According to Carroll County's district profile for SWD, only 28.1% exited with a general education diploma in 2005 (CIMP 2005). A closer look at the instructional models of SWD may provide insight of the percentages in earning a diploma.



	2002	2003	2004
National	51%	52%	54.50%
Georgia	29%	27%	38%

Figure 2. Percentage of SWD Who Earn a Regular Education Diploma

Figure 3 provides the percentage of students who participated in statewide testing. As shown in Figure 3, Carroll County includes nearly all of its SWD in statewide assessments, unlike other school districts in the state and nation. Since Carroll County includes all students in statewide assessments, determining which instructional models have an impact on achievement levels would be especially helpful.



	2002	2003	2004
□ Georgia	87%	89%	99%
■ Carroll County	99%	99%	99%

Figure 3. Percent of Students Who Participated In Statewide Testing

Including all Georgia students in statewide assessments has made decreasing the performance gap an objective for all of the state's school systems; Carroll County is no exception. As stated before, it is useful to look at the effectiveness of the instructional models for SWD to determine the effects that the models may have on closing the gap on student achievement.

Table 1 shows the difference in percentages between the Meets and Exceeds Groups for SWD and General Education Students (GES). A review of the data indicates SWD who met or exceeded the standards in math had a difference gap of 60% from their general education peers in 2004. Knowing whether an instructional model made a difference in the achievement levels of SWD might help the school system determine special education program needs.

Table 1

Difference in Percentage between the Meets and Exceeds Groups for SWD and GES in 2004.

	SWD	GES	Difference Gap
Reading	50%	89%	39%
ELA	38%	86%	48%
Math	29%	89%	60%

Note: SWD = Students with Disabilities, GES = General Education Students, ELA = English and Language Arts

The Carroll County School district continues to increase the number of students who participate in the general education program for more than 80% of the school day. The Carroll County School district surpasses both state and national averages for special education students participating in general education programs. Overall, a positive trend line has been recorded since the system implemented training for schools regarding collaborative teaching, differentiated assignments, implemented scaffolding in all classrooms, and advocated for the least restrictive environment for all students with disabilities (CIMP, 2005).

Prior data show that students who do not access the general curriculum generally perform poorer on standardized tests than their peers who access the general curriculum. Analyzing the amount of time students are pulled out of the general education classroom for instruction helps in program planning. It helps in program planning because it allows

the special educator to realize the need to be highly qualified in the content in which they are instructing the student with special needs. The NCLBA specifically speaks to the need for all students to receive instruction from teachers that have met the requirements of being highly qualified. In 2004, only 77.02% of the teachers who taught in special education classrooms were fully certified to teach special education. For many years, special education teachers were not highly qualified to teach the subjects taught to their students.

The end of the 2006 school year put an end to this issue by requiring school systems to hire and renew for employment only those teachers who met the highly qualified requirements. The highly qualified teacher requirements in NCLB apply to all general education teachers and special education teachers who teach core academic subjects. All teachers must have in-depth understanding of the subject matter they are teaching their students, so students can meet grade-level standards. These requirements apply whether the teacher provides core academic instruction in a regular classroom, a special education classroom, or any other setting.

Table 2 provides the percentage of SWD who completed transition to their desired post-school outcomes in the state of Georgia from 2001–2004. Although Georgia increased its efforts to provide the resources for SWD to be included in general education classrooms, almost 34% of SWD still do not transition into their desired post-school outcomes. For decades, SWD were systematically left out and left behind in getting a high-quality education which prepared them for productive citizenship (IDEA, 2004).

Table 2

Percentage of SWD Who Transition to Their Desired Post School Outcome

Georgia 2001	Georgia 2002	Georgia 2003	Georgia 2004
61.17%	62.30%	61.03%	66.44%

The large number of SWD who drop out of school and the relatively low percentage who earn a regular diploma does not point to a successful future for students served in special education programs. Although most students with disabilities are included in the statewide assessments, they do poorly on them. The gap in student achievement between the SWD and their general education peers continues. Strides have been made but new problems arise as school systems across the state seek answers as to why this gap exists. One reason for this gap may be the type of instruction the student is receiving through the service delivery models. Georgia school systems should understand the models and their role in affecting the assessment process.

Georgia Student Assessment Program

The purpose of the Georgia Student Assessment Program (GSAP) is to measure student achievement of the state-mandated curriculum. It is used to identify students failing to achieve mastery of content. The GSAP provides teachers with diagnostic information and assists school systems in identifying strengths and weaknesses in order to establish priorities in planning educational programs. In the past the GSAP did not include SWD (Meyer, 2004). An argument can be made that there is a need for evidence of the validity of the uses of the GSAP. Nevertheless, Georgia uses it as the foundation of

their statewide assessment. The GSAP requires that all assessment reporting be broken down by a student's race, ethnicity, disabilities, and other demographic subgroups to ensure that no child, regardless of his or her background, is left behind (Meyer, 2004).

As special education intervention research has grown, concerns regarding special education effectiveness have been raised. Each State Department of Education (SDOE) now collects all these data in a single statewide review system. This type of reporting will allow for tracking the performance of every school in the nation. This new information tells how well the child is doing in meeting educational standards (Paige, 2003). The standardized tests required by NCLB are designed to determine whether children are meeting their state's standards of learning for their grade and subject.

Annual assessments allow teachers to compare student progress across time. The CRCT is an annual assessment. The CRCT allows teachers to determine areas of strength and weakness in student understanding and in their own teaching. It also helps teachers and administrators in evaluating curriculum choices. Each classroom teacher receives a profile of each student's performance in each content domain. This profile of the annual assessment helps identify students who need help and their problem areas. State assessment data gives schools a powerful tool to determine the needs of students, so teachers and administrators can provide the appropriate professional development for teachers. These annual tests provide information about each child's academic strengths and weaknesses. With this knowledge, teachers can create lessons to make sure each student meets or exceeds the standards.

The Individuals with Disabilities Education Act (IDEA) requires that all SWD participate in the regular annual assessments. This participation determines whether they

are meeting the achievement goals set for them under their Individual Education Plans (IEP), as determined by their IEP teams. Alternate assessments are only appropriate when students cannot be assessed through the regular state assessments, even with appropriate accommodations. Students participating in alternate assessments were not included in this research study.

Adequate Yearly Progress for SWD

NCLB requires each state to define adequate yearly progress (AYP) for school districts and schools, within the parameters set by the NCLBA. In defining AYP, each state sets the minimum levels of improvement that is measurable in terms of student performance. The school district must achieve these levels within periods specified in the law (Riley, 2002). The NCLBA has requirements for schools not meeting the standards to receive assistance. If schools still do not show significant improvement, corrective actions must be taken (Jehlen & Winans, 2005; Paige, 2003; Riley, 2004).

A school or school district that does not meet the state's definition of "adequate yearly progress" (AYP) for two straight years (school-wide or in any subgroup) is considered to be "in need of improvement." The school's improvement plan must incorporate strategies, relying on scientifically-based research, which will strengthen the learning of core academic subjects, especially the subject areas that resulted in the school being deemed in need of improvement. Regular assessments help schools to identify subject areas and teaching methods that need improvement. When a school is "in need of improvement," school officials are required to work with parents, school staff, district leaders and outside experts to develop a plan to turn the school around.

Schools in need of improvement qualify for support to help them get back on track. Federal funds support schools in need of improvement by providing the schools with funds targeted for professional development. As part of the accountability provisions set forth in the law, NCLB has set the stage, holding schools accountable for subgroups of students, so that no child falls through the cracks (Paige, 2003).

Data Driven Decision Making

Districts can use information provided from state and local assessments to determine specific needs in their schools and use the information to allocate resources to areas where teachers need support to meet the needs of all subgroups of students. Information from assessments required under NCLB leads to informed decisions and provides the best possible instruction for student learning. Effective teachers use data to make informed decisions. They are constantly improving classroom practices to better instruct their students. One of the most important aspects of good teaching is the ability to discern which students are learning and which are not, and then to tailor instruction to meet individual learning needs. Research shows that teachers who use student test performance to guide and improve their teaching are more effective than teachers who do not use such information (Thompson & Thompson, 2006). Although testing is an important part of measuring progress, how teachers use the resulting data to drive instruction is also critical.

Special educators have critical knowledge that helps support teaching and learning. Collaboration is important in order to meet the needs of SWD in both regular classroom settings and special settings. Paraprofessionals who support services provided

in a school are also valuable resources. NCLB sets clear qualification guidelines for individuals assisting in classroom instruction. They must have at least an associate degree or two years of college, or meet a rigorous standard of quality as demonstrated through a formal state or local assessment.

Academic Characteristics of SWD

There are many characteristics reported for SWD. When a student has a disability, the student often finds learning a difficult and painful process. The label "SWD" is all-embracing; it describes a syndrome, not a specific child with specific problems. Confusion still exists with defining disabilities. There is a high degree of interrelationship and overlap among the characteristics of disabilities; therefore, children with disabilities may exhibit a combination of characteristics.

Students with disabilities have significant differences in academic achievement as compared to their overall intelligence. Blachman (1988) believes it is futile to continue looking for the prototypic child with disabilities, because disabilities are simply not a unitary construct. Consequently, not all children with disabilities will evidence social deficits any more than they will evidence problems in language or reading (Blachman, 1988). General characteristics of SWD included in this research include deficits in reading, language arts, and math.

Reading Deficits

The most prominent characteristic associated with learning for SWD is difficulty in learning to read. Research supported by the National Institutes for Health (NIH) has found that 15–20% of the population may have reading disabilities. According to Chard,

Vaughn, and Tyler (2002), fluent reading is an important skill for all students to develop. At the national level, NCLB reflects this concern with the new program called Reading First. This ambitious national initiative is designed to help every young child in every state become a successful reader. It is based on the expectation that instructional decisions for all students will be guided by the best available research. Scientific research provides tremendous insight into how children learn to read and the essential components for effective reading instruction.

