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STUDY OF THE AFFECTS OF INCLUSION ON THE ACADEMIC
PROGRESS OF REGULAR EDUCATION STUDENTS

by
Tracy Alcoy-Clouser

A Thesis

Submitted in partial fulfillment of the requirements of the Master of Arts
Degree in the Graduate Division of Rowen College
1996

Approved by

Professor

Date Approved 6/20/96

ABSTRACT

Tracy Alcoy-Clouser

Study of the Affects of Inclusion on the Academic Progress of Regular

Education Students

1996

Dr. J. Klanderma

Seminar In School Psychology

It was the goal of this study to evaluate the effectiveness of the Team Approach to Mastery (TAM) program on the Metropolitan Achievement Test (MAT) scores of regular education students in the TAM classroom. The hypothesis suggested that the TAM students would do as well as or better than the students in the NON-TAM classroom.

This study observed the progress of twenty - nine fourth grade students that live in a rural area with an urban school population. A pretest posttest design was used. The dependent variable was the MAT, and the TAM program was the independent variable.

An analysis of the t-scores revealed a significant difference on the MAT between the TAM and Non - TAM students. An interpretation of these results would indicate that the TAM program had a positive affect on the academic progress of the regular education students participating in the experimental group.

MINI-ABSTRACT

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Dr. J. Klanderma

Seminar In School Psychology

This study evaluated the effectiveness of the Team Approach to Mastery (TAM) program on the Metropolitan Achievement Test (MET) scores of regular education students in the program. The hypothesis suggested that TAM students would do as well as or better than Non - TAM students. An interpretation of the results indicates that the TAM program had a positive affect on the scores of the regular education students.

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I decided to further my education, however, I did not know how much I would need the support of my family. There were untold hours of baby-sitting, by my parents, Jeanette and Wayne, sisters, Kathy and Joy and friends. More than that, were the countless days of support from my husband Jeff. Thank you all for helping me reach this goal, I love you. My thanks also go out to the supportive faculty and administration where this study was completed, especially Tracey and Michelle.

I dedicate this to my children, Shelby and Darby. I hope they will one day see the value of a good education.

Chapter One The Problem

The Need

The need for an examination of teaching techniques regarding the education of special needs students is brought about by the expectations of the Federal Government. The federal government sets codes for the state government to follow. The State Department of Education in turn, interprets the codes and enforces them to the best of their ability. One method of enforcement is the monitoring of schools throughout the state.

In a recent monitoring of New Jersey Schools, it was observed that there was a need for more inclusion of special education students in regular education classes. It was found that special education was being used as a placement, and not a treatment. According to the Chapter 28, Title 6, New Jersey Administrative Code 6:28-2.10, for Special Education, students with

educational disabilities shall be placed in the least restrictive environment, to the maximum extent appropriate, with children that are not educationally disabled. They have the right to be with non handicapped peers to the highest extent possible.

Inclusion is expected when ever possible, and will mean changes for regular education students. No longer will the classified students be kept separated from their regular education peers. It is this wave of change in education that introduces *the need* to examine a method of educating regular education and special education students, together. It is important to monitor the different approaches to inclusion so the best possible methods can be implemented statewide. If special education students are to be taught in an environment that is least restrictive, then so too should regular education students be given the opportunity to learn in the most constructive way possible. This study hopes to, in some small way, make gains toward fulfilling this need.

The Purpose

The Team Approach to Mastery is a program of inclusion that is being implemented in several school districts. The purpose of this study is to examine the success or failure of the Team Approach to Mastery program,

regarding the scores received by regular education students on the Metropolitan Achievement Test.

The Hypothesis

Regular education students that participate in the Team Approach to Mastery program, will do as well as, or better than their peers, that did not participate in the Team Approach to Mastery program, on the Metropolitan Achievement Test.

Theory

In the early 1990s, a case was taken to a New Jersey court, regarding a child's mainstreaming in a particular school. The family surname is Oberti. The parents in the case wanted their child, with Down Syndrome, to attend regular, public school. The decision did not endorse inclusion, but it did create some important implications. Greater efforts are to be taken by schools to mainstream disabled students, and if they can not, they must be able to explain why. School districts must justify restrictive placement. Also, academic progress is no longer considered the only, or even the most important reason for placement outside the regular classroom.

