

**A STUDY OF THE ACADEMIC ACHIEVEMENTS
OF THE REGULAR EDUCATION STUDENT
WHEN PLACED IN AN INCLUSION CLASSROOM**

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To the Graduate and Research Council:

I am submitting herewith a Field Study written by Judy Ann Stephan entitled "A Study of the Academic Achievements of the Regular Education Students when Placed in an Inclusion Classroom." I have examined the final copy of this paper for form and content, and I recommend that it be accepted in partial fulfillment of the requirements for the degree Education Specialist, with a major in Education and a concentration in Elementary Education.

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A Field Study
presented to the
Graduate and Research Council of
Austin Peay State University

In Partial Fulfillment
for the Requirements for the Degree
Education Specialist

by
Judy Ann Stephan

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ABSTRACT

This experimental study was conducted in order to test the question of whether regular education students make the same academic achievement when taught in an inclusion classroom as those students who are not taught in an inclusion classroom. There were two groups selected at random, 32 students per group. One group (experimental group) received no first grade inclusion instruction, but did receive second grade inclusion instruction. The second group (control group) received no first or second grade inclusion instruction.

The results indicated the students taught in an inclusion classroom made academic gains equal to, or greater than, the academic gains of students taught in a non-inclusion classroom.

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CHAPTER 1

INTRODUCTION

The concept of inclusion has been a part of special education since the passage of Public Law 94-142 in 1975. Inclusion also affects the normally achieving student since both populations are placed within the same classroom. When Public Law 94-142 was passed it provided for educating the special education student in the least restrictive environment. Recently, those who favor the inclusionist movement have begun to interpret the terms inclusion and least restrictive environment to mean one and the same. While these terms may have similar meanings, the operational concepts differ. Inclusion has been defined by Roach (1995) as the practice of serving students with a full range of abilities and disabilities in the general education classroom, with appropriate in-class support. As provided by PL 94-142, the least restrictive environment has been described as the placement of a student in an educational setting where the student is able to make optimal gains in learning. Polansky (1994) determined least restrictive environment may include placement options that range from inclusion to placement in residential schools. Polansky (1994) further stated that inclusionists believed the "politically correct" placement for students with special education needs were in regular education classrooms with the full support of special education services.

Mainstreaming (another special education methodology) has been referred to as the selective placement of special education students in one or more regular education classes. Proponents of mainstreaming (Smith & Luckasson, 1995) generally assumed a student must earn the opportunity to be placed in regular classes by demonstrating an ability to maintain the academic work level assigned by the regular classroom teacher. The regular education classroom is a key component in the determination of the placement options.

Many variables contribute to the academic success of the non-disabled student placed in the inclusion classroom. Teachers' attitudes toward the students (both non-disabled and disabled) play a significant role in the accomplishments of the students. Social adaptation and the development of leadership roles further contribute to the students' successful advancement and growth. Classroom behaviors and acceptance of students toward one another affect the positive growth of those placed within the inclusion atmosphere. Another contributor to the overall success of the inclusion classroom is the financial cost. All of these variables play a significant role in the academic success of the non-disabled students placed in the inclusion classroom. Considering the importance of those variables, it is imperative they be discussed within the study itself.

As in all aspects of education, teachers are critical to helping students succeed in inclusive classrooms. Unfortunately, most teachers practicing today were trained,

licensed, and inducted into a separate system of regular and special education. As a result of this training, the vast majority of teachers in this country have worked only in situations in which special education teachers focused on compensating for the disabilities of students, while general education teachers focused on the band of average students, referring exceptions to other teachers (Roach, 1995).

Vaughn and Schumm (1995), determined general education teachers who worked in inclusive settings needed to demonstrate beliefs and skills that would allow them to address the diverse needs of both regular and special education students.

Scruggs and Richter (1988) discovered the outcomes for all learners, including average and high-achieving students, must be evaluated. Many high-achieving students are likely to play tutorial roles with students who exhibit learning problems. General classroom teachers quite often lack adequate time to explain course content and monitor the progress of students with learning disabilities. The special education students are often assigned a seat next to the higher achieving students who perform well and who can provide assistance throughout the day. Although the positive effects of serving in the role of tutor during highly structured instructional sequences are well documented (Scruggs & Richter, 1988), little is known about the extent to which this new role of student tutors affects students' learning. Furthermore, little is known about the

extent to which teachers modified plans and expectations for the entire class when students with disabilities were represented (Vaughn & Schumm, 1995).

Lombardi (1994,p7) stated, "As teachers begin to individualize instruction to accommodate students with special needs, other students also benefit from the accompanying support systems that accompany the individualized instruction." Educators realized having two teachers as well as the special education aide in the inclusion classroom had significant benefits. Another contribution is most inclusion classes have a lower student-teacher ratio than non-inclusion classrooms. Further, most inclusion classrooms have a combination of academic levels, from high to low, and are heterogeneously grouped in a variety of areas. Weighing those factors, the question arose as to how much influence does placing the identified special education student in the inclusion room affect the overall achievement of the non-disabled student (Sharp, York & Knight, 1994).

Recent studies have investigated the effectiveness of one or more aspects of inclusion programs. A majority of the studies employed quantitative methods with some authors concluding that inclusion or integrated services have beneficial effects on both the learning disabled and normally achieving students (Banerji & Dailey, 1995).

A study conducted by Affleck, Madge, Adams, and Lowenbraun (1988) compared the performance of students

without learning disabilities placed in integrated education programs and reported no significant differences between the regular and special education students. The results of the study suggested that normally achieving students are not adversely affected by being placed among students with learning disabilities.

Preliminary data from the Collaborative Education Project (collaborative teaching and shared planning between special and regular education teachers) in 1990 suggested positive social and academic outcomes for students without and with disabilities (Salisbury, Evans, Palombaro, & Veech, 1990). Due to effective collaboration between the two groups of teachers, all students within the classroom become the benefactors.

In yet another study conducted by Truesdell and Abramson (1992), the classroom behaviors and final grades of elementary students, without and with disabilities, were examined. They reported significant correlations for all academic behaviors, except homework. They also reported increased levels of participation in academics for both groups of the students.

Hamer (1995) concluded inclusion is more than a trend. It is very likely that in the next few years more children will become a part of the inclusion process. The proper implementation of inclusion involves extensive planning and requires widespread changes in current educational practices. While change is often met with reluctance,

research has indicated properly implemented inclusion can be a beneficial experience for the non-disabled as well as the disabled student. When the inclusive program is designed effectively both groups of students should show increased academic achievements.