Many SWD struggle to read fluently. This leads to difficulties in reading comprehension. Chard et al. (2002) synthesized research on interventions that were designed primarily to build reading fluency. This group of researchers did note, however, that it is not clear which interventions are most beneficial to struggling readers. Some SWD acquire faulty learning because they rely heavily on context to read new or unused words. When attempting to decode a word, a student with learning disabilities often says a word that may make sense in the text but may not be related phonologically. According to McCoy and Pany (1995), efforts in reading are so focused on word recognition that they detract from reading comprehension. This causes the student with disabilities to lose the meaning of text but understand the same material when it is read aloud. SWD show problems with comprehension that go beyond word recognition. When prompted to do so, SWD do not describe strategies used to assist with decoding and comprehension of text.

The assumptions by Torgesen (1989) are that most children who become poor readers experience early and continuing difficulties in learning to identify printed words. The most common cause of difficulties acquiring early word reading skills is weakness in

the ability to process phonological features. Holahan and DeLuca (1993) conducted a 10-week theme-based intervention with three classes of SWD. The intervention focused on structure and change, which were presented in a “hands-on” manner to the students 4 days per week. Hands on refers to students using manipulative materials such as workstations, file folders, and cassettes. Post-test scores on four measures were near double or double the pretest scores and were maintained on a 13 week follow up.

Deluca (1997) followed up on the theme-based approach and compared the performance of two self-contained classrooms for students with serious emotional disturbances. One class used a textbook approach and the other a “hands on” approach. The students in the “hands on” classroom performed higher than those in the textbook classroom. This raises the question of whether the students’ reading impairments or methods of instruction prevented them from being able to understand the written text (Parmer, Deluca, & Janczak, 1994). In other words, traditional styles of instruction may not be the best way to ensure the success of students in classes that require reading skills.

One of the most compelling findings from recent reading research is that children who get off to a poor start in reading rarely catch up. Lack of reading practice makes it even more difficult to restore the skills. Each month and year, those children remain poor readers by the loss of a large amount of reading practice (Rashotte, Torgesen, & Wagner, 1997). It is imperative to find interventions that will allow educators to identify children who need extra help in reading before they experience serious failure.

English and Language Arts Deficits

English and Language Arts deficits occur frequently in SWD. Dyslexia is one of several distinct characteristics associated with language disabilities. It is a specific

language-based disorder of constitutional origin characterized by difficulties in single word decoding, usually reflecting insufficient phonological processing (Oakland et al., 1998). These difficulties in single word decoding are often unexpected in relation to age and other cognitive and academic abilities; they are not the result of generalized developmental disability or sensory impairment. Dyslexia is manifest by variable difficulty with different forms of language, often including, in addition to problems in reading, a conspicuous problem with acquiring proficiency in writing and spelling. It is important to remember that many individuals with dyslexia can learn to read and write, given the appropriate supports. Because there are problems in identifying individual sounds in spoken words, SWD often make no attempt to sound out words in reading, or the attempt is done incorrectly. Many repetitions are needed to learn to recognize a new or unused word (Chard, Vaughn, & Tyler, 2002). Dyslexia usually does not involve seeing or reading words backwards. Rather, it refers to problems in learning to read, write, and spell (Oakland et al., 1998).

Some SWD do not use the appropriate text structures and frequently use sentences that contain errors in syntax or word choice (Stein & Dixon, 1999). The awkward writing grip or position causes handwriting to appear sloppy and difficult to read. Persistent problems in spelling are demonstrated as SWD spell phonetically, leaving out letters. This may keep the student from trying to write words that are difficult to spell, continuing the difficulty with mechanics of written expression. Omission or misuse of sentence markers, such as capitals and end punctuation, makes it difficult for the reader to understand the text.

Math Deficits

Math deficits may result from poor listening, organizational skills, and or strategies needed for problem solving. Learning strategies refer to methods that students use to learn. These strategies range from techniques for improved memory to better studying or test-taking strategies. Some learning strategies involve changes to the design of instruction (Carnine et al., 1985). The growing literature in information processing and memory attests to the importance of strategy use in learning and underscores the role of problems in strategy use by SWD. Historically, the research on strategy use has been limited by subject differences and by inadequate understanding of developmental antecedents. Students with disabilities tend to use strategies inefficiently when required to do so spontaneously. Even when trained to use rehearsal strategies, the effects of training appear limited to specific tasks and context in which training occurred. In other words, the generalization of strategies to different learning environments and tasks were not forthcoming. It therefore appears that SWD seldom assess the demands of a task and/or efficiently select a strategy that will lead to a solution (Carnine et al., 1985).

Brown and Palincsar (1982) discussed the importance of learning strategies for SWD to reach the goal of becoming purposeful, effective, and independent learners. Their research also indicates that using knowledge about strategies for different situations can help make students more effective, purposeful, and independent learners (NICHCY, 1997). SWD are less efficient than students without disabilities at categorizing incoming data into chunks. By failing to categorize, SWD rapidly overload their capacity to learn according to Miller, Strawser, and Mercer (1996).

Early research used a digit span task to test notions regarding the possibility of improving memory of SWD by organizing input for them. Digits were grouped spatially. For example, instead of showing digits as 9 5 3 8, the experimenter presented them as 95 38. Instead of four bits of information to remember, the students had to learn only two. Although this was found to help SWD, it was not found to help students without disabilities. The students without disabilities failed to use spontaneity in using strategies as tasks became more difficult. It therefore appears that SWD fail to organize input in an efficient manner. When organizational skills are provided, SWD appear to use them and to improve recall, provided the strategy is in their repertoire.

Wong (1987) found poor readers performed adequately on simple word problem tasks but did poorly on tasks requiring word problem organization that is more complex. The difficulty appeared to be an inability to combine and recombine particular strategies into an overall plan of organization. To succeed in math, students must develop effective techniques and habits of organization. Student with learning disabilities can suffer from temporal-sequential disorganization and material and spatial disorganization. Temporal-sequential disorganization is difficulty allocating and estimating time, following schedules, meeting deadlines, and solving problems in stages. Material-spatial organization is keeping track of possessions, maintaining notebooks, arranging desks, and finding objects. To be successful SWD must organize strategies and generalize them from each task.

Math deficits in individuals with disabilities may be due to difficulties in listening to directions on how to solve problems. Abstract words or concepts are difficult to understand. SWD may request repetitions or concrete explanations or examples. SWD

have difficulty with non-literal or figurative language, such as metaphors, that may be used in word problems (Lindamood & Lindamood, 1984).

Educational Implications of the Characteristics

Based on their history of academic problems, students with learning disabilities may believe that they cannot learn, that the school tasks are just too difficult, or that, if they succeed at a task, it is due to luck rather than effort (Torgesen, 1988a). They typically do not understand the relationship between their effort on a task and the achievement outcomes (La Greca & Stone, 1990). The challenge for both general and special education teachers is to prevent students' self-defeating behaviors from interfering with their academic success.

Movement toward more inclusive settings for SWD is gaining strength. Over half of all students served in special education, or approximately 4.4 million U.S. students, are identified as having a specific disability (Digest of Education Statistics, 2001). Many of these children are placed in the general education classroom for the majority of the day, often with ancillary support services from special education personnel. Teachers' perceptions of the achievements of SWD, compared to that of their peers without disabilities, is of great significance. Research shows that ability and effort are the principle perceived causes of individual success or failure (Borkowski, Weyhing, & Carr, 1988). Success is seen as the result of personal competence; failure, it is widely believed, can be overcome by effort. Consequently, teachers are influenced by the degree to which they perceive the student as able to control particular events (Brophy & Good, 1986).

Educational experiences often do not address the needs of individuals with disabilities. Many students may drop out of school before graduation because the system

does not meet their needs. Even those students who complete high school are not likely to go on to college or other types of postgraduate education because they now believe that continued education has nothing to offer them (Digest of Education Statistics, 2001). The failure of schools to promote a positive understanding of disabilities among both teachers and students may result in problems that continuously affect the lives of students, thus keeping them isolated even into adulthood (Bender, 1994). Such isolation may contribute to feelings of loneliness, inadequacy and incompetence (Elbaum, 2002).

It is important to stress that students with learning disabilities can achieve their goals. Perhaps not every student will learn to read, write, and do math well. However, with appropriate instruction, far more students can succeed than in the past. Research shows that there are several avenues for SWD to achieve success. Reiff, Gerber, and Ginsberg (1997) studied the factors that increase the likelihood of success in SWD. Their research shows that students can succeed if they recognize the full extent of their specific disability and how it is manifested in real-life environments. Students with disabilities must accept the full range of strengths and challenges associated with their disability, and teachers must develop plans to help SWD attain their goals (Reiff et al., 1997).

Despite negative connotations surrounding the term “disabilities,” SWD are intelligent, have abilities to learn despite difficulties in processing information, and can succeed with solid coping skills and strategies. Graduation and meaningful participation in post-secondary employment or education are desired SWD learning outcomes. These outcomes are often unrealized because of SWD achievement deficits compared to students without disabilities. With the proper support and effective strategies, SWD can

achieve success in the general curriculum. What is taught and how it is taught in the instructional setting is critical.