As a result of the Oberti case, two things must be determined. First, it is important to find if the student can be educated in the regular classroom satisfactorily. Second, if the student can not be taught in a regular education setting, it must be shown, that the school has made every effort to mainstream.

To achieve the first requirement, there are three areas of focus. First, they look at what steps the school has taken to try to include the child in a regular classroom. Second, a comparison of the educational benefits the child will receive in a regular classroom and the benefits the child will receive in the segregated, special education classroom. The third area of focus is to determine the possible negative effect the child's inclusion may have on the education of the other children in the regular classroom.

The second requirement is to show that the student placed in a special education class, is mainstreamed to the maximum extent possible. To do this, the district must provide a continuum of alternative placements.

The Center for Developmental Disabilities, The University Affiliated Program of New Jersey, has listed eight elements for the rationale for integration.

1. Facilitates the development of positive attitudes by nondisabled peers towards students with disabilities which prepares them for an adult society in which diverse people are expected to live and work together. (Voeltz, 1980; 1982)

2. Provides the opportunity for nondisabled peers to master skills which are needed to interact constructively with students who have disabilities. (Forest, 1987; Stainback & Stainback, 1988; Strain, Odom, & McConnell, 1984; Vandercook, et. al., 1988; Voeltiz, 1982)

3. Allows for the development of a wide range of social relationships between students with disabilities and their nondisabled peers. (Brown, et. al., 1989; Strully & Strully, 1985)

4. Allows students with disabilities to learn skills within the natural environments in which they will be used. (Brown, et. al., 1989)

5. When educational programs and supports which are tailored to meet the unique needs of the student are provided within integrated settings, students with disabilities tend to learn more than they do in segregated settings. (Brinker & Thorpe, 1983, 1984; Madden & Slavin, 1983)

6. "Regardless of race, class, gender, type of disability, or its onset, the more time spent in integrated public school classes as children, the more

people with disabilities achieved educationally and occupationally as adults.”
(Ferguson & Asch, 1989, p.124)

7. Avoids the detrimental effects of segregation which often occur when students with disabilities are placed in separate, special classes and/or schools. (Stainback & Stainback, 1990)

8. The inclusion of all students in the mainstream of schools and communities is the “fair, ethical, and equitable thing to do.” (Stainback & Stainback, 1990)

The University Affiliated Program of New Jersey also listed strategy ideas for supporting students in regular classes. The ten items on the list are all stated clearly and are important, but number two stands out:

2. Team Teaching-

Two or more teachers, who sometimes have different areas of expertise(e.g., special education and general education), cooperatively teaching a class or unit.

This study will focus on team teaching as used in the Team Approach to Mastery (TAM) program. The TAM program was initiated in 1975, in Christiana, Delaware, and has been flourishing and gaining popularity ever since.

The TAM program was designed to integrate special education students. This team teaching approach eliminates the need for labels and avoids the hazards associated with labeling and putting children into categories. To achieve this goal, a regular education teacher and a special education teacher work together.

Class size in a TAM program consists of approximately 24-26 students. The student population includes eight special education students, children that are identified as educationally disabled. The students are placed randomly, to insure a broad spectrum of learning potential. The students are taught together, all day.

The students may be taught in small groups or individually, based on various diagnostic testing. At no time are the special education students singled out and taught alone. There is no labeling of regular education or special education teacher, or student.

Inservice is used as a means to keep the TAM teachers in touch with appropriate methods of management, effective instruction, and positive reinforcement strategies.

Parent participation is an important part of the program. A goal of the TAM program is to implement an effective, positive parent communication system. This includes daily reporting to parents.

Definitions

Educationally Disabled-A pupil who has been determined to be eligible for special education and or related services according to N.J.A.C. 6:28-3.5

Individualized Education Program (I.E.P.)-A written plan developed at a meeting according to N.J.A.C. 6:28-3.6 which sets forth goals and measurable objectives and describes an integrated, sequential program of individually designed educational activities and or related services necessary to achieve the stated goals and objectives.