The placement of special education students into the regular education classrooms has created much concern among educators and parents alike. There is the inference that accommodating the needs of a few may place at risk the learning opportunities of the majority. There are strong reservations about inclusion being an effective educational process. While most educators feel inclusion benefits the disabled student, there are questions as to whether the regular education student will perform as well in an inclusion climate as the student would if taught in a non-inclusion class.

Statement of the Problem

The problem investigated in this study was whether the academic achievement of the regular education student is affected by being placed in an inclusion classroom. The concept of inclusion is to integrate identified disabled students into regular education classes that contain students with a variety of academic abilities. Research has indicated this type of classroom is extremely beneficial to the disabled student, but little is known about the academic and social effects on the regular education student. Little

research has been conducted to verify the academic progresses of the non-disabled student when placed in an inclusion classroom.

An inclusion classroom should be structured to include all subject matter taught in a regular education classroom. The degree of difficulty should be equal to that of a classroom that does not include the disabled student. By using the scaled scores on the Tennessee Comprehensive Assessment Program, this study was designed to compare the test scores of regular education students when placed in an inclusion classroom, to those test scores of students placed in a non-inclusion classroom.

Purpose of the Study

The primary purpose of this study was to investigate the academic achievement of regular education students when placed in an inclusion classroom. Considering the primary purpose of this study, the following question was investigated:

Was there a significant difference in the academic achievement scores of the regular education students placed in an inclusion classroom compared to those scores of students placed in a non-inclusion classroom?

Statement of the Hypothesis

Regular education students taught in an inclusion classroom will show no significant academic differences in

their achievement scores than those students who are taught in a non-inclusion classroom as determined by the scale scores achieved on the Tennessee Comprehensive Assessment Program (TCAP).

Limitations of the Study

1. The subjects for this study were limited to regular education students attending a public school system in the state of Tennessee.
2. The students participating in this study were limited to second grade.
3. The achievement scores were based on the Tennessee Comprehensive Assessment Program.
4. Only student's scores were used in this study, not the actual students.

Significance of the Study

This study could have a significant effect on the educational decisions made by teachers and administrators concerning the academic affects on regular education students placed in an inclusion classroom. Should the study show a significant difference in the academic gains of the students placed in an inclusion classroom, as compared to their peers who were not in an inclusion classroom, further studies may need to be conducted. If no significant difference is shown, additional inclusion classrooms may

need to be added in the school systems to include greater numbers of both non-disabled and disabled students.

Further, this study will provide additional research as to the academic achievement of the regular education student when placed in an inclusion classroom. After extensive review of the literature, it was determined few studies focused on the non-disabled student's academic achievement when placed in an inclusion classroom. This field study will contribute to the review of literature.

Definition of Terms

For the purpose of the study, the following operational definitions were applied to these terms:

1. Achievement - a task accomplished successfully, especially by means of exertion, skill, practice, or perseverance.
2. At risk students - students that have been identified as having significant academic problems.
3. Disabled/handicapped students - those students who have been identified as requiring special education services and who have an IEP (Individualized Educational Program).
4. IEP (Individualized Educational Program) - a document written by a team of professionals to meet the individualized needs and educational goals of the special education student.
5. Inclusion classroom - a public school classroom where both identified special education students and regular

education students receive equal academic instruction and can be provided the services of a special education teacher.

6. Inclusionist - a person or group that believe in and support the process of inclusion.

7. Non-disabled student - a student that does not meet the criteria to be classified as a special education student.

8. Non-inclusion classroom - a public school classroom in which no amount of inclusion is taking place.

9. Public Law 94-142 - passed in 1975 with provisions assuring free appropriate public education for all students with disabilities; later (1990) renamed the Individuals with Disabilities Education Act (IDEA).

10. School system effects - influences school systems, schools, teachers etc. have on student learning.

11. Scale scores - used to indicate a student's level of attainment in a subject.

12. TCAP - (Tennessee Comprehensive Assessment Program) A test given to Tennessee students to test competency in a variety of skills.

13. TEIA - Tennessee Educational Improvement Act of 1991. Requires fresh, nonredundant equivalent tests each year.

14. VAAS - Value added assessment system - a statistical process that was developed to provide unbiased estimates of the influences that school systems, schools, and teachers have on the academic gains of students.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

Introduction

Inclusion is an extremely controversial educational approach because it relates to pedagogical and social values, as well as our sense of individual worth. Many educators and parents are seeking data as to the effects upon academic achievement of the regular education students who are placed in an inclusion classroom. Inclusion (Snell & Janey, 1993) is a philosophical concept that espouses the philosophy that all children (both non-disabled and disabled) are unique and requires each students' needs be met and valued. A commitment to this philosophy of inclusion and a belief in equal value of both the non-disabled and the disabled students should be shared by those involved for this educational environment to work. There are varying perspectives and opinions regarding inclusion from groups within and outside special education. This has added to the confusion and concern with which educators approach the theory and the reality of inclusion placements.

Extensive research has shown (Willard, 1994) building school environments that support the inclusion of all students requires collaborative planning and program development at all levels of a school's infrastructure. It also requires a redefinition of the relationships among all those levels (Willard, 1994). Supportive school environments

require the development of a shared vision of inclusion, a commitment of resources, adequate staff, time for program and staff development, and the continuous and collaborative establishment of benchmarks for achievement by which to measure progress toward this vision.

Snell and Janey (1993) concluded that flexibility should be present at every stage of the inclusion process. Because teaching models are often altered, curriculum adaptations made, and unique needs addressed, all participants must be willing to accept compromise and try new situations. Inclusive settings provide opportunities and benefits to children with and without disabilities that are not available in separate settings (Snell, & Janey, 1993). The members of the Association of California School Administrators (1995) issued a statement that a decision to make an inclusion placement should be based on a determination of mutual educational benefit to both special and regular education students within a particular setting. Educators and parents should be aware of the potential benefits, as well as the concerns, when selecting an inclusion placement or making a policy determination concerning inclusion (ACSA, 1995).