According to Cawley, Hayden, Cade, and Baker-Kroczynski (2002), teachers of different disciplines can work together to enhance student performance provided they receive sufficient training to develop proficiencies and opportunities to teach the curriculum. Teachers must rely on methods that allow them to manage students' behavior in addition to their learning. A common theme among the proposals to restructure special education is to remove barriers between special and regular education programs so that SWD may access the general curriculum without being labeled or removed from their regular classrooms (McLaughlin & Warren, 1992a). Instructional effectiveness varies in classrooms for SWD making it difficult to generalize. It has been well documented that intended learning outcomes for SWD are receiving national attention because of the poor statistics reported for students exiting special education public school programs. The instructional models and the probable effects they have on special education programs for SWD are yet to be documented.

The following section of this research discusses the ISDM and their educational effectiveness. The section concludes with the need for further research in ISDM because of the achievement goals mandated for SWD in the NCLBA.

The Models of Instruction in Special Education

Public Law 94-142, which evolved into the present day Individuals with Disabilities Education Act (IDEA) of 2004, mandated that SWD have the same educational benefits as students without disabilities. This has created a nation plagued

with low-test scores within the population of SWD. Research reports that without the proper training and knowledge of instructional strategies, coupled with knowledge about SWD, teachers will fail in any instructional service delivery model. An effective instructional model requires not only materials and instructional goals but also continuous in-service education for teachers who have SWD in their classrooms (McLaughlin, Smith–Davis, & Burke, 1986). Even before a teacher implements an instructional program, he or she must first understand the nature and characteristics of SWD and the design of useful instructional models. An analysis of the instructional service delivery models will help to clarify how SWD learn and why they consistently fall behind their peers in academic and social achievement. This analysis may help create appropriate learning environments.

After more than 50 years of research in the field of special education, it is debatable whether the educational programming of SWD is effective (Paige, 2002a; Riley, 2002). A particular problem is the uncritical use of achievement tests to evaluate various educational treatments for SWD. In the general education classes, SWD are taught by traditional instructional methods. In past years, special educational classes placed greater emphasis on social and prevocational skills and less emphasis on academics. Presently the NCLBA forces the teachers of SWD to (a) use the same evaluations as students without disabilities, (b) analyze evaluation results to prescribe programs, and (c) ensure that SWD, along with their peers, pass reading assessments in grades 3, 5, and 8 for promotion to the next grade level.

Several instructional models have been used to teach SWD. Although some models are more effective than others, it is clear that there must be a basic understanding

of SWD. Many SWD are taught primarily in the regular classroom. This results in SWD meeting failure because of the inability to understand classroom materials. In addition to providing effective instruction for this wide array of SWD, educators must have the knowledge and skills to provide assessment and intervention strategies that are potent and efficient enough to be implemented in the classroom.

One of the greatest contributions of special education research has been the cumulative understanding of what intervention features work with students with learning disabilities across a wide range of academic and social domains (Gersten, Chard, & Baker, 2000). Even with these contributions, problems exist. We have seen a decade of policy making in which "scientifically based" practices are now required for students struggling academically in the NCLBA. However, bridging research and practice remains a challenge despite federal legislation. This challenge is likely to continue because requiring research-based instruction in the classroom is only part of the recipe for improvement.

Teachers, supervisors, and administrators must understand why these practices work and what a scientifically-based practice really is (Elmore, 1988). All models reviewed attempt to address the disparity between achievement of SWD and students without disabilities, offering access to information about the benefits of sound special education practice. Also described are studies that traditionally worked with SWD to improve their learning outcomes.

Support Services (SS) Instruction Model

Support service models generally are used as an accommodation model for SWD. The difference between this model and the Team/Collaborative (TC) model is the use of a

paraprofessional as a service provider in the general education classroom. Dukes and Dukes (2005) defined support services as the provision of appropriate instruction for SWD in general education classrooms. This model is more likely than the other two models to use a differentiated instructional format. This allows for responsiveness to academic diversity without singling out SWD. Academic diversity refers to the significant differences in the ability of students to acquire knowledge. Many classrooms today have a spread of academically diverse abilities ranging from 2 to 3 years.

Differentiation of instruction, or personalized instruction, causes educators to struggle with many of the traditional ways of teaching because it requires more teaching resources than just the textbook. According to Tomlinson (1999a), the nature of teaching requires knowing where we want the student to end before we start teaching and making a plan to get there. This knowledge allows teachers to assist the paraprofessional when working with the SWD. To make differentiation work in the SS model classroom, the content area teachers must develop an alternative approach to instructional planning beyond covering the text or creating activities that the students will enjoy. The lessons planned by the general education teacher should show the paraprofessional the route to take to carry forth the instructional plan.

When attempting to include SWD into the general education classroom, the receptiveness of the general education teacher is a concern. This is a concern when the paraprofessional or materials that are offered as support to the teacher are not positive. Receptiveness may become a major obstacle in the teacher's perception, regardless of the support in the area of behavior of the student with disabilities.

According to Hastings and Oakford (2003), teachers report that the students will have a negative effect on the teacher's instructional program and the general education students and that the teachers will be unable to provide for them in the general education classroom. This is an understandable fear, if the general education teachers are not supported and the special education teachers are unable to contribute effectively to the general education classroom.

Team/Collaborative (TC) Instruction Model

Special educators should learn how to work more effectively as collaborators in support of students' participation in general education classes. Although special educators have a history of working with other professionals, they have remained in classrooms of their own. The TC model dictates that special educators step outside of the classroom and function in a variety of roles working with a diverse collection of individuals. General education teachers are presumably better equipped because special education classrooms typically lack available curriculum materials, equipment, and expertise found in general education programs. Successful implementation of an inclusive program depends on the attitudes of those who will work most closely with the students involved.

In 2004 the Georgia Department of Education (GDOE) defined team teaching as an inclusive service delivery option for SWD in which one certified special education and general education teacher plan and deliver instruction and assessment for a blended group of diverse students in a shared classroom with collective resources and joint accountability. The essential element of inclusion is shared responsibility of all educators. The inclusion of SWD to access the curriculum in general education class is

fundamentally about the delivery of services in environments where they receive sufficient and systematic opportunities to engage with students without disabilities.

Uberti et al. (2003) studied the keyword method in TC classrooms with 74 general and special education students. The keyword method is a strategy to help stude4nts learn and remember relevant vocabulary. It creates a concrete, acoustically similar keyword for the unfamiliar word to be learned. According to Uberti et al. (2003), the keyword method enhances learning of both concrete and abstract vocabulary, as measured by tests of both recall and comprehension. Students in three inclusive classrooms were taught story vocabulary using three different methods. The special education teacher was interested in the possible benefits of the keyword method as applied to the entire classroom activity involving story reading and discussion.

According to the research one class consisted of 26 students including 4 students with disabilities, another class consisted of 23 students including 4 students with disabilities, and the last class consisted of 25 students with 2 students with disabilities and 2 student receiving in Student Support services (Uberti et al., 2003). The first class was given the vocabulary on a sheet of paper with the word, the definition of the word, a key word, and a picture that somehow related to the key word. The second class was given the same as the first class except for the key word. The third class was given the same as the other classes except for the keyword or the picture.

The study revealed that the keyword method was effective in increasing vocabulary learning in the inclusive models. In contrast, students provided with representational pictures or verbal definitions remembered fewer vocabulary words. The scores of students without disabilities were somewhat higher in the keyword condition

than the other two conditions. Differences were pronounced for SWD students in the latter model. In the picture condition SWD learned far less than students without disabilities, making essentially no gain (Uberti et al., 2003). The research did indicate that in the keyword condition, SWD gained substantially from performance, even outperforming slightly the mean performance of students without disabilities (Uberti et al., 2003). This implies the need for further explicit research comparing the effects of instruction in dissimilar ISDM.

According to Cawley, Hayden, and Kroczynski (2002), results of a district wide science test and final grade were planned to help close the gap between research and practice. University staff and teachers worked together in the design and implementation of a science project designed to include junior high school students with severe emotional disturbances or learning disabilities into the general education science classroom. This project compared the science achievement and behavior of SWD in general education science classes that enrolled SWD and science classes that did not enroll SWD. Although this research was not experimental it demonstrates two important factors. First, it demonstrates that teachers and project staff can work together to design and implement program modifications and evaluation of those modifications (Cawley et al., 2002). Second, it demonstrates that teachers of different disciplines can work together to enhance student performance, provided the training is of a sufficient magnitude to implement the framework of an ISDM.

The outcomes of the project indicated there were no behavioral difficulties in the form of discipline referrals reported for the SWD during the science class. Claims that SWD may adversely affect the general education students and not make academic

progress on their own are not supported by this project (Cawley et al., 2002). The purpose of the project was to assist the science teachers to better meet the needs of SWD and to provide the special education teachers with a degree of science knowledge that would enable them to provide consultation and also participate in the science classroom.

Researchers felt that teachers would be unable to maintain high expectations for all students when too many were low performers were included in the science classroom (Cawley et al., 2002). The ultimate interest was in the academic and social progress of students. Educators were urged to provide ongoing monitoring of individual student performance, to determine placements and instructional practices that meet their needs. The importance of finding the right strategies and implementing them with the right students is crucial. As students with learning disabilities move to inclusive environments, they are increasingly challenged with learning and retaining material from general education.

According to Uberti et al. (2003), educators must find strategies to help SWD learn. This can be problematic because of the many deficits students with learning disabilities possess. For example, a student with disabilities may present challenges and frustration in general education classrooms when they are poor readers, leading to a lack of opportunities for them to learn productively. Unfortunately, within the 'traditional' lesson the main reading material continuously used in inclusive models is the standard class textbook.