Inclusion-The State of New Jersey, Department of Education refers to inclusion as a word to describe a deeper meaning for integration which addresses the position that all students “belong”. It refers to the inclusion of those who have been left outside and may be considered the first step in integration.

Integration-The State of New Jersey, Department of Education refers to integration as a broad term which refers to the opportunities for the student

with a disability to have access to, inclusion in, and participation in all activities of the total school community environment.

Mainstreaming-The practice of returning students with physical, intellectual, or emotional impairments to regular classrooms, for the purpose of academic instruction, after removing them from special, segregated learning environments.

Metropolitan Achievement Test-A standardized testing scale administered to elementary school students.

Monitoring-A comprehensive evaluation of school districts, regarding all aspects of education.

Regular Education-Educating students that have not been classified.

Special Education-Specially designed instruction to meet the educational needs of pupils with educational disabilities including but not limited to, subject matter instruction, physical education and vocational training.

Team Approach to Mastery-A teaching program where a regular education teacher and a special education teacher, function as a team to teach all children in an integrated setting.

Assumptions

This study assumes that all students that are reviewed have similar backgrounds, and are placed randomly. This study also assumes that the teachers involved have a similar teaching style, and will use like materials while following the curriculum, as well as refer to the manual when administering the achievement test. Another assumption is that the tests will be given during the same time frame.

Limitations

There are several limitations to this study. The results of this study apply only to fourth grade students. The teachers involved in the Team Approach to Mastery Program were trained by the program's originators, and had monthly contact with them for guidance. Also, the students attending school in this district come from diverse backgrounds. Many of the students have moved into the district from an inter city situation, and bring with them an urban classification, however, there is also a population of students that are classified as rural, because they have grown up in an agricultural environment.

Overview

The remaining chapters of this paper will take a more in-depth look at the research question presented in Chapter One. Chapter Two will review the literature related to mainstreaming, team teaching, and other related topics. Chapter three will contain information concerning the research design. It will discuss the instrument used and explain the population used to complete the study. Chapter four will review the results, and chapter five will discuss any future implications the results may lead to.

As Chapter One concludes, with a more clear understanding of the problem, Chapter Two prepares to bring to light, current literature and studies related to team teaching, inclusion, and other pertinent topics.

Chapter Two Literature Review

Contained in this chapter is a review of important research and pertinent information regarding the team teaching approach to inclusion. There are four sections that review six studies, closely related to this topic. First, will be a look at the various methods used to determine the progress of cooperatively taught classrooms. The second section will discuss the many approaches to team teaching. The third section will discuss the impetus for conducting studies on the team teaching approach to inclusion. The final section will be a summary containing major findings of this review.

Measuring the Progress of Students Taught in Cooperative Classrooms

Research studying the effectiveness of Team Teaching on the academic progress of participating students vary in regard to the methods of measurement used.

One such method was to use a combination of course grades and attendance records to provide data for a study. Lundeen and Lundeen, 1993, decided to use a comparison of previous grades in traditional classes to current grades in a cooperatively taught classroom. The California Test of Basic Skills was administered, but the results were not included in the analysis of their study. They note the reason for this as being the great challenge that standardized tests present to children with learning problems.

Walsh and Snyder, 1993, also used classroom grades as comparative data. However, they accompanied them with the results of a minimum competency test that was given to all ninth grade students. Absences and discipline referrals were also observed.

One study completed by Force and Schallhorn, 1993, used well known tests to measure the affects of their team teaching. They used Taxonomy of Educational Objectives: Affective Domain (Drathwohl, Bloom, and Masia); The Quality of School Life Scale (Epstein and McPartland); Nowicki-Strickland Locus of Control Scale (Nowicki, Strickland); and Learning Style Inventory (Dunn, Dunn, and Price). These tests measured cognitive and attitudinal changes.

Cooperative teaching in the Hiawatha Elementary School in Minneapolis, is monitored by administering curriculum-based measures. (CBM) These tests are given three times a year, and were developed by two of the four authors of this study. Self, Benning, Marston, and Magnusson also followed reading progress by using a weekly formative evaluation procedure.