According to Virginia Roach (1995) inclusion has been defined as the practice of serving students with a full range of abilities and disabilities, in the regular education classroom - with appropriate in-class support. As in all aspects of education, teachers are critical to

helping students succeed in inclusive classrooms. Unfortunately, most teachers practicing today were trained, licensed, and inducted into a separate system for special or regular education. A vast majority of teachers in this country have worked only in situations where special education teachers concentrate on compensating for the disabilities of students, while regular education teachers concentrate on the band of average students, referring exceptions to other teachers. Research has indicated (Roach, 1995) merging the two educational systems required teachers work together to learn, plan, and share the successes and failures of inclusion. Successful planning models ensure that all teachers (special and regular education), paraprofessionals, and related service personnel are included in the process. In many schools, core planning teams are established to develop curriculum and design inclusive programs. Members of these teams educate the remaining educational staff through presentations on inclusion and through direct assistance.

Schultz (1994) concluded good leadership sets the tone for the entire inclusion process. Principals and superintendents must convey a positive attitude toward inclusion and foster a supportive environment in which new and challenging situations are dealt with in a flexible manner. Teachers who have the encouragement and backing of their supervisors are often the most successful initiators of change.

Inclusion is a many faceted philosophical and educational process. Many issues are involved that impact the final goal of academic achievement for the non-disabled and disabled students within the inclusion atmosphere. These variables must be recognized and dealt with before the attainment of the successful inclusion classroom can be established.

Philosophy of Inclusion

Inclusion has not been identified as just a program or a place, but rather a philosophy of education where everyone belongs, is accepted, supports, and is supported by his or her peers and other members of the school community. According to Banerji and Dailey (1995), inclusion refers to specific components and strategies that are essential to the corresponding educational delivery models. Regular and special education teachers must collaborate and team teach to meet the needs of all students. In addition, Roach (1995) suggested inclusion involves students attending their neighborhood schools and participating in academic classes and activities.

Vaughn, Elbaum and Schumm (1996) concluded the theme of inclusion is the development of regular school and classroom communities that nurture and support the educational and social needs of every student in attendance. Inclusive schools should be more like real life, where people of all levels of intelligence, skills and abilities work, play,

learn and experience life together. Further Vaughn et al. (1996), determined all students can learn to understand, respect, be sensitive to, and grow comfortable with individual differences. Children and teachers alike learned that everyone had strengths that could benefit others in the classroom. They learned to communicate, interact, work together, develop friendships and assist each other with those strengths to meet the needs of all.

According to Katsiyannis, Conderman and Franks (1995), inclusion is a changing trend in education. More and more schools have followed federal guidelines and have implemented programs in which all children with disabilities are included in the regular classroom. Special education students are no longer segregated from the regular education students, instead all students learn together, both disabled and non-disabled. The research findings further indicated there are concerns as to how well the regular education student fares academically when placed in an inclusion environment.

Educators are concerned about the expectations and responsibilities accepted in providing for the academic achievement of the non-disabled education student placed in this inclusion environment. Since little research exists concerning the overall academic achievement of the non-disabled student placed in an inclusion classroom, both parents and educators have questioned the effects of this placement.

A large body of literature has addressed various forms of inclusive programming tried in public schools within the United States. The arguments supporting the approach are based in philosophical as well as empirical grounds. Fox and Williams (1991) investigated recent studies that dealt with the effectiveness of one or more aspects of inclusion programs. These studies could be arranged in the following three categories: studies examining students' academic outcomes, studies examining students' affective or social-behavioral outcomes, and studies or documents focusing on program processes and delivery. Further investigations by Fox and Williams (1991) indicated a majority of the studies have employed primarily quantitative methods, with some authors concluding that inclusion or integrated services have beneficial effects on both the non-disabled and disabled students.

The Inclusion Teacher's Role

Research has shown it is crucial teachers in the inclusion classroom be given the training to plan and adapt a curriculum for children with disabilities that doesn't impede the non-disabled students. This means that academic curricula must be custom designed for students of varying abilities. For example, in geography an entire fourth grade class may study the states and capitals. A child with a disability may be given modified objectives which would require the learning of only the capital in his state or the

names of the bordering states. The gifted child's objectives could be to learn the state capitals and the natural resources of each state. It has been shown (Vaughn & Schumm, 1995) regular education teachers are eager to embrace feasible practices to improve instruction for all learners. These same teachers are considerably less willing to implement instructional practices that meet only the needs of students with learning disabilities and cannot be used for the class as a whole. Research indicates this aspect of inclusion is one of the most important and requires that every student, regardless of whether they have a disability, be taught at his own academic level.

According to the writings of Hollowood, Salisbury, Rainforth, and Palombaro (1994), relatively little attention has been devoted to what actually transpires during the school day in integrated instructional contexts. For educators working in integrated contexts, it is important non-disabled children benefit from instruction and the presence of students with disabilities not diminish the quality or opportunity for instruction for students without disabilities.

Liddiard (1992) determined, in order to achieve academic success, it was important to create a classroom that maximizes cooperation and minimizes competition. In a supportive classroom environment, students with disabilities should learn and thrive. Non-disabled students also benefit from the processes. Both non-disabled and disabled students

learned to accept and interact with people who are different from themselves. Liddiard (1992) further decided there is a need to know if this service delivery system provides equal or greater gains for the special education child while showing no detriment to their regular education classmates.

Comparison of Non-disabled and Disabled Students

Ysseldyke and Algozzine (1982) compared a group of learning disabled students to a group of their peers identified as non-handicapped slow learners on measures of cognitive ability, academic achievement, perceptual-motor skills, self concept, and behavior problems. They found an average of 96% of the scores obtained by the two groups fell within a common range. This data raised the question as to whether there is any actual academic differences between the two groups when taught in an inclusion classroom.

Affleck, Madge, Adams, and Lowenbraun (1988) compared the performance of students without learning disabilities placed in integrated education programs to those with a learning disability and reported no significant differences between the two groups. These findings suggested that normally achieving students are not adversely affected by being placed among students with learning disabilities.

Lombardi (1994) found that non-disabled students academically benefited from inclusion because of the support system accompanying the individualized instruction needed to accommodate students with special needs. Inclusion often

provided the non-disabled student with opportunities in leadership and peer tutoring. It also allowed those students to better understand the diversity of the classroom population. Educators are concerned about the expectations and responsibilities placed upon them to promote academic achievement of the regular education student placed in this inclusion environment.

Baker and Zigmond (1990) researched the impact of instructional time allocated to regular education students when learning disabled students were placed in a regular classroom. The Baker and Zigmond (1990) studies were designed to determine if the non-disabled students received more or less instructional time than their disabled peers. Further, they sought to determine if non-disabled students spent less time than the disabled students engaged in academic tasks. They concluded that integration of the special education students into the regular classroom did not affect instructional time nor time spent on academic tasks.