The TC model can be a very exciting and spontaneous way to impart information. There are several crucial ingredients for successful team teaching. Foremost is flexibility in logistical and scholarly matters. Second is a commitment to the process that requires

that each teacher attend the class. Attendance by both teachers demonstrates to the students that two potentially separate classes are one in the eyes of the teacher, and provides many opportunities for planned or impromptu interactions to illustrate the synergy between the teachers (Brenan & Witte, 2003).

According to Nolet and Tindal (1993), the belief that content area teachers best serve SWD in general classes is not sufficient. A widely held assumption is that general education teachers with a lot of subject matter background will do a more effective job than their special education colleagues or those with less background. The literature does not support this assumption. No research shows a relationship between a teacher's content preparation and student achievement (Weiss, 1988). If students are to learn content successfully, they must have appropriate instructional strategies proven to work by retraining teachers to use appropriate instructional tools. Teachers should carefully document their practices so that they will be better able to determine if research-validated practices positively influence student academic performance (Uberti et al., 2003).

Departmental/Pullout (DP) Instruction Model

Kozleski (2002) concluded that most special educator time is spent on instructional activities that do not result in improved student learning. If student learning and achievement are tied to outcomes, then the role of the departmental/pullout model must be understood. Many teachers in the DP model do not have the content background to teach the domain. Although a large percentage of special education teachers are not fully certified, the shift in accountability remains with performance outcomes on statewide tests for the students they teach. This shift is occurring at a time when students and teachers are held to higher standards. Legislation now requires that all students have

access to the general education curriculum and participate in statewide assessments (Heumann, 2000). Many special education teachers have no textbooks for SWD. As a result, teachers face the added difficulty of helping students who may lack basic academic skills learn more in depth and complex curricula without needed resources (Pugach & Wager, 2001).

Issues and Concerns in Implementing the Models of Instruction

In 1994, the Office of Special Education Programs of the US Department of Education identified the sustainability of research-based practices as a major research priority area. Only recently has special education begun to address the issue of sustainability. To date, special education research has addressed this issue in the form of self-reflective essays. Gersten, Chard, and Baker (2000) report that reflective essays are often enlightening but we must use the experiences of individual researchers and develop a deeper understanding of the many factors that enhance or discourage sustainability. Much of what we do know comes from studies conducted in the 1980s, when the Federal government expended considerable resources researching new approaches to incorporate into daily classrooms practices (Gersten et al., 2000). The culminating theme throughout the literature is that all students must receive appropriate instruction by first looking at the needs of SWD within the framework, which evaluates the academic, physical, and interpersonal environments' impact on learning (Strosnider, Lyon, & Gartland, 1997).

Accommodations change the way instruction is presented, assessments are administered, and/or how a student responds to instruction or assessment activities. Modified lessons change what the student is expected to learn and demonstrate, or

significantly alter the level or complexity of the performance standard. The student may require changes in the physical environment so they can access the curriculum. The literature showed little about changes in the instructional environment. The interpersonal environment may need changing so that there is a positive effect on the relationships within the classroom community. For example, for a student who has difficulty in attention, breaking up time periods may result in a change in the academic environment in terms of length of assignment, the physical environment in terms of allowing the student to move around, and the interpersonal environment in terms of providing the student in a self-monitoring program with a goal of increasing time spent working on a project (Strosnider, Lyon, & Gartland, 1997). All of these ISDM environments have the common theme of directing the instructional focus. Difficulties experienced in any of these three models will produce achievement problems and may affect the classroom as a whole.

Tomlinson (1999b) states that a teacher who recognizes students' needs, abilities, and talents can offer different routes to the content with a variety of activities and assignments. Assignments move from a "one size fits all" to a "menu" approach for ways the students can demonstrate mastery. Teachers tend to say that they will implement strategies but are sometimes discouraged when there appears to be little or no progress. This lack of strategy implementation prevents some students from benefiting from methods used to close gaps in achievement. Closing the gap occurs when students with disabilities meet the set level of proficiency. Partial implementation of certain methods and procedures can also lead to other problems. While the intent to educate students in an inclusive environment is commendable, the success of inclusion has historically been the

burden of the student with the disability. If the student's performance in the general education classroom did not meet expectations, the student with disabilities returned to the DP model or a self-contained special education classroom. The NCLBA, of course, does not allow the removal of students from the general education classroom.

The SWD may bring interpersonal and behavioral issues to the classroom. Teachers must broaden their vision to successfully implement the instructional interventions chosen. Pettig (2000) sums these up by stating that if the journey of classroom instruction were a simple well-marked route, everyone would be there by now.

Summary of the Review of the Literature

Thirty years after the Education for the Handicapped Act of 1975, learning outcomes for special education students continue to receive attention from the media, politicians, state and local school authorities, and parents. Debate has arisen around the issues of how to improve special education services and how to improve outcomes for special education students. As the pendulum of education swings again, the literature helps explain the achievement plight of today's SWD. The quality of instruction, not the placement of the student with disabilities, is the main predictor of student achievement. Little research on relationships between specific instructional practices and student achievement gain has been conducted in special settings established for student instruction. The same is true for research in special educational settings established for the instruction of students with mild disabilities. With the exception of a modest number of studies on specific learning disabilities, research has turned up very little evidence indicating different forms of instruction for students who differ in aptitude, achievement

level, socioeconomic status, ethnicity, or learning style in the three ISDM. The programs and practices that have achieved the most success with these students have been based on research on what constitutes effective instruction for students in general rather than based on research on the deficiencies or special needs of students.

With a few exceptions, research findings suggest the same patterns between instructional practices and student achievement gains as did studies conducted in regular classroom settings including SWD and special education classroom settings. The needs of SWD may seem overwhelming to educators, but the requirements of the general education classroom and curriculum appear overwhelming to the student with the disability (Strosnider, Lyon, & Gartland, 1997). Research that compares the ISDM of SWD is meager. A true measure of the effectiveness of instruction for SWD remains elusive because of the meager research and because of the many ways students learn and acquire knowledge and skills outside of the classroom setting.

Although these findings may limit replication of the studies, they give teachers some guidance in addressing what the student should be able to do after a year of instruction. The literature indicates the need to further explore instructional models that will allow SWD to access the curriculum. Access to the curriculum can improve the learning outcomes for SWD and close the gap in achievement between them and their peers without disabilities.

III. METHODOLOGY

This chapter provides a blueprint of the research methodology used for evaluating learning outcomes measured by the Georgia Criterion Referenced Competency Test (CRCT) for SWD. It discusses the procedures for sample selection and data collection, and presents a description of the independent variables and dependent measures. The underlying principles for each instructional delivery model and the CRCT is defined and described. The chapter concludes with a list of the null hypotheses and methods of analysis.

Research Design and Method

This study compared the effects of three highly dissimilar instructional delivery models on the learning outcomes of SWD. The study identified the differences in learning outcomes of students from one year to the next and the interaction that the years had on learning outcomes in the delivery model placement. This study responded to the importance of the promotion criterion placed on performance on the CRCT. The significance of the CRCT in Georgia motivated the need to look at instructional delivery models for SWD. The CRCT is used as a promotion or retention gateway for students in the state.

The Carroll County School System does not regard a student's gender, race, or IQ as the determining factors to placement in an instructional model. All students' schedules are constructed under the advisement of counselors, teachers, and parents. Students with disabilities have an Individualized Educational Plan (IEP) that may also become part of the scheduling process.

The participants in this study were 110 randomly scheduled students with disabilities who received instruction in one of three instructional delivery models. The students were assigned by the classes they needed and the segments of instruction that was delineated on their IEP. Instructional delivery models describe how instruction is delivered to students who receive special education. The delivery models were (a) support services (SS), (b) team/collaborative (TC) and (c) departmental/pullout (DP). The SS model provided students specially designed instruction or supplemental aids or services in the general classroom. The SS provided were from personnel such as paraprofessionals, interpreters for the deaf and hard of hearing, and other assistive personnel. The TC model had a special education teacher working with the identified student and the general education teacher within the general education classroom. The DP model is designed for academic instruction for students solely by the special education teacher. The academic instruction as specified by the student's IEP is provided by a variety of special education-certified teachers.

All of the delivery models had equal access to the general curriculum and to general curriculum materials. To control for teacher bias and differences in professional experience, students in the three models were chosen across six middle schools that used

the same curriculum. There were two independent variables ISDM and time. There was one dependent variable which was performance scores on the CRCT.

To determine that IQ of students had no bearing on their placement in the three delivery models a one-way ANOVA was performed. Cross tabulations and a chi-square test for gender and ethnicity helped ensure that these two factors had no impact on placement in an instructional model. A mixed model ANOVA was performed to capture overall effects, interaction effects, and change over time effects.

An analysis of the data included a comparison between test scores and delivery model placement to determine effects of the delivery model on achievement. An analysis was performed to determine if time changes the outcome on the CRCT for the students. It was expected that those students in the general classroom taught in the TC model would have more access to the general curriculum and therefore might perform better than the other groups on the CRCT.

Sample Selection

Teachers cannot hand-pick their students, nor can schools select the students who walk in their doors. It is hard to determine whether specific methods affected a group of students, even when they are randomly selected. This also brings up an ethics issue of determining who receives the strategies. Practitioners might learn what methods work, and could thus reduce the feeling by teachers that the students are being “dumped” in the general education classroom and curriculum without effective strategies.

The participants in this study were 110 eighth-grade Carroll County school system students, identified according to the federal and state regulations for eligibility in programs that serve students with learning or behavior disabilities attending the Carroll

County school system. The students were chosen across six middle schools. This sample was chosen out of close to 1,504 students with disabilities. There were close to 290 middle school students with disabilities. This sample of middle school students was chosen because this was the first group of eighth graders to participate in the promotion or retention criteria set by the state according to their performance on the CRCT. The participants had at least 2 years of CRCT data beginning in 2004. The numbers of participants in each group were determined from their instructional schedule from one of the three models. Descriptive statistics for the students in each instructional group were obtained from their special education records. Specific information regarding students' testing information was obtained from TestTrax and data from Riverside Publishing Company.