To study the academic viability and effectiveness of the integrated classroom, Affleck, Madge, Adams and Lowenbran, 1988, used the Reading, Math, and Language subtests of the Woodcock-Johnson Psycho-Educational Battery (Woodcock and Johnson, 1977). These tests were administered individually to the special education subjects in the study, and the contrast group, in a pre and post test design. This was the first part of a three part study. The second study looked at the academic achievement of regular education students. A pre test, post test observation of the total battery of the California Achievement Test was used. The third and final aspect of this study deals with the cost of the integrated classroom model versus the resource room model. This third aspect does not have a bearing on this thesis, and will not be discussed.

The Team Approach to Mastery program focuses on the exceptional student. They used a wide range achievement test and a cognitive abilities test to evaluate the progress of the students involved in the program. Scores in Reading, Spelling, and Math were collected and monitored from 1975 to 1978. Pre and post Intelligence Quotients were also obtained for comparisons.

The Many Approaches To Team Teaching

Completed studies on Team Teaching have also been called Cooperative teaching, and Collaborative Teaching. No matter what it is called, it remains that a regular education teacher and a special education teacher are working together to educate both regular education and special education children. The methods to achieve this end vary, and will be discussed in this section.

In the six major studies discussed here, several approaches to team teaching have been taken. Collaborative Teaching as studied by Lundeen and Lundeen, 1993, place special education students in regular education classrooms for Social Studies, English, Science and Health. The students are taught and evaluated by both a regular and a special education teacher. Walsh and Snyder, 1993, also have a regular and special education teacher

working together. They describe cooperative teaching as “an educational approach in which general and special educators work in a co-active and coordinated fashion to jointly teach academically and behaviorally heterogeneous groups of students in educationally integrated settings.” (Bauwers, Hourcade, and Friend, 1989, p.18)

In a study by Force and Schallhorn, 1993, they describe team teaching as reverse mainstreaming. Instead of pulling the special needs student out of their special education classroom for various lessons, they slowly worked the special education teacher and students into the regular education classroom. By following Merenblooms teaming model, they went through three phases to introduce change. Phase one took the regular education teacher to the special education class twice a week for three to five weeks, to teach discipline subjects to the special education students. Phase two took the special education students and teacher to the regular education classroom with out the regular education students being there. The purpose for phase two is to get the special education students acclimated to the new environment. This went on for two to four weeks. Phase three had both sets of students being taught by both teachers as equal partners.

The Cooperative Teaching Project in Minneapolis Public Schools was studied by Self, Benning, Marston and Magnusson, 1991. Their approach to cooperative teaching involves the regular education teacher, the special education teacher, the chapter one and the compensatory education teachers. The support teachers provide twenty-five minutes of supplemental reading/readiness instruction in small groups five days per week to students at great risk for academic failure. Speech/language clinicians provide twenty-five minutes of small group supplemental instruction three days per week to students with the most limited language skills.

The integrated Classroom Model, studied by Force and Schallhorn, 1988, sees team teaching as a regular education classroom with one third of the student population having special needs. The classroom teacher has had previous successful experience with special education students and is given a specific number of hours of help from a classroom aide each day.

The TAM program includes unidentified exceptional students in a regular education setting. No division of special education and regular education students is observable. There is a regular education and a special education teacher fully involved in all aspects of education for all children. There is joint planning and decision making.

The Need for Team Teaching

Studies to determine the effectiveness of the team teaching approach to inclusion have occurred for various reasons. Ultimately, the goal has been to improve the academic progress of students. However, other questions have arisen to lead researchers deeper into the examination of team teaching.

In a study by Lundeen and Lundeen, 1993, *Effectiveness of Mainstreaming with Collaborative Teaching*, the academic failure rate of special education students is the reason for concern. They believed that the poor performance of special education students in regular education classes and eventual lack of high school completion, could be avoided if team teaching were implemented.