In a study conducted by Hollowood et al. (1994) the results indicated that time allocated to instruction was not only equitable for the students without disabilities, but also fell within the upper range in comparison to previous studies. Non-disabled children may actually benefit from the services of the special education teachers assigned to provide support for the regular education teachers.

In a study reviewed by Hales (1995) no significant difference in standardized test scores or on report cards were found between the non-disabled and disabled students. Hales (1995) further reported that in another study conducted in 1985, findings indicated the presence of peers with disabilities does not inhibit the rate of achievement in reading and/or math. Researchers in Michigan, Indiana, Colorado, and other states came to the same conclusion; youngsters without disabilities in inclusive classes that are taught by teachers who have had extra training perform as well as students in traditional classes.

Social Benefits

Heller, Spooner, Spooner and Algozzine (1992) reported proponents of inclusion maintain inclusive schools offered opportunities for meaningful community membership. Inclusive environments offered both the non-disabled and disabled student the occasion to work together to achieve community goals. Within the regular education classroom both groups received exposure to talented teachers, developed new social relationships with same-age peers, and received quality programs. Further, (Ferguson, Meyer, Jeanchild, Juniper & Zingo, 1992) determined, rather than eliminating or suppressing differences, inclusion programming enabled all students to become active participants in community activities. As a result, the non-disabled student learned

to be cognizant of the needs required by the disabled student.

Preliminary data from the Collaborative Education Project (Salisbury, Evans, Palombaro, & Veech, 1990) which practiced the full inclusion model, suggested positive academic and social outcomes for students without and with disabilities. Additionally, Truesdell and Abramson (1992) examined the relationship between classroom behaviors and final grades of inclusion students and reported significant correlations for all academic behaviors except homework. They also reported increased levels of participation in academics for both groups of students. Salisbury (1991) indicated, in order to help the non-disabled student become successful in an inclusion classroom, it required more than physical organization and staff reallocation. The realization of success required the use of practices that are the most directly linked, through empirical research, to positive student outcomes.

According to Staub and Peck (1994-95), the potential for social benefits for the non-disabled student within the inclusion classroom is increased. Developing friendships, understanding human differences, and social growth were but a few. Often children without disabilities take enormous gratification in helping their special needs classmates.

In one study researched by Hales (1995), teachers reported that students showed a great deal of acceptance and understanding of the similarities they shared with fellow

students who had disabilities. The non-disabled students reported they had learned more about themselves, including the realization they could be good neighbors and good listeners. Inclusion advocates also felt bringing together the non-disabled and disabled students (with a full range of abilities and disabilities) promoted a lifelong appreciation for individual differences.

In a study conducted by Putnam (1993), it was determined that inclusion is thought to decrease the negative effects of labeling. Additionally, inclusion increased the self-esteem of the at risk students. The effects of integrating both populations eliminated most forms of stereotyping. When integration was carried out appropriately, research has demonstrated there were benefits for both non-disabled and disabled students. Putman (1993) further indicated, when friendships developed, students without disabilities learned to appreciate differences, and students with disabilities were more motivated. These characteristics were disseminated into the home and into the community. Experts also believed that many non-disabled children felt positively about their experiences in inclusionary classrooms. Hales (1995) review of literature indicated 92% of youngsters felt inclusion was a good idea. Those findings suggested that social outcomes for students in inclusion programs are multifaceted and complex.

Teacher Attitudes

Teachers' attitudes and behaviors toward regular education students in an inclusion classroom were the focus of a study conducted by Baker and Zigmond (1990). The authors concluded from the data that teachers' attitudes were a priority issue when addressing the academic benefits of the inclusion classroom. Most regular education teachers working in the inclusion environment had limited or no special education experience. From these findings it was determined the lack of experience decreased bias toward the non-handicapped students.

Algozzine (1976) researched teacher attitudes toward students in the classroom and determined that regular education teachers had a low tolerance for social defiance. The major influence contributing to teachers' attitudes and behaviors toward students, whether non-disabled or disabled, was the teachers' perception of students' behaviors in school. Further, Algozzine (1976) concluded there were definite student-teacher interaction patterns that differed according to teachers' reported attitudes. Teachers had more negative comments, expressions, tone, and body language toward students with whom they held rejecting attitudes. Conversely, teachers had more positive interactions with students with whom they were attached.

According to Siegel (1992), it appeared there were valid reasons for teachers' behaviors toward students. Teachers' behaviors were often in response to students'

actions rather than teachers' preconceived expectancies or prejudices toward students. Further, Seigel (1992) determined these same teachers did not have a high tolerance for student misbehavior. This was especially so for male students (Scholsser & Algozzine, 1979). Helton and Oakland (1977) reported the strongest influence on teachers' attitudes were students' personality characteristics. This research did not show significant differences in teacher attitude toward disabled students alone, but in conjunction with general behavior and personality. Kornblau and Keogh (1980 p.87) stated:

The complexities of teacher-pupil interaction have long interested educational researchers; yet it seems fair to say the nature of the functional 'match' between pupil and teacher remains uncertain. Fortunately, in most classrooms both child and teacher can tolerate considerable discrepancy from an ideal 'match'.

When teachers were required to integrate both non-disabled and disabled students into the classroom, they rediscovered and reinvented solution strategies to accommodate the unique stocks of pedagogical knowledge and skills (i.e., training and experience). Gerber (1988) concluded the final result of this integrated classroom was the establishment of a tolerance (meant here in its engineering rather than social connotation). Just as a tolerance was an acceptable boundary on probable error, a classroom tolerance

established a model range of students from whom normative expectations arose and for whom instructional arrangements were prioritized.

Financial Benefits and Concerns

Van Dyke, Stallings and Colley (1995) found that inclusion is not a teaching program a school system should consider as a means to save money. However, the benefits for all students are likely to be worth the extra cost. Van Dyke et al. (1995) findings determined non-disabled students academically benefited from having extra supports, such as curricular adaptations, study aids, and individualized assistance. Both groups of students learned that everyone brought strengths to each situation.

Educational financing is often dictated by how to use money to best meet the needs of the most children. When inclusion is done correctly, using adequate training, support, and materials adapted to meet each child's needs, the cost of this inclusive program can be about the same as traditional special education. The advantage of implementing the program is children have better educational experiences. Mowdsley (1995) reported inclusion classrooms met the needs of both the non-disabled and the disabled children and therefore is cost effective. The reasoning is it met the needs of both populations within the confines of a single classroom. Because inclusion focuses on the location where services are provided rather than on the

source of funding, a more fluid approach to resource allocation is required.