Intervention

Each participant was chosen from one of three treatment groups while participating in the general education curriculum in the areas of reading, language arts, and math. During each year, students were taught from Georgia's quality core curriculum (QCC). In the spring of each year, the participants were given the CRCT in the three content areas.

Instrumentation

The CRCT is intended to test Georgia's performance on the content standards outlined in the QCC. This assessment yields information on academic achievement at the student level. This information diagnoses individual student's strengths and weaknesses related to the instruction of the QCC and evaluates the quality of education throughout Georgia (GDOE, 2000). Criterion referenced tests such as the CRCT are designed to

measure how well students acquire the knowledge and skills set forth in a specific curriculum or unit of instruction.

Assumptions

Several assumptions are made in this study. First, it is assumed that the participants would respond to the testing instrument. Second, it is assumed that the participants are not different from each other in regard to placement in the models by race, gender and IQ. Third, it is assumed that the CRCT contained grade level appropriate curriculum material.

Procedures

To gain access to participants' testing information, the Superintendent of Carroll County Schools granted permission for the study (see Appendix A). The participants' testing data came from a data disk provided by the school system from Riverside Publishing Company. The Carroll County School system has a contract for services with this company. Carroll County's department of Exceptional Children's Services (ECS) provided the participants' special education demographic information.

Control for Extraneous Variables

This study was retrospective in nature and was designed to compare the effects of three dissimilar instructional models for SWD and their performance on the CRCT. Several controls were implemented to ensure that extraneous variables did not influence the outcomes of the dependent measure. Persons responsible for administering the dependent measure had proctors during the test to ensure standard implementation of the assessment. State guidelines for administering the CRCT in the content areas are scripted for persons administering the test.

Teacher Training

The school district invested in a series of workshops based on the Learning Focused Schools concept developed by Drs. Max and Julia Thompson. Learning focus is a reform model designed to assist schools in using exemplary practices to increase learning and achievement. It is a framework that provides tools for organizing, planning, assessing the curriculum and instruction. Each teacher in the school district was provided ongoing training for three years along with a Learning Focused Strategies Notebook as a resource for designing and implementing exemplary practices in the classroom. The paraprofessionals in the support services instructional model were not included in this training although they served as a support to the special education student in accessing the general education curriculum. Teachers in the team/collaborative model and the departmental/pullout model were included n the training.

Independent Variables

The independent variables for this study were the ISDM used to access the general curriculum and time in the ISDM. Treatment groups differed by placement in one of the three instructional delivery models. Two content areas had 2 years of data (reading and ELA) and one content area (math) had 3 years of data.

Underlying Principles for SS Model

Support Services are those services provided for students whose IEP specifies specially designed instruction or supplemental aids or services in the general education classroom. The services provided must be from personnel such as paraprofessionals, interpreters, and other assistive personnel.

Underlying Principle for the TC Model

The TC model included the special education teacher working with the identified student and the general education teacher within the general education classroom setting.

Underlying Principles for DP Model

The DP model was designed for academic instruction for a student with a disability as specified by the student's IEP. Instruction was provided by a variety of special education teachers certified in the student's primary area of disability in the special education classroom.

Dependent Variables

The only dependent variable for this study was student performance on the CRCT. The participants' performance was repeatedly measured for 3 years in math and 2 years in reading and in ELA. The CRCT was administered each spring to assess the content knowledge described in the QCC to the students. This test was administered to SWD as well as their peers without disabilities.

Underlying Principles for the CRCT

The CRCT was designed and implemented in spring 2000 as a mandatory state assessment aligned with the state's curriculum. It is designed to measure how well students acquire the skills and knowledge described in a specific curriculum or unit of instruction. The CRCT, therefore, is specifically intended to test Georgia's performance on the content standards outlined in the QCC. The assessments yield information on academic achievement at the student, class, school, system, and state levels. This information diagnoses individual student strengths and a weakness related to the QCC

and evaluates the quality of education throughout Georgia (GDOE, 2000). Law requires educators to teach the content standards set forth in the state-adopted curriculum.

The standard score to meet proficiency is 300. Proficiency is relative to how well students in the state had knowledge of the curriculum's content domains. The standard scores set by the state for proficiency are presented in three levels. Level 1 includes scores below 300. These students do not meet expectations. Level 2 includes scores at or above 300 but below 350. These students meet expectations. Level 3 includes scores at or above 350. These students exceed expectations. The expectations represent mastery of the state's curriculum.

The CRCT content descriptions provide the content, scope, and sequence of the CRCT. The content standards set forth in the QCC offer broad descriptions of the knowledge and skill students are expected to acquire in each content area. To provide reliable measures as well as structure to the assessment program, the content standards outlined in the QCC were grouped into content domains. Each domain is comprised of standards with similar content characteristics

To create the CRCT four domains were identified and created for Reading: (a) Reading for Vocabulary Improvement, (b) Reading for Locating and Recalling Information, (c) Reading for Meaning, and (d) Reading for Critical Analysis. Four domains were identified and created for English/Language Arts: (a) Sentence Construction and Revision, (b) Paragraph Content and Organization, (c) Grammar and Mechanics, and (d) Research Process. Six domains were identified and created for Mathematics: (a) Number Sense and Numeration, (b) Geometry and Measurement, (c)

Patterns and Relationships/ Algebra, (d) Statistics and Probability, (e) Computation and Estimation, and f) Problem Solving.

Table 3 provides the number of items in each domain for the CRCT Spring 2005. One hundred fifty items are included in the test. Mathematics has the most number of items. The additional questions on the mathematics imply that the math items may not weigh individually as much as the other content areas. The number of items on the mathematics may also suggest, from the test results, that students are tired when they must answer more questions as compared to the other domains on the mandated state assessment.

Table 3

Number of Items on the CRCT by Domain

Reading Number of Items 40				ELA Number of Items 50				Mathematics Number of Items 60					
RVI	RLRI	RM	RCA	SCR	PCO	GM	RP	NSN	GMT	PRA	SP	CE	PS
8	8	10	14	15	10	15	10	13	10	7	6	12	12

*Note*s. RVI Reading for Vocabulary Improvement, RLRI = Reading for Locating and Recalling Information, RM = Reading for Meaning, RCA = Reading for Critical Analysis SCR = Sentence Construction and Revision, PCO = Paragraph Content and Organization, GM = Grammar and Mechanics, RP = Research Process, NSN = Number Sense and Numeration, GMT = Geometry and Measurement, PRA = Patterns and Relationships/ Algebra, SP= Statistics and Probability, CE = Computation and Estimation, PS = Problem Solving

Data Collection

The CRCT Item Banking System houses a large repository of test items. The CRCT content descriptions provide detailed information about the content assessed by the CRCT. Organized by grade, a description of each content domain is provided followed by examples of the things students are expected to know (CRCT, 2006). Currently, the mandated end-of-the-year assessment contains selected response items, only. The contractor, Riverside Publishing, provides paper and electronic disaggregated reports at the state, system and school levels. These reports provide student performance information.

Data Analysis

Data were first examined to determine whether there were any significant differences because of IQs between the sample means of the models; this determination was made by using a one-way analysis of variance (ANOVA). Since there were three instructional models, the one-way ANOVA was performed with IQ as the dependent variable (DV) and the instructional model as the independent variable (IV). An alpha of .05 significance was used. All data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 14, a software system for data management and analysis.

Scoring the Data

The contractor, Riverside Publishing, a Houghton Mifflin Company, provided Carroll County Schools with paper and electronic disaggregated reports at the state, system, and school levels. These reports provide student performance information for the

following categories: All Students, All General Education Program Students, All Special Education Students, Gender, and Race/Ethnicity.

Null Hypotheses

The null hypotheses for this study include the three levels of the independent variable and the two and three levels of the dependent variable over repeated measures of time. The delivery instructional models serve as the independent variable and performance on the CRCT in reading, language arts, and math will serve as the dependent variable in the mixed model ANOVA.

Null H1: There are no significant differences in performance outcomes of SWD on the CRCT in the three dissimilar instructional service delivery models.

Null H2: There are no significant differences in performance outcomes of SWD over time (2 years, 3 years) on the CRCT.

Null H3: There are no significant differences in performance outcomes of SWD over time and in the three dissimilar instructional service delivery models on the CRCT.

Summary

This chapter presented the research methodology used in this study. It also included the procedures of the sample selection and procedures for data collection. It described the independent variables and dependent measures. It also provided a descriptive rationale for each instructional model was stated. Finally, it presented the method of data analysis and a list of the null hypotheses.

IV. FINDINGS

The test of our progress is not whether we add more to the abundance of those who have much. It's whether we provide enough for those who have little.

— Franklin Delano Roosevelt

Restatement of the Purpose of the Study

The purpose of this study was to determine to what extent instructional service delivery models affect the learning outcomes of SWD (SWD) as measured by the CRCT. One of the primary goals of this study was to determine if a particular service model had out-performed the others in increasing learning outcomes. This study brought insight into the placements of SWD in the ISDM and the ability to access the general curriculum.

Restatement of the Procedures

The researched used descriptive and statistical methods to analyze data to determine the extent to which the three instructional service delivery models affected learning outcomes of SWD. Participants were 110 eighth graders who had been administered the CRCT for two to three years, consecutively.

The current chapter presents the results of the data analysis of the learning outcomes for the three instructional service delivery models. Initially, the sample is

described in terms of demographic variables. Then, the three research questions are addressed using the analysis methods described in Chapter Three.