Cooperative Teaching: An effective Model for All Students, is a study by Walsh and Snyder, 1993. Their reason for developing the study was a concern regarding the ability of regular education teachers to meet the needs of a diverse group of learning abilities, among which are mainstreamed special education students. They feel that regular education teachers, when dealing with special education, or students at risk, need to be more flexible with their approach to education. This, however, is a difficult concept to promote due to the broad and intense amount of training required to change the teaching

methods of an entire nation of regular education teachers. They would need to be taught and basically become special education teachers, to meet the needs of all children. Cooperative teaching could address the needs of regular and special education students.

Force and Schallhorn co authored *Reverse Mainstreaming, a Team Teaching Model for Integrative Education*. The major impetus for their project and investigation into the results of their project, came from an inservice they attended that was given by Elliot Merenbloom. The fact that change causes stress and that stress can have negative effects on all the people in the changing environment, caused Doug Force to think further on the topic. He wondered how the constant changing of the special needs student going back and forth between classes was effecting their education. They seem to be the most at risk students, yet they are enduring the most stress. To alleviate this stress, he decided to team up with another teacher and try the reverse mainstreaming discussed earlier.

The cooperative teaching project of the Minneapolis Public School District, was designed to better meet the needs of at risk students. The goal was to lessen dependence on pull out programs and improve the quality of instruction in the regular education program. They hoped to bring together

the resources of regular education and special education and focus on prevention of failure through increased support.

Integrated Classroom Versus Resource Model: Academic Viability and Effectiveness, a study by Affleck, Madeg, Adams, and Lowenbraun, 1988, was conducted to compare the Integrated Classroom Model to the use of a Resource center. They questioned the effectiveness of the Resource Center.

The TAM program was developed to help exceptional students in several ways. It allows teachers the opportunity to avoid using labels and putting children into categories. It also places exceptional and regular children together to work, which may contribute to higher self concepts and increased feelings of self worth. Overall, the goal of an increase in academic progress is obtained more easily because of the TAM program is focusing on all aspects of the students needs.

Summary

A consistent theme flows through the literature written on the topic of team teaching for inclusion. Regardless of the method of team teaching used, the affects remain constant. Students, be they special education or regular education, do as well as or better than they did in previous learning situations.

This outcome varied slightly from study to study, as the models of team teaching and focus group changed.

The primary concern in these studies has been the special education student. Any look at the success or failure of the regular education student seems to come as an aside. The need for improved education for special education students is real and the affects these new learning situations will have on ALL students is becoming more and more apparent, as is shown by the increasing number of current studies focusing on both groups of students.

Chapter Three Design of the Study

The Sample

The twenty - nine subjects in this study vary in age from nine to ten years, and are all in fourth grade. They attend public school in Camden County, New Jersey, and live in a rural area with an urban school population. Thirteen of the students are in the experimental group, being taught with the Team Approach to Mastery Program (TAM). Sixteen of the students are in the control group and are being taught in a standard regular education classroom, with one teacher.

The children were placed in each classroom by the building reading specialist after consultation with the Principal and Vice - Principal for verification of possible behavior problems. They had no prior knowledge of this study. The students were placed diversely to produce heterogeneous

classes and the best possible learning environment for all involved, based on sex, race and academic abilities.

Of the thirteen students in the TAM program, seven are female and six are male. Three of the females are Caucasian and four are African American. One male is African American, and five are Caucasian. In the control group, there are seven females and eight males. The females are broken down as two African Americans and five Caucasians. The males are represented by two African Americans and six Caucasians.

This study is based on data collection, and will not affect the subjects in any way. Therefore, consent regarding the students was only obtained from the superintendent of schools, for permission to collect data.

Design

To determine the effects of the independent variable, the Team Approach to Mastery program, on the dependent variable, scores on the Metropolitan Achievement Test, a pretest-posttest design was used. The pretest was taken in the third marking period of the students' Third Grade year. The posttest was given in the third marking period of their Fourth Grade year. One calendar year passed between tests, and of those twelve months, the experimental group received treatment for eight months.

Setting and Apparatus

The setting of the study was mentioned earlier in the subject section. Due to the nature of this study, data collection, no further information will be provided.