Administrators of school districts have been endorsing inclusion as a viable educational program delivery option. According to Wolak, York, and Corbin (1992), students with disabilities in inclusive pilot programs learned more academic and functional skills in a shorter period of time than when they were in separate classrooms. Further, Conn (1992) reported that inclusive programming in a district-wide effort did not have an adverse effect on the academic achievement of non-disabled students. Additionally, transportation costs and other per-student educational costs were drastically reduced in integrated settings.

Conclusion

The practice of inclusion has been a topic that has created controversy among education communities including parents, educators and students. Research has indicated that many factors contribute to the successful implementation of the inclusion classroom; therefore, to the academic achievement of the non-disabled and disabled students when placed in this environment.

Studies have shown building school environments that support the inclusion of all students (non-disabled and disabled) required collaborative planning and program development at all levels. A commitment to the process and the continuous collaborative involvement of all parties must

be present to effectively establish a positive inclusion environment. Teachers, administrators, parents and students should be active partners in this process for the program to work effectively.

Research has indicated the focus of inclusion is to develop regular school and classroom communities that nurture and support the educational and social needs of every student in attendance. These classrooms should positively cultivate communication, friendships, and leadership skills while enhancing academics for both the non-disabled and disabled student. The process of inclusion is one of creative academic advancement. The classrooms of a decade ago are outdated and new innovative ideas have replaced the old educational methods.

While academic achievement should always be a priority, the areas of social adaptation, behavioral management, segregation, and meeting the individual needs of both the non-disabled and disabled students are issues that should have been addressed. Research has indicated the positive outcomes of academic achievement is based on many contributing variables. The adaptation of a curriculum designed to meet the needs of this diverse student population should be implemented. The atmosphere of the inclusion classroom should include components to address individual educational needs of the student population housed within a single environment.

Forest and Pearpoint (1996) indicated that successful inclusion practices depended on restructured schools that allowed for flexible learning environments, with flexible curricula and instruction. Under ideal conditions, all students (both non-disabled and disabled) can work toward the same overall educational outcomes. What differs is the levels at which these outcomes are achieved.

The investigation and research regarding the inclusive school environment's impact on the academic performance of the non-disabled student is a topic of continued discussion. The question of impact has been studied by several different authors and from differing perspectives. The question researched was the academic performance of the regular education student when placed in an inclusion classroom affected. This controversial educational issue needs further research to validate the effects of academic achievement for the non-disabled student in the inclusion environment. This field study has added to the literature in that it has provided another study in which the academic achievements of the regular education student when placed in an inclusion classroom has been researched.

CHAPTER 3

METHODOLOGY AND PROCEDURES

Methodology

The purpose of this study was to determine if the academic achievement of regular education second grade students, taught in an inclusion classroom, performed higher or lower on the Tennessee Comprehensive Assessment Program (TCAP) than students taught in a non-inclusion classroom. Data was collected to compare the academic gains achieved in a non-inclusion first grade with the academic gains achieved when the two groups were taught in a second grade inclusion or non-inclusion classroom. The subjects were selected at random with the only qualifier being that the students had not received first grade instruction in an inclusion classroom. The scores were collected for reading, language, math, science and social studies. According to McLean and Sanders (1984), these scores represent the results of a statistical methodology where factors such as teachers' roles and attitudes and social adaptation have been accounted for and measured. The question for this study was: Would the academic gains of second grade students taught in an inclusion classroom be greater than those students receiving instruction in a non-inclusion classroom?

In order to answer the questions instigated by the purpose of the study, several procedures were used. The procedures are described in this chapter under the following

topics: (a) statement of the hypothesis, (b) description of the subjects, (c) research design and procedures, and (d) analysis of the data.

Statement of the Hypothesis

Regular education students taught in an inclusion classroom will show no significant academic differences in their achievement scores than those students taught in a non-inclusion classroom as determined by the scale scores achieved on the TCAP.

Description of the Subjects

The subjects were 64 second grade students selected at random from the data sheets provided by the Tennessee Comprehensive Assessment Program for the years 1995 and 1996. The population represented a mixed racial component and financial status of students. All subjects attended three schools located in the state of Tennessee and were within the same large school system which consisted of rural, inner city and city students.

Research Design and Procedures

Design

The design for this study would be considered a causal-comparative. The investigation involved the selection of two groups of second grade students. The experimental group

consisted of 32 second grade students assigned to an inclusion classroom. This particular classroom was taught by the regular education teacher with support from the special education teacher and educational assistant. The control group also consisted of 32 second grade students which did not receive special education services and were taught in a non-inclusion classroom. The groups for the collection of the data were selected at random. The variable held constant was neither group had been taught in an inclusion first grade. The first grade TCAP scale scores were collected and functioned as the pretest for calculating the mean year gain. The TCAP scale scores from the second grade experimental and control groups were used as the posttest.

Procedures

Permission to collect the data for the study was obtained from the appropriate school officials, which included: (a) the director of the schools, (b) the supervisor of instruction, (c) the supervisor of research and development, (d) and the principals of the participating schools.

A random composite of the TCAP test results, which represents the scale scores, were taken from the cumulative files located at the central office in the school district. The results of the scale scores are calculated to determine the academic mean year gains which are based upon the

Tennessee Value Added Assessment System (TVAAS). The Educational Improvement Act (EIA) requires the reporting of the educational influences by the administrative staff of the school systems upon the academic progress of students. The final results of the academic findings are statistically evaluated through the use of the Tennessee Value Added Assessment System (TVAAS) and would be reported back to the school systems state wide (Sanders & Horn, 1996). It is mandated this report be available to the public and updated annually. The scores collected are calculated using a statistical procedure developed by William L. Sanders.

TVAAS is based on a formula which calculates the statistical data and provides information concerning the influence school systems, schools, and teachers have on the indicators of student learning. The original studies conducted by Dr. Sanders and Dr. Robert A. McLean (1984) yielded six primary findings:

1. There were measurable differences among schools and teachers with regard to their effect on indicators of student learning.
2. The estimates of school and teacher effects tended to be consistent from one year to the next.
3. Teacher effects were not site specific but related to a gain score which could not be predicted by simply knowing the location of the school.
4. Student gains were not related to the ability

or achievement levels of the students when they entered the classroom.

5. The estimate of school effects was not related to the racial composition of the student body.
6. There was very strong correlations between teacher effects as determined by the data and subjective evaluations by principals and supervisors.