Sample Description

Table 4 contains a description of the participants in terms of gender and ethnicity. The sample was predominately male (69%) and Caucasian (74%). A chi-square resulted in a value of 2.524 for gender and a .682 for ethnicity, demonstrating that there was no relationship between gender and ethnicity by model.

Table 4

Sample Description

	Overall	SS	TC	DP	Chi-Square
Gender	110	N (%)	N (%)	N (%)	2.524[a]
Male	76 (69.1%)	22 (59.5%)	28 (75.7%)	26 (72.2%)	
Female	34 (30.9%)	15 (40.5%)	9 (24.3%)	10 (27.8%)	
Ethnicity		N (%)	N (%)	N (%)	.682[b]
Caucasian	81 (74%)	29 (78.4%)	26(70.3)	26 (72.2%)	
African-American	29 (26%)	8 (21.6%)	11(29.7)	10 (27.8%)	

Note: SS = Support Services, TC = Team/collaborative, DP = Departmental/pullout, $p > .05$.

[a.] The Asymptotic significance is .283 whereas, $p > .05$.

[b] The Asymptotic significance is .711 whereas $p > .05$.

Participants had not been placed in any of the three instructional service delivery models by their IQ scores as shown by a one-way analysis variance (ANOVA). Table 5 shows a comparison by model and distribution of IQ scores. An F ratio of 1.867 with a p = .160 showed no significant differences between IQ and placement in models. These results indicate differences among the three groups are likely due to chance.

Table 5

Comparison by Model and Distribution of IQ Means

Model	N	Mean	SD	F	Probability
SS	37	85.57	15.637	1.867	.160
TC	37	87.92	15.948		
DP	36	81.39	11.792		
Overall	110	84.9%	14.72%		

Note: SS = Support Services, TC = Team/collaborative, DP = Departmental/pullout

The next two sections discuss each research question and the statistical analyses performed ending with a summary of the findings. Table 6 summarizes the results from the Mixed Model ANOVA including between (Model), within (Time) groups and the interaction (Model By Time) effects. Reported are the results of the statistical tests used to examine the research questions and the hypotheses.

Table 6

Performance in Reading, ELA, and Math Between the Models and the Mixed Model ANOVA Between (Model), Within (Time) Groups and Interaction (Model By Time)

	Between Groups (Model)		Within Groups (Time)		Model by Time Interaction	
CRCT Scores	*F*	*Prob.*	*F*	*Prob.*	*F*	*Prob.*
Reading	.438	.647	11.052	.001	.703	.497
ELA	.214	.808	42.904	.001	.029	.972
Math	1.484	.231	17.853	.001	.364	.834

Research Question 1

The first research question of the current study was: Is there a difference in performance outcome of SWD on the CRCT in the three dissimilar models of instruction? The models' effect in Table 6 shows the three *F* ratios for reading F (.438), p = .647, ELA F (.214), p =. 808, and math F (1.484), p = .231. Each of these ratios failed to reach statistical significance. However, the data show students in the SS group consistently performed better than the other two models.

Research Question 2

The second research question was: Is there a difference in performance outcomes of SWD on the CRCT over time? This question was addressed by comparing the 2 years of performance outcomes for reading and ELA and the 3 years of performance outcomes

for math. The within groups results from Table 6 show a reading F (11.052), p = 001, ELA F (42.904), p = .001, Math F(17.853) and p = .001 . The probability of .001 indicates that there is a statistical difference over time for SWD. Time appears to be the one factor that makes a difference in the performance of SWD.

Overall, Tables 7, 9, and 8 respectively show that the largest net changes over a 2 year time period for all groups occurred in ELA (+12.10 points), math (+11.35) and in reading (+10.79), respectively. The net changes in math over the three-year period began a marked decline for all groups in the 05-06 year (-5.02). This decline in math performance may be attributed to the school system's efforts in providing professional learning (PL) opportunities for reading and ELA.

Research Question 3

The third research question was: Is there a significant difference in the performance outcomes of SWD on CRCT scores over time in the three models? Table 6 summarizes the results from the Mixed Model ANOVA including the interaction (Model by Time) effects. Overall, students in each of the three instructional models improved over time. These changes, however, were not dependent upon which instructional model was used. There were no statistical significant interaction effects in that each group changed in a comparable manner.

Tables 7, 8, and 9 present the mean scores on the three instructional models in reading (R), English/language Arts (ELA), and math (M) respectively. In each table, the change in mean score performance is included which helps to validate the previous data included in the responses to each research question.

Table 7

Mean Performance Scores in Reading Performance by Model on the CRCT

Groups	Year				Change
	04		05		
	Mean	(SD)	Mean	(SD)	From 04-05
SS	288.65	35.976	296.00	27.843	+ 7.35
TC	280.68	32.095	296.78	25.512	+16.10
DP	282.53	33.692	291.36	24.705	+ 8.83
All Groups	283.96	33.823	294.75	25.937	+10.79

Note: SS = Support Services, TC = Team/collaborative, DP = Departmental/pullout

Table 7 shows the total change for mean performance scores in reading. Overall, reading performance increased by almost eleven points. The TC model had the greatest change with an increase of 16.10 points in performance. This large increase in could be attributed to the school system's efforts in providing professional learning (PL) opportunities for in team collaboration. The least change occurred in the SS model. An interesting observation is that although each group improved within the model, no groups reached proficiency, a mean score of 300 or more. Although the mean performances are close to proficiency, the school system changed the curriculum from the Quality Core Curriculum to the Georgia Performance Standards for the 05-06 school years. Hence, only two years of data was used to compare performance outcomes.

Table 8 provides the mean performance scores in ELA. In Table 8, the change was highest for the SS model and least for the DP model. All groups showed progress but no groups showed proficient mean score performance. GPS standards were put in place for the 05-06 year for the area of ELA replacing the QCC.

Table 8

Mean Performance Scores in English/Language Arts by Model on the CRCT

Model	Year				Change over time
	04		05		
	Mean	(SD)	Mean	(SD)	From 04-05
SS	276.14	20.785	288.70	20.846	+12.56
TC	274.05	18.303	286.27	15.095	+12.22
DP	274.56	21.491	286.06	18.001	+11.50
All Groups	274.92	20.061	287.02	18.008	+12.10

Note: SS = Support Services, TC = Team/collaborative, DP = Departmental/pullout

Table 9 shows the means on the math CRCT by model for three consecutive years. The results of the analysis show an increase from 04-05 but a decrease from 05-06. Over the three year period, increase in performances ranged from 3.95 to 8.06 with an average increase of 6.33 points. For all three content areas, a smaller net change (over 3 years) occurred in Math which may help support the effect of the school system's training efforts in the reading and ELA content areas.

Table 9

Mean Performance Scores in Math by Model on the CRCT

Model	Year						COT 04-05	COT 05-06	COT 04-06
	2004		2005		2006				
	Mean	(SD)	Mean	(SD)	Mean	SD			
SS	281.89	27.410	290.24	20.342	285.84	21.294	+8.35	-4.40	+3.95
TC	272.51	25.755	285.46	13.731	280.57	19.026	+12.95	-4.89	+8.06
DP	272.83	25.247	285.61	16.199	279.83	25.187	+12.78	-5.78	+7.06
All	275.77	26.288	287.12	16.976	282.10	21.914	+11.35	-5.02	+6.33

Note. SS = Support Services, TC = Team/collaborative, DP = Departmental/pullout, COT = Change over Time

In addition to examining each year's performance, it can be concluded that there was an event that may relate to a drop in the performance scores for the sample during the 2005–2006 year. It has been mentioned that the QCC standards changed to GPS for reading and ELA. Focus in the school system was on training teachers to teach the standards to students in this area and taken off of the math curriculum's QCC as standards for math would change to GPS the 06-07 school year.

Summary of Findings

The first research null hypothesis of the current study was: There is no significant difference in performance outcomes of SWD on the CRCT between the three dissimilar

instructional delivery models. The hypothesis is not rejected because the analysis revealed no significant differences.

The second research null hypothesis was: There is no significant difference in the performance outcomes of SWD on the CRCT over time. The results of the analysis show that there is a significant difference over the span of time for student with disabilities. Therefore, the null hypothesis must be rejected.

The third research null hypothesis was: There is no significant difference in performance outcomes of SWD on the CRCT over time and instructional service delivery model. Results for the interaction of time and model indicated that the hypothesis is not rejected because the analysis revealed no significant differences.

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The reward of esteem, respect, and gratitude is due to those who devote their time and efforts to render the youths of every successive age fit governs for the next.

— Thomas Jefferson

Purpose of the Study

The purpose of this study was to answer questions concerning the performance outcomes of SWD on the CRCT. The CRCT is a test designed to evaluate the attainment of the general curriculum. There were 110 eighth grade SWD included in the sample. The sample's performance in reading, ELA, and math were scrutinized for students in three dissimilar service delivery models of instruction. The reported performance outcomes were analyzed to determine if they were consistent with the state's level of proficiency, which is a score of 300. Data regarding the IQ, gender, and ethnicity were also reported.

Numerous studies and articles have examined many aspects of performance outcomes for SWD and the importance of having access to the general curriculum. A comprehensive review of the literature included the following topics: characteristics of SWD, the need for evaluating instructional service delivery models for SWD, accountability for special education programs because of No Child Left Behind, and assessing the attainment of the general curriculum for SWD. The review of literature revealed interesting as well as conflicting information regarding the role of special

education programs. The curriculum may vary as much as the eligibility criteria for SWD as these students are known to move back and forth within a school year among neighboring states. Another contributing factor is that administrators often do not schedule the students to have appropriate access to the general curriculum. The very criteria that enables a student to become eligible for a specialized instruction causes a school system to possibly not make AYP. Having special education students participate in a statewide testing program may defeat them and cause an increase in students dropping out and not completing school.