The apparatus used in this study to evaluate progress, is the Metropolitan Achievement Test (MAT). The MAT was developed by Irving H. Balow, Roger C. Farr, and Thomas P. Hogan. It was published by The Psychological Corporation of Harcourt Brace and Company of Sanantonio. The seventh edition was used.

Independent Variable

The independent variable in this study is the team teaching style used in the Team Approach to Mastery (TAM) program. The TAM program placed one special education teacher and one teacher certified in regular education, elementary or secondary, together, to implement the TAM program in all areas of its philosophy and its ten components.

The following ten components are adhered to by the TAM instructors to successfully educate the students participating in the TAM program.

I. Team Teaching

A. Parallel Teaching--Both teachers fully involved with students

- B. No observable division of special education and regular education students
 - C. Joint planning and decision making
- II. Centers Approach
 - A. Developmental
 - B. Basic Skills
 - C. Content
- III. Student--Parent Communication System
 - A. The Self-Manager
 - B. Reward Center
 - C. Alternative to Reward Center
 - D. Rules posted and behaviorally stated
- IV. Individualized Instruction
 - A. Materials used. Amount of independent student activity
 - B. Quantity of group activities. Number of students on task in group
 - C. Instruction based on needs of students
- V. Positive Approach
 - A. Frequency of Positive Reinforcement, take a sample
 - B. Frequency of Negative Reinforcement, take a sample

- VI. Testing Data and I.E.P.s
 - A. Pre and Post testing with standardized tests
 - B. Learning activities tied to I.E.P.s
- VII. Classroom Management
 - A. Physical Facilities--Use of space, child oriented room
 - B. Organized movement
 - C. Structure--Teacher Planning
- VIII. Inservice Training
 - A. Phase I- TAM/Behavior/Direct Instruction-Workshops/Staff Development
 - B. Phase II-New Team visitation to cadre classroom
 - C. Phase III-Cadre visitation to New Team's classroom
 - D. Phase IV-Repeat Phases I, II, III as needed
- IX. High Expectations
- X. Direct Instruction
 - A. Reading Mastery/Corrective Reading implemented
 - B. Other Direct Instruction programs implement

This next outline is taken from the Staff Development Manual of the TAM program. It describes the role of TAM teachers.

- I. **Staff Relationships - Teachers of a Tam program will:**
 - A. **Work cooperatively with classroom team members by:**
 1. **Sharing the classroom duties equally with the other teacher.**
 2. **Clearly defining the paraprofessional duties.**
 3. **Coordinating in - class objectives and sharing ideas and materials.**
 - B. **Develop an effective communication network among staff members that promotes consistency in program format and curriculum development.**
- II. **Educational Program - Teachers of TAM will:**
 - A. **Provide a classroom atmosphere that is conducive to the development of a positive self - concept for each identified and unidentified child.**
 - B. **Reinforce appropriate behaviors through a contingency management program or other positive reinforcement techniques.**
 - C. **Develop and continually modify a Individual Educational Plan for each student.**
 - D. **Teach developmental and content skills defined in the program curriculum.**
- III. **Parent Involvement - Teacher of a TAM will:**
 - A. **Provide parents with on going progress reports and support in using positive reinforcement at home.**
 - B. **Develop a parent program which includes:**

1. Open visitation for classroom observation
2. Parent conferences
3. Letter to parents at beginning of year to explain program.

IV. Instructional Materials - Teachers of a TAM will:

- A. Utilize the District adopted material: Reading Mastery and other Direct Instruction Programs.
- B. Use a variety of learning experiences to meet the needs of each student.
- C. Evaluate the effectiveness of new materials available.

Dependent Variable

The device used to measure the academic progress of the students in this study, is the Metropolitan Achievement Test (MAT). The MAT was developed by Irving H. Balow, Roger C. Farr, and Thomas P. Hogan. The seventh edition has been used, and it was published in 1994. The MAT is a standardized achievement test. After an overall introduction to the test and test taking rules by the instructor, the children continue on their own. In fourth grade, the children are responsible for reading directions in the test and choosing from the multiple choice answers provided. Once they choose the response they think is correct, they fill in the appropriate bubble on a corresponding answer sheet.