The TVAAS uses scale scores to indicate a student's current level of attainment in a subject while staines and percentiles rank students in comparison to their peers. Whereas staines and percentiles tend to remain relatively constant, scale scores are designed to increase from year to year as the student progresses. The pattern of the scale scores over the student's school career forms a profile of academic growth.

According to McLean and Sanders (1984), basing the TVAAS on a statistical mixed model methodology, unbiased estimates of the influence of teachers, schools and school systems on student learning rates can be obtained, even when extreme differences exist in students' environments and assignments to various teachers. The robustness of the TVAAS model has been confirmed using computer simulations to evaluate worst case scenarios.

The scores for calculating the students' academic gains were obtained by the administration of the TCAP achievement tests. The validity and reliability of the TCAP are reported as good and are described in Appendix D.

The academic achievements in this study were determined by listing all the students in each group who met the criteria to be a member of either the control or experimental group. The student's scale scores from 1995 and 1996 were averaged. A years academic gains were obtained by subtracting the 1995 scale score from the 1996 scale score per subject area. The student's academic gains were then compared to the national norm gain determined by the Sanders Model.

CHAPTER 4

SUMMARY, FINDINGS AND CONCLUSIONS, AND RECOMMENDATIONS

Summary

This chapter contains a summary and analysis of data collected to test the stated hypothesis. The data were analyzed according to the procedures outlined in Chapter 3.

The stated hypothesis for this study was: Would there be a difference in the academic achievement scores for regular education students taught in the inclusion classroom as compared to students taught in a non-inclusion classroom?

The data consisted of pretest and posttest scores for each student in five academic areas. The pretest scores represented scores documented while the students were enrolled in first grade and the posttest scores while in the second grade. Calculation of the scores were based on the Sanders Model. These scale scores determine the academic gain, per student, for a one year period based on the academic progress accomplished between first and second grade. The mean gain scores for the experimental and control groups were then compared to the national norm gain. The national norm gains for each of the academic areas were derived and reported by Dr. William Sanders.

Scores were collected for the academic areas of reading, language, math, science, and social studies. According to TVAAS, the following scores, based on the national norm average, reflects one years gain: Reading +80, Language +56, Math +81, Science +47 and Social Studies +66.

The reading scores for the experimental group reflected 15 of the 32 students achieved a years gain or more when compared to the national norm gain of +80. The mean gain for this group was +83. This shows the inclusion group scored 3 points above the national average. The students in the control group had 16 of 32 students who made a years gain or more. The mean for the entire group was +83, 3 points higher than the national average. The control and experimental groups had the exact same mean years gain. Table 1A shows these scores.

Table 1A

Reading Scale Scores

EXPERIMENTAL GROUP					CONTROL GROUP				
STUDENT	SCALE SCORES	SCALE SCORES	MEAN AVERAGE	YEAR GAIN	STUDENT	SCALE SCORES	SCALE SCORES	MEAN AVERAGE	YEAR GAIN
ID	1995	1996			ID	1995	1996		
1	566	620	593	54	33	513	566	540	53
2	567	630	599	63	34	395	542	469	147
3	663	684	674	21	35	501	535	518	34
4	560	605	583	45	36	522	637	580	115
5	511	665	588	154	37	558	651	605	93
6	618	684	651	66	38	563	572	568	9
7	554	643	599	89	39	479	542	511	63
8	576	678	627	102	40	520	641	581	121
9	540	674	607	134	41	498	627	563	129
10	597	731	664	134	42	586	654	620	68
11	547	563	555	16	43	527	577	552	50
12	558	632	595	74	44	601	627	614	26
13	583	665	624	82	45	565	658	612	93
14	543	585	564	42	46	558	663	611	105
15	540	620	580	80	47	536	644	590	108
16	685	663	674	-22	48	493	659	576	166
17	644	790	717	146	49	587	771	679	184
18	538	588	563	50	50	613	647	630	34
19	575	643	609	68	51	587	743	665	156
20	532	646	589	114	52	543	566	555	23
21	546	641	594	95	53	674	695	685	21
22	518	630	574	112	54	529	631	580	102
23	485	587	536	102	55	543	663	603	120
24	531	701	616	170	56	606	639	623	33
25	516	630	573	114	57	557	653	605	96
26	578	645	612	67	58	583	657	620	74
27	545	622	584	77	59	610	704	657	94
28	551	645	598	94	60	586	707	647	121
29	556	642	599	86	61	619	662	641	43
30	583	630	607	47	62	665	700	683	35
31	516	635	576	119	63	608	723	666	115
32	546	604	575	58	64	622	661	642	39
mean yr gain				83	mean yr gain				83

The math scores for the experimental group showed 21 of 32 students made a years gain or more when compared to the national norm gain. The mean gain for this group was +95. The national norm gain in math was +81 which means this group scored 14 points above the national average. The students in the control group had 12 of 32 students who made a years gain or more. The mean for this group was +74 which shows a score of 7 points below the national norm gain. This comparison showed the experimental group scored 21 points higher than the control group. Table 1B shows these scores.

Table 1B

Math Scale Scores

EXPERIMENTAL GROUP					CONTROL GROUP				
STUDENT	SCALE	SCALE	MEAN	YEAR	STUDENT	SCALE	SCALE	MEAN	YEAR
ID	SCORES	SCORES	AVERAGE	GAIN	ID	SCORES	SCORES	AVERAGE	GAIN
	1995	1996				1995	1996		
1	424	500	462	76	33	526	547	537	21
2	547	641	594	94	34	457	523	490	66
3	659	667	663	8	35	445	533	489	88
4	518	607	563	89	36	489	560	525	71
5	505	622	564	117	37	592	590	591	-2
6	567	635	601	68	38	525	563	544	38
7	479	517	498	38	39	495	557	526	62
8	577	629	603	52	40	579	575	577	-4
9	570	608	589	38	41	517	563	540	46
10	549	663	606	114	42	541	640	591	99
11	48	633	558	151	43	605	701	653	96
12	528	657	593	129	44	538	671	605	133
13	538	654	596	116	45	605	693	649	88
14	571	701	636	130	46	531	573	552	42
15	487	616	552	129	47	608	653	631	45
16	544	750	647	206	48	536	589	563	53
17	648	750	699	102	49	547	656	602	109
18	384	560	472	176	50	513	591	552	78
19	491	588	540	97	51	609	681	645	72
20	557	616	587	59	52	558	626	592	68
21	525	604	565	79	53	569	635	602	66
22	483	557	520	74	54	527	654	591	127
23	489	553	521	64	55	571	674	623	103
24	496	629	563	133	56	576	639	608	63
25	483	575	529	92	57	559	692	626	133
26	591	609	600	18	58	521	647	584	126
27	416	600	508	184	59	563	670	617	107
28	514	572	543	58	60	579	654	617	75
29	492	588	540	96	61	590	664	627	74
30	475	564	520	89	62	622	712	667	90
31	535	604	570	69	63	613	673	643	60
32	572	665	619	93	64	646	712	679	66
				mean yr gain					mean yr gain
				95					74

Findings

Findings were based on the mean years gain in five academic areas between the experimental and control groups. The results of the findings in each of the academic areas are discussed below.