A clear and consistent answer to this dilemma is not only difficult, but also often harder to explain to parents when their student is retained due to the conflicting messages that special education is now sending. Students in special education are receiving special education services because they are not performing as well as their general education peers without disabilities, yet they are held to the same level of expectancy for achievement. Special education has existed for many years without the accountability component. Special education programs around the nation are required to hold the same performance standards for students in special education that are held for their peers who are not in special education. Only a small percentage of students are exempt from the state's assessment but these students are required to perform on their own alternative assessment program (Coll & Freeman, 1997). While the qualifications of the special educator have constantly been questioned, since the highly qualified status in NCLB has been enforced, parents are questioning the years their student has received special education services in the DP instructional model. This raises concern as school systems must place students with deficits in reading, ELA, and math in general education

classrooms with general education teachers who are highly qualified in the content which they teach. Unless the special educator is highly qualified in content areas, they are no longer allowed to teach content classes for SWD.

According to the research, there are two major causes for low performance on the CRCT. The first cause is that not everyone has the same expectations for SWD, even when they do they do there is often disagreement on the specifics of what these students should learn. The second cause is due to student's academic and behavioral needs. The needs play a significant role in the special educator making sure those students are able to access the general education curriculum.

The literature review indicates that teachers who are teaching SWD, whatever the instructional delivery model, are often confused by the lack of clarification regarding their roles. Many duties and responsibilities that the TC teachers must perform are not in alignment with colleges' and universities' teacher preparation programs. Teachers who work with a strong background and knowledge about the structure of teaching strategies, such as scaffolding and differentiation, are empowered to be strong instructors for the SWD that they serve (Thompson, 2005). They also have the data to support the students' need for special education programs and services, which may serve as a deterrent for the assignment of the student to general education classrooms without support.

This model helps to ensure that all school counselors, teachers, and paraprofessionals are consistent as they work with students. Results help to illustrate that a student has not only mastered a skill, but that mastery has made a difference in the student's life emotionally, academically, and socially. Demonstrating that the goals set by NCLB, specifically for SWD, can help all students succeed academically is a daunting

task, but one that must be performed (Paige, 2005). Educators must take the available data and resources and use them more effectively.

Discussion of the Findings

In order to explore the results of instructional service delivery models on performance outcomes for SWD as measured by the CRCT, several research questions were developed for the current study. The first research question of the current study was: Is there a significant difference in performance outcomes of SWD on the CRCT in three dissimilar instructional delivery models? The results of the analysis found no significant differences in performance outcomes of SWD on the CRCT in the three dissimilar instructional delivery models.

The second research question was: Is there a difference in performance outcomes of SWD on the CRCT over time? The results of the analysis did show a significant difference in performance outcomes of SWD on the CRCT over time, but the changes were not dependent upon which model was used.

The third research question was: Is there a significant difference in the performance outcomes of SWD on the CRCT over time and in the three instructional service delivery models? The results of the data analysis found no significant differences in performance outcomes of SWD on the CRCT in the interaction effects of time and instructional service delivery model.

The results of the study suggest that time is an important factor in student performance. As students continue to participate in statewide testing and have greater

access to the general curriculum they will move toward increasing their achievement scores and decrease the gap between themselves and their peers without disabilities.

As Georgia evaluated its curriculum an emphasis was placed on reading, English, and Language Arts. These curriculum domains were rewritten into the Georgia Performance Standards and are scored differently on the CRCT. The difference in the scoring was the reason why only two years of data was available for this sample of students. The emphasis on these content domains may also be the reason the drop in math scores occurred. As teachers took the focus off of math students did not do as well across the state on the CRCT. It will be interesting to see the math scores for SWD as the mathematics domain of the CRCT will soon undergo the change to the GPS.

Implications

Several implications emerged because of this study. The implications for benefits of the general population of SWD are profound. The premise of the NCLB Act of 2001 will shine through with this study's ability to determine any differences in achievement. The conclusions of this study will allow the school system to analyze the results of this specialized population and possibly set up some experimental designs to further validate the results of this study.

This study shows significant differences in performance scores between and among students across time irrespective of the three different instructional models. This study is a beginning of research concerning instructional placements for this population of students. This research may also help begin further studies in the way students are accessing the general curriculum to meet the standard level of proficiency set by the state.

It could also lead to an improvement of these students' learning outcomes by helping with decreasing SWD from dropping out of school because of lack of academic achievement.

The information gathered from the review of literature, the study, and professional experience suggests that the following are necessary:

1. Train administrators and teachers in the appropriate and inappropriate uses of instructional service delivery models as defined by the Georgia Department of Education, Division for Exceptional Students.
2. Implement professional development, assistance, and training for educators with an emphasis on instructional service delivery models.
3. Implement appropriate training for educators in the area of assessment, evaluation, and data driven decision-making.

Recommendations

Conducting further research on these service delivery models is of great importance to assist SWD in accessing the general education curriculum. Listed below are suggested recommendations.

1. Replicate the study in schools that use service delivery models as a means for students to access the general curriculum.
2. Further, target appropriate/inappropriate activities that may affect achievement.
3. Further, research the differences in preferred strategies and activities within the models that may affect student performance.

4. Implement professional development that addresses effective teaching and learning in different instructional environments and the role the instructor plays in student achievement.
5. Educators must also collect and share data with administrators, school board representatives, parents, and students demonstrating the effectiveness of their teaching program.
6. There must be specific documentation of time spent in the specific domain areas of instructional delivery models.
7. Educators should understand the importance of evaluating interventions and determining the impact on student learning and achievement.

The need for conducting further research on this topic further demonstrates the effectiveness and importance of appropriate special education instructional programs. While the past has much to offer us about how this issue should be addressed, the future of special education is accountability. It is not enough to say that a teacher can make a difference; we must demonstrate, document, and show others that accessing the general education curriculum with a qualified teacher is the difference. Accountability requires that schools demonstrate that their efforts yield expected results. Instruction in an instructional service delivery model is not enough to demonstrate that a special education delivery model is effective; the link must be made between the ability to access the curriculum and academic outcomes (Paige, 2002). While special education programs may make a difference, they must now provide documentation through program evaluation in order to solidify the need for special education program funding.

In conclusion, special education program effectiveness has always been difficult to define and even more difficult to measure. In this era of increased accountability and efficiency of programming we must have a better picture of the status of program services. These issues of instructional service delivery should be further investigated and addressed before teachers are expected to make the kind of changes that will improve student outcomes (2006).

REFERENCES

Baker, J. M., & Zigmond, N. (1995). The meaning and practice of inclusion for students with learning disabilities: Themes and implications from the five cases. *The Journal of Special Education, 29,* 163–80.

Bender, W. N. (1994). Social-emotional development: The task and the challenge. *Learning Disability Quarterly, 17*(4), 250–252.

Blachman, B. (1988). The futile search for a theory of learning disabilities: Who are such children? *Journal of Learning Disabilities, 21*(5), 286–288.

Borkowski, J. G., Weyhing, R. S., & Carr, M. (1988). Effects of attributional retraining on strategy-based reading comprehension in learning disabled students. *Journal of Educational Psychology, 80*(1), 46–53.

Brenan, C., & Witte, R. (2003). Team teaching in the secondary instrumental music classroom. *Music Educators Journal, 89*(3), 31–36.

Brophy, J. E., & Good, T. L. (1986). Teacher behavior and student achievement. In M. Wittrock (Ed.) *Third handbook of research on teaching* (pp. 328–375). New York: Macmillan.

Brown, A. L., & Palincsar, A. S. (1982). Inducing strategic learning from texts by means of informed self-control training. *Topics in Learning and Learning Disabilities, 2,* 1–17.

Carnine, D., Gersten, R., Darch, C., & Eaves, R. (1985). Attention and cognitive deficits in learning disabled students. *Journal of Special Education, 19*(3), 319-331.

Carroll County Schools Continuous Improvement Monitoring Plan. (2005). Georgia Department of Education, Atlanta, GA.

Cawley, J., Hayden, S., Cade, E., & Baker-Kroczynski, S. (2002). Including students with disabilities into the general education science classroom. *Exceptional Children, 68*(4), 423–435.

Chan, L. K. S. (1991). Promoting strategy generalization through self-instructional training in students with reading disabilities. *Journal of Learning Disabilities, 24*(7), 427–433.

Chard, D. J., Vaughn, S., & Tyler, B. (2002). A synthesis of research on effective interventions for building reading fluency with elementary students with learning disabilities. *Journal of Learning Disabilities, 35*(5), 386–406.

Darch, C., Carnine, D., & Gersten, R. (1984). Explicit instruction in mathematics problem solving, *Journal of Educational Research, 77*(6), 351–360.

Deluca, C. (1997). *The effects of thematic-based hands-on teaching versus a textbook approach for students with disabilities*. Unpublished doctoral dissertation, State University of New York at Buffalo.

Digest of Education Statistics. (2001). In. D. Snyder and C. Hoffman (Eds.), *The national center for education statistics, 2002.* Washington, DC: U.S. Department of Education Office of Educational Research and Improvement, NCES 2002-130.

Duke, P., & Duke, C. (2005). Consider the role and responsibilities of the inclusion support teacher. *Intervention in School and Clinic, 41*(1), 55–61.

Education of All Handicapped Children Act of 1975, 34 CFR 300 (1990).

Elbaum, B. (2002). The self-concept of students with learning disabilities: A meta-analysis of comparison across different placements. *Learning Disabilities Research and Practice, 17*(4), 216–226.