Procedure

The subjects in this study are receiving their fourth grade education as part of the Team Approach to Mastery program (TAM). The components and guidelines for TAM were provided earlier in this chapter. They describe how the students are taught, what contact the teachers have with the students, and the sequence of their day.

The Metropolitan Achievement Test (MAT) is administered to the students by their teachers. The students take the test together in the same room, and are timed. The teachers read the main set of directions to the class, and lead the class in practice questions. They are also available to answer basic questions during the test.

The MAT was administered to the students over the period of a week. The hours of school in which the tests were taken, fell between arrival to school, and lunch break.

Testable Hypotheses

Null Hypothesis

No difference will be found in academic progress between students in the Team Approach to Mastery (TAM) program, and students in the Non-TAM classroom.

HO: $M1=M2$

Legend: M1 = Score of the students in TAM on the Metropolitan Achievement Test (MAT).

M2 = Score of the students in Non-TAM classroom on the MAT.

Alternate Hypothesis

The mean score of the students in the TAM program will exceed the mean score of the students in the Non-TAM classroom.

H1: $M1 > M2$

Legend: M1 = Score of students in TAM in the MAT.

M2 = Score of the students in he Non-TAM classroom on the MAT.

Analysis

A t-test will be used to evaluate the difference between the pretest and posttest scores on the Metropolitan Achievement Test (MAT). The t-test will allow the findings to be judged as , *as large as, or larger than*, the score shown to be true in the null hypothesis.

Summary

In closing, it is intended that the measures used in this study will provide the information necessary to establish any difference that may occur in the two classes that are being observed.

The scores on the MAT will be compared and charted to indicate the amount of growth that each student has made. Further more, the scores will be analyzed to show the growth of the students in the Team Approach to Mastery class, overall, compared to the control group.

Chapter Four Results

As stated in Chapter Three, the hypothesis for this study is as follows; The mean score of the students in the Team Approach to Mastery (TAM) program, will exceed the mean scores of the students in the Non - TAM classroom.

$$H1 : M1 > M2$$

The results of this study have been summarized and are presented in Tables 4.1 and 4.2. The data supports the idea that the null hypothesis,

$$HO : M1 = M2$$

be rejected in favor of the alternate hypothesis for the experimental group.

Analysis of the t - scores in Tables 4.1 and 4.2, reveal a significant difference in scores on the Metropolitan Achievement Test (MAT) between the TAM and Non - TAM students.

Comparing the mean of the total battery from third grade to the mean of the total battery from fourth grade, for both groups, is shown in chart 4.1. The results further support the use of the TAM program. The mean for the total battery taken by the TAM group increased eleven points from third grade to fourth grade. However, the mean from the total battery taken by the Non TAM students from third grade to fourth grade decreased by 5.37 points.

As seen in Chart 4.2, TAM students increased performance in four out of five sub tests of the MAT. These areas are Reading Vocabulary, Reading Comprehension, Math Procedures and Language. The subtest that showed no change was Math Concepts. In contrast, the Non TAM students showed growth in only one subtest, Language.