Reading

As shown on Table 1A, p.36, the mean gain for the experimental group was +83 compared to the national gain average of +80. The +3 is a gain for the entire group. The mean gain for the control group was +83 and is a +3 for the entire group. A comparison of the gains of 3 points for the groups show each scored the same in reading.

Math

As shown on Table 1B, p.37, the mean gain in math for the experimental group was +95 compared to the national norm gain of +81 in math. This group had a years gain of 14 points. The control group had a +74 which is 7 points less than the national norm gain. This data indicates the experimental group scored higher than the control group in math.

Language

As shown on Table 1C, (Appendix A), the mean in language for the experimental group was +56 compared to the

national norm gain of +56. There was no gain when compared to the national norm. The control group had a years gain of +52 which is 4 points less than the national norm. The data indicates the experimental group scored higher in language than the control group.

Science

As shown on Table 1D, (Appendix B), the mean in science for the experimental group was +52 compared to the national norm average of +47. The experimental group scored 5 points higher than the national norm average. The control group had a years gain of +53. This indicates this group scored 6 points higher than the national average. The control group scored 1 point higher in science than the experimental group.

Social Studies

As shown on Table 1E, (Appendix C), the mean gain in social studies for the experimental group was +81 compared to the national norm average of +66. This group scored 15 points higher than the national norm. The control group scored +79 which was 13 points higher than the national norm. The experimental group scored 2 points higher than the control group in social studies.

Conclusions

The problem investigated in this study was whether the academic achievement of the regular education student is affected by being placed in an inclusion classroom. The conclusions based upon the analysis of the data is the experimental group had higher gains in the academic areas of math, language, and social studies than the control group. The experimental group had the same gain in reading as the control group and scored 1 point less in science.

An observation of the scale scores collected from each of the academic areas shows that in math the experimental groups scored 14 points higher than the national norm gain, and the control group scored 7 points less than the national norm gain. As a result a t -test for independent samples was calculated and a t -value of 2.17 was found for the differences. For it to be significant a t of 2.045 at the .05 level of probability was required. Therefore, it was determined that there was a significant difference in the academic years gain for the experimental group in the area of math. However, in the other academic areas tested the academic areas were not significantly different for the experimental group.

In the academic area of language the experimental group achieved a mean years gain of +56 while the control group achieved a mean years gain of +52. The national norm gain is +56 which shows the experimental group attained the

national average while the control group fell 4 points below the national average.

For the academic area of social studies the experimental group scored a mean years gain of +81 and the control group had a gain of +79. The national norm gain is +66 which shows the experimental group again achieved a higher gain than the control group.

In the academic area of reading both the experimental and control group had mean year gains of +83. The national norm gain is +80 which shows each group had equal gains.

However, in the academic area of science the control group scored higher than the experimental group by 1 point. The mean year gain for the experimental group was 52 and the gain for the control group was 53. This is the only academic area in which the experimental group did not have the same, or greater gains, than the control group.

The findings of this study indicates the experimental group (inclusion students) were not adversely affected by being taught in an inclusion environment. The academic achievements of this population are not decreased, but for the most part, increased when compared to the non-inclusion classroom students. It can therefore be concluded the experimental group were not academically impeded when taught in the inclusion classroom. Contributing factors for the positive affects upon the inclusion students may be: (a) being taught by both the regular and special education teacher, (b) support from the educational

assistant (c) lower teacher-student ratio (d) the tutorial role of the regular education student and (e) the comprehensive curriculum planning by the teaching staff.

Recommendations

The results of this study on the academic achievements of the regular education student when placed in an inclusion classroom are positive and lead this researcher to believe placement in this inclusive environment is beneficial to the student.

It is the recommendation of this researcher further studies be conducted to gather additional information on the academic effects upon the inclusion student. The information collected in this study is encouraging and lead this writer to believe the inclusion classroom is working and unmistakably a positive educational tool.

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APPENDICES

APPENDIX A

Table 1C

Language Scale Scores

EXPERIMENTAL GROUP					CONTROL GROUP				
STUDENT ID	SCALE SCORE 1995	SCALE SCORE 1996	MEAN	YEAR GAIN	STUDENT ID	SCALE SCORE 1995	SCALE SCORE 1996	MEAN	YEAR GAIN
1	561	602	582	41	33	577	629	603	52
2	630	679	655	49	34	535	597	566	62
3	704	699	702	-5	35	560	586	573	26
4	645	676	661	31	36	572	634	603	62
5	571	688	630	117	37	611	661	636	50
6	718	734	726	16	38	584	627	606	43
7	614	656	635	42	39	570	597	584	27
8	581	726	654	145	40	629	668	649	39
9	632	656	644	24	41	544	667	606	123
10	618	706	662	88	42	666	692	679	26
11	597	633	615	36	43	611	634	623	23
12	608	686	647	78	44	643	687	665	44
13	618	718	668	100	45	646	708	677	62
14	641	636	639	-5	46	590	650	620	60
15	554	652	603	98	47	607	679	643	72
16	679	727	703	48	48	624	695	660	71
17	695	749	722	54	49	697	745	721	48
18	613	612	613	-1	50	690	690	690	0
19	601	648	625	47	51	685	711	698	26
20	643	667	655	24	52	580	645	613	65
21	624	673	649	49	53	674	706	690	32
22	517	635	576	118	54	626	716	671	90
23	571	665	618	94	55	641	717	679	76
24	603	702	653	99	56	611	655	633	44
25	585	658	622	73	57	603	680	642	77
26	644	675	660	31	58	637	712	675	75
27	609	670	640	61	59	679	700	690	21
28	608	690	649	82	60	614	690	652	76
29	598	636	617	38	61	685	714	700	29
30	619	636	628	17	62	609	727	668	118
31	602	644	623	42	63	678	758	718	80
32	554	624	589	70	64	651	677	664	26
				mean					mean
				56					52
				yr gain					yr gain