Eleventh Annual Report to Congress on the Implementation of the Education of the Handicapped Act. (1989). Washington, DC: U.S. Department of Education.

Elmore, R. (1988). *Contested terrain: The next generation of education reform*. Paper prepared for Commission on Public School Administration and Leadership, Association of California School Administrators.

Georgia Department of Education (2004). Division for Exceptional Students: State Regulations and Guidelines. Atlanta, GA.

Georgia Department of Education (2000). The Governor's Office of Student Achievement, Annual Education Accountability Report Cards.

Gersten, R., Chard, D., & Baker, S. (2000). Factors enhancing sustained use of research-based instructional practices. *Journal of Learning Disabilities, 33*(5), 445–458.

Gysbers, N. C. (2004). Comprehensive guidance and counseling programs: The evolution of accountability. *Professional School Counseling, 8*(1), 1–14.

Gysbers, N. C. (2005). Closing the implementation gap. *School Counselor*, 43(2), 36–41.

Hastings, R., & Oakford, S. (2003). Student teachers' attitudes towards the inclusion of children with special needs. *Educational Psychology, 23*(1), 87–94.

Hehir, T., Stariha, W., & Walberg, H. (1991). Promoting least restrictive environment in Chicago. Unpublished manuscript. Thomas Hehir, Associate Superintendent,

Department of Special Education and Pupil Support Services, Chicago Public Schools, 1819 W. Pershing Rd., Chicago, IL 60609.

Holahan, G., & Deluca, C. (1993). Classrooms science interventions via a thematic-approach. Unpublished research paper, State University of New York at Buffalo.

Heumann, J. E. (2000). *Questions and answers about provisions of the Individuals with Disabilities Education Act Amendments of 1997 related to students with disabilities and statewide and district wide assessments*. Washington, DC: Office of Special Education Programs, U.S. Department of Education.

Jehlen, A., & Winans, D. (2005). No child left behind myth or truth: An educator's guide to some of the things people know about the federal law that just aren't so. *NEA Today*, May, 32–33.

Johnson, D., & Blalock, J. W. (1990). *Adults with learning disabilities*. New York: Grune and Stratton.

Kafer, K. (2004). No child left behind. *World and I, 19*(5), 253–265.

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

Kozleski, E. (2002). *Bright future for exceptional learners: An action agenda to achieve quality conditions for teaching and learning.* Reston, VA: Council for Exceptional Children.

La Greca, A., & Stone, W. L. (1990). Children with learning disabilities: The role of achievement in their social, personal, and behavioral functioning. In H. L.

Swanson and B. Keogh (Eds.), *Learning disabilities: Theoretical and research issues* (pp. 333–352) Hillsdale, NJ: Erlbaum.

McCoy, K. M., & Pany, D. (1995). Summary and analysis of oral reading corrective feedback research. *The Reading Teacher, 39,* 548–555.

McLaughlin, M. J., & Warren, S. (1992a). *Issues and options in restructuring schools and special education programs*. College Park, MD: University of Maryland at College Park, The Center for Policy Options in Special Education.

McLaughlin, M. J., & Warren, S. (1992b). Outcomes assessments for students with disabilities: Will it be accountability or continued failure? *Preventing School Failure, 36*(4), 29–33.

McLaughlin, M. J., Smith-Davis, J., & Burke, P. (1986). *Personnel to educate the handicapped in America: A status report.* College Park, MD: University of Maryland at College Park, The Center for Policy Options in Special Education.

Meyer, K. (2004). No child left behind: A national perspective. *Spectrum: The Council of State Governments*, pp. 5–7.

Miller, S., Strawser, S., & Mercer, C. (1996). Promoting strategic math performance of students with learning disabilities. *LD Forum, 21*(2), 34–40.

Moore, D. W., Monaghan, E. J., & Hartman, D. K. (1997). Values of literacy history. *Reading Research Quarterly, 32,* 90–102.

National Center for Education Statistics. (2005). Washington, DC: U.S. Department of Education Institute of Education Sciences.

National Educational Goals Panel. (1998, Feb. 4). Daily Report Card [On Line]. Available: http:www.middleweb.com/DRCc/siz.html [1997, July].

National Information Center for Children and Youth with Disabilities. (1997). Washington, DC.

National Joint Committee on Learning Disabilities (1993*).* Providing appropriate education for students with learning disabilities in regular education classrooms. *Journal of Learning Disabilities, 26*(5), 330–332.

No Child Left Behind Act of 2001, 20 U.S.C. 70 § 6301 *et seq.* (2002).

Nolet, V., & Tindal, G. (1993). Special education in content area classes: Development of a model and practical procedures. *Remedial and Special Education, 14*(1), 36–48.

Oakland, T., Black, J., Stanford, G., Nussbaum, N., & Balise, R. (1998). An evaluation of the dyslexia training program: A multisensory method for promoting reading in students with reading disabilities. *Journal of Learning Disabilities, 31*(2), 140–147.

Paige, R. (2003). Paige fires back at critics who advocate "status quo" *Education USA: The Independent Monthly News Digest for School Leaders, 45*(10), 1, 8–9.

Paige, R. (2002a). Education making progress on integrating the disabled. Special Education Report, May, p. 2.

Paige, R. (2002b). If some can fulfill new law, so can others. *Education USA*, p 11.

Parmar, R., Deluca, C., & Janczak, T. (1994). Investigations into the relationship between science and language abilities. *Remedial and Special Education, 15*, 117–126.

Pettig, K. L. (2000). On the road to differentiated. *Education Leadership, 8*(1), 14–18.

Rashotte, C. A., Torgesen, J. K., & Wagner, R. K. (1997). Longitudinal studies of phonological processing and reading. *Journal of Learning Disabilities, 27*(5), 276–286.

Reiff, H. B., Gerber, P. J., & Ginsberg, R. (1997). *Exceeding expectations: Highly successful adults with learning disabilities.* Austin, TX: Pro-Ed.

Riley, R. W. (2002). Education reform: Through standards and partnerships, 1993–2000. *Phi Delta Kappan, 83*(9), 700–707.

Robelen, E. W. (2005). 40 years after ESEA: Federal role in schools is broader than ever. *Education Week, 24*(31), 1–2.

Stein, M., & Dixon, R. C. (1994). Effective writing instruction for diverse learners. *School Psychology Review, 23*(3), 392–406.

Stone, C. B., & Fahir, C. A. (2004). School Counselor Accountability: A measure of student success. Upper Saddle River, New Jersey: Pearson Merrill prentice Hall.

Strosnider, R., Lyon, C., & Gartland, D. (1997). Including students with disabilities into the regular classroom. *Education, 117*(4), 611–621.

TestTrax (2004). EducTrax, Incorporated. Riverside Publishing Company.

Thompson, J. & Thompson, M. (2005). *Differentiating instruction: Learning focused strategies that work.* Boone, NC: Learning Products Incorporated.

Tomlinson, C. (1999a). *The differentiated classroom: Responding to the needs of all learners.* Alexandria, VA: Association for Supervision and Curriculum Development. (ERIC Document Reproduction No. ED 386 301)

Tomlinson, C. (1999b). Mapping a route toward differentiated instruction. *Education Leadership 57*(1). Association for Supervision and Curriculum Development.

Torgesen, J. K. (1988a). Studies of children with learning disabilities who perform poorly on memory span tasks. *Journal of Learning Disabilities, 21*(10), 605–613.

Torgesen, J. K. (1988b). The cognitive and behavioral characteristics of children with learning disabilities: An overview. *Journal of Learning Disabilities, 21*(10), 587–590.

Torgesen, J. K. (1989). Cognitive and behavioral characteristics of children with learning disabilities: Concluding comments. *Journal of Learning Disabilities, 22*(3), 166–168, 175.

Torgesen, J. K., Wagner, R., & Rashotte, C. A. (1994). Longitudinal studies of phonological processing. *Journal of Learning Disabilities, 27*(5), 276–286.

Uberti, H., Scruggs, T., & Mastropieri, M. (2003). Keywords make the difference: Mnemonic instruction in inclusive classrooms. *Teaching Exceptional Children, 35*, 3, 56–61.

U.S. Department of Education (1994). *Sixteenth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: Author.

Vaughn, S., Elbaum, B, Schumm, J, Hughes, M. (1998). Social outcomes for students with and without disabilities in inclusive classrooms. *Journal of Learning Disabilities, September/October*, 428–436.

Weiss, I. (1987). Report of the 1985-86 National Survey of Science and Mathematics Education. Durham, NC: Research Triangle Institute. (ERIC Document Reproduction No. ED 292 620)

Wong, B. Y. L. (1987). How do the results of metacognitive research impact on the learning disabled individual? *Learning Disability Quarterly, 10*, 189–195.

APPENDIX: LETTER OF APPROVAL TO CONDUCT STUDY

John Zauner
Superintendent

www.carrollcountyschools.com

CARROLL COUNTY SCHOOLS

164 Independence Dr.
Carrollton, GA 30116
Phone: 770-832-3568
Fax: 770-834-6399

July 24, 2006

Auburn University
Review Board for Research Involving Human Subjects
307 Samford Hall
Auburn University, Alabama

I, John Zauner, Superintendent of Carroll County Schools, grant permission to allow a study on the learning outcomes and instructional models of students with mild learning and behavior disabilities to be conducted within the Carroll County Schools. I understand that the information gathered would be for research purposes only and the identity of the participants will not be revealed.

Regards,

John Zauner
Superintendent, Carroll County Schools

pc: Kathy Rogers, Assistant Superintendent of Curriculum and Instruction
Donna Nicholas, Director of Exceptional Children's s
Jackie Echols Powell, Graduate Student, Auburn University