Table 4.1
t tests for Paired Samples
TAM

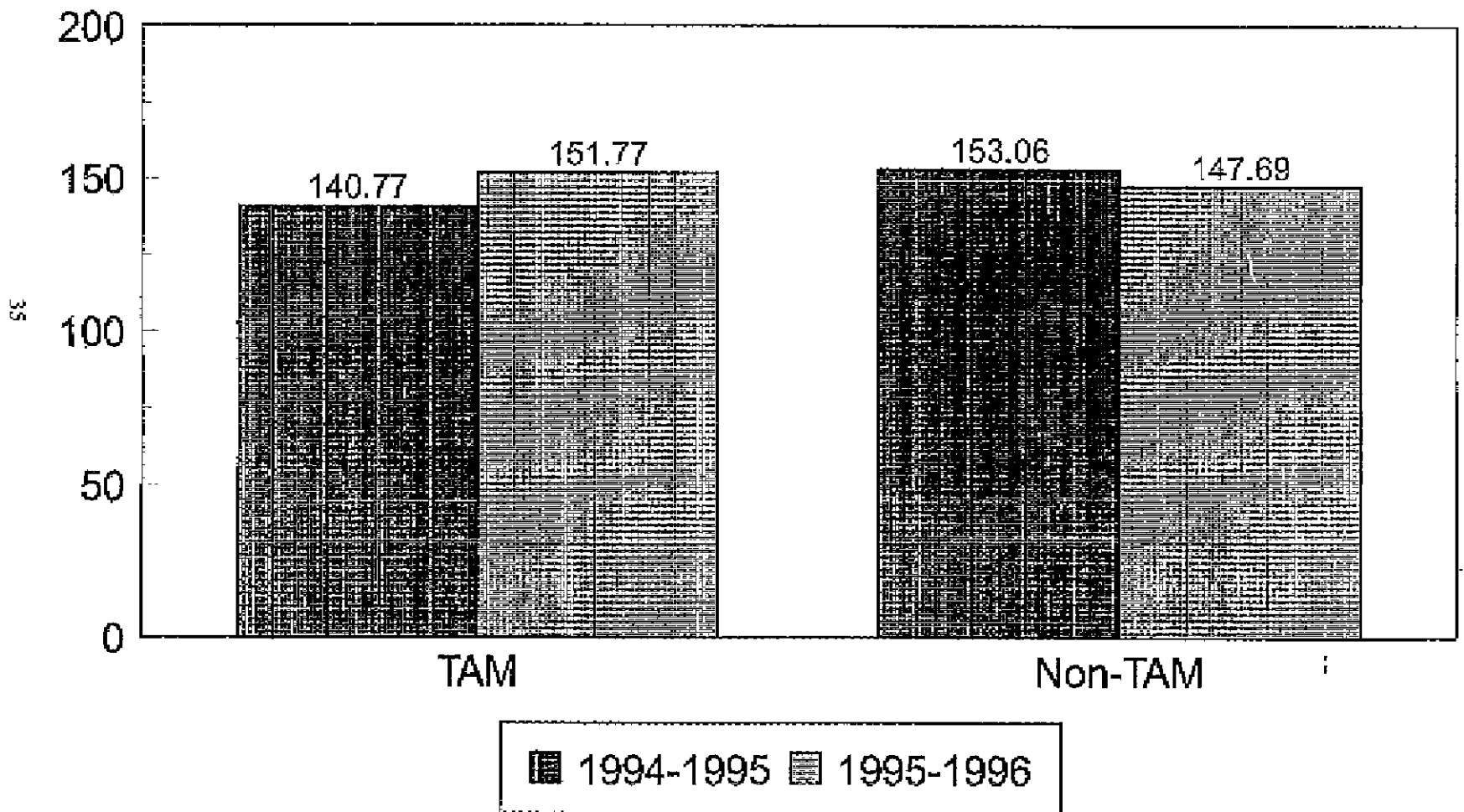
Variable	Number of Pairs	Corr.	2-Tail Sig.	Mean	SD	SE Mean
Total Battery Third	13	.847	.000	140.7692	29.589	8.207
Total Battery Fourth				151.7692	25.266	7.007
Paired Differences						
<u>Mean</u>	<u>SD</u>	<u>SE of Mean</u>	<u>t-value</u>	<u>df</u>	<u>2-tail sig.</u>	
-11.0000	15.743	4.366	-2.52	12	.027	
95% CI (-20.513, -1.487)						

Table 4.2
t-tests for Paired Samples
Non TAM

Variable	Number of pairs	Corr.	2-tail Sig.	Mean	SD	SE of Mean
Total Battery Third	16	.883	.000	153.0625	22.831	5.708
Total Battery Fourth				147.6875	25.332	6.333
Paired Differences						
<u>Mean</u>	<u>SD</u>	<u>SE of Mean</u>	<u>t-Value</u>	<u>df</u>	<u>2-tail Sig.</u>	
5.3750	11.893	2.973	1.81	15	.091	
95%CI (-.962, 11.712)						

Metropolitan Achievement Test Comparison of Total Battery Mean Scores