APPENDIX B

Table 1D

Science Scale Scores

EXPERIMENTAL GROUP					CONTROL GROUP				
STUDENT ID	SCALE SCORE 1995	SCALE SCORE 1996	MEAN	YEAR GAIN	STUDENT ID	SCALE SCORE 1995	SCALE SCORE 1996	MEAN	YEAR GAIN
1	650	560	605	-90	33	524	584	554	60
2	583	633	608	50	34	480	558	519	78
3	628	766	697	138	35	567	601	584	34
4	590	627	609	37	36	580	610	595	30
5	616	675	646	59	37	650	643	647	-7
6	641	730	686	89	38	545	608	577	63
7	597	624	611	27	39	650	647	649	-3
8	627	714	671	87	40	579	670	625	91
9	679	658	669	-21	41	558	659	609	101
10	678	670	674	-8	42	570	664	617	94
11	497	600	549	103	43	528	666	597	138
12	604	694	649	90	44	603	641	622	38
13	556	787	672	231	45	719	691	705	-28
14	591	691	641	100	46	624	716	670	92
15	569	576	573	7	47	646	625	636	-21
16	647	677	662	30	48	548	629	589	81
17	649	791	720	142	49	670	778	724	108
18	626	642	634	16	50	621	587	604	-34
19	573	650	612	77	51	719	778	749	59
20	653	700	677	47	52	719	766	743	47
21	624	634	629	10	53	678	703	691	25
22	522	586	554	64	54	565	672	619	107
23	536	595	566	59	55	591	695	643	104
24	629	640	635	11	56	587	572	580	-15
25	672	635	654	-37	57	663	676	670	13
26	576	671	624	95	58	645	680	663	35
27	541	610	576	69	59	600	695	648	95
28	578	638	608	60	60	719	766	743	47
29	611	616	614	5	61	549	648	599	99
30	558	640	599	82	62	620	701	661	81
31	569	610	590	41	63	642	685	664	43
32	658	658	658		64	692	735	714	43
				mean yr gain					52
									53
									yr gain

APPENDIX C

Table 1E

Social Studies Scale Scores

STUDENT ID	EXPERIMENTAL GROUP				STUDENT ID	CONTROL GROUP			
	SCALE SCORE 1995	SCALE SCORE 1996	MEAN	YEAR GAIN		SCALE SCORE 1995	SCALE SCORE 1996	MEAN	YEAR GAIN
1	535	565	550	30	33	474	563	519	89
2	499	636	568	137	34	489	515	502	26
3	562	789	676	227	35	504	617	561	113
4	531	642	587	111	36	499	590	545	91
5	567	642	605	75	37	742	632	687	-110
6	631	687	659	56	38	542	622	582	80
7	597	632	615	35	39	582	618	600	36
8	624	680	652	56	40	581	639	610	58
9	589	740	665	151	41	540	612	576	72
10	620	667	644	47	42	572	654	613	82
11	480	624	552	144	43	489	617	553	128
12	653	664	659	11	44	545	635	590	90
13	690	644	667	-46	45	605	692	649	87
14	742	628	685	-114	46	553	646	600	93
15	501	584	543	83	47	609	664	637	55
16	586	705	646	119	48	556	577	567	21
17	672	791	732	119	49	612	732	672	120
18	548	596	572	48	50	545	647	596	102
19	532	654	593	122	51	600	791	696	191
20	588	635	612	47	52	615	610	613	-5
21	573	699	636	126	53	742	791	502	49
22	591	634	613	43	54	544	732	561	188
23	528	542	535	14	55	742	678	545	-64
24	582	692	637	110	56	556	725	687	169
25	561	626	594	65	57	645	655	582	10
26	408	620	514	212	58	690	668	600	-22
27	521	653	587	132	59	563	689	610	126
28	509	607	558	98	60	690	791	576	101
29	535	642	589	107	61	533	702	613	169
30	531	641	586	110	62	580	789	553	209
31	498	618	558	120	63	595	677	590	82
32	690	678	684	-12	64	582	680	649	98
				mean yr 81 gain					mean yr 79 gain

APPENDIX D

TCAP CONTENT VALIDITY AND RELIABILITY

TCAP Content validity

The content validity of the TCAP is good and there are four reasons for these findings:

1. The original test committee consisted of 35 Tennessee educators who selected CTB/McGraw-Hill over two other bidders. An important selection criteria was the degree of curricular match between the proposed tests and the Tennessee curricula.
2. The criterion referenced test items were written by Tennessee teachers to intentionally match the Tennessee curricula in language arts and mathematics. There was a high correlation between the criterion referenced items and the norm referenced items.
3. The norm referenced test items came from the same item bank used to build achievement tests that are marketed word-wide by the publisher, CTB/McGraw-Hill.
4. The TVAAS calculations provided sufficient relationship between the TCAP norm-referenced tests and the Tennessee curricula, because gains demonstrated across the state would simply not exist if the tests and the curricula were not sufficiently related.

TCAP Reliability

The reliability of the TCAP is also good because achieving the necessary reliability for a given test is a matter of applying appropriate technical expertise to the test construction process. The gains demonstrated across the state of Tennessee would not exist if the tests and the curricula were not sufficiently related.

Tennessee value-added assessment system is a statistical process that provides measures of the influence that school systems, schools, and teachers have on indicators of student learning. TVASS uses scaled scores from the norm-referenced items on the Tennessee Comprehensive Assessment Program (TCAP), which was first implemented in 1989-1990 school year. The norm-referenced part of the TCAP, the CTBS/4, is a nationally normed test mandated in Tennessee for grades two through eight and grade ten. It assesses skills in reading, language, math, science, and social studies. The norms for the test were established in 1989. According to Bratton, Horn and Wright (1996) review of customized standardized tests in Tennessee revealed the norm-referenced module was specifically created so that it had proper statistical characteristics of reliability, adequate floors and ceilings, and articulation across test levels.

To insure test validity, the Educational Improvement Act mandates that fresh, non-redundant tests be used each year. This means that only a small percentage of the items

on the CTBS/4 can be carried over from one year to the next. Moreover, rigorous sanctions are provided in the EIA for any breach of test security. The relevance of the test to Tennessee's academic program may be inferred from the tendency of scores across the state to approximate or slightly exceed the national norms in all subject areas and all grades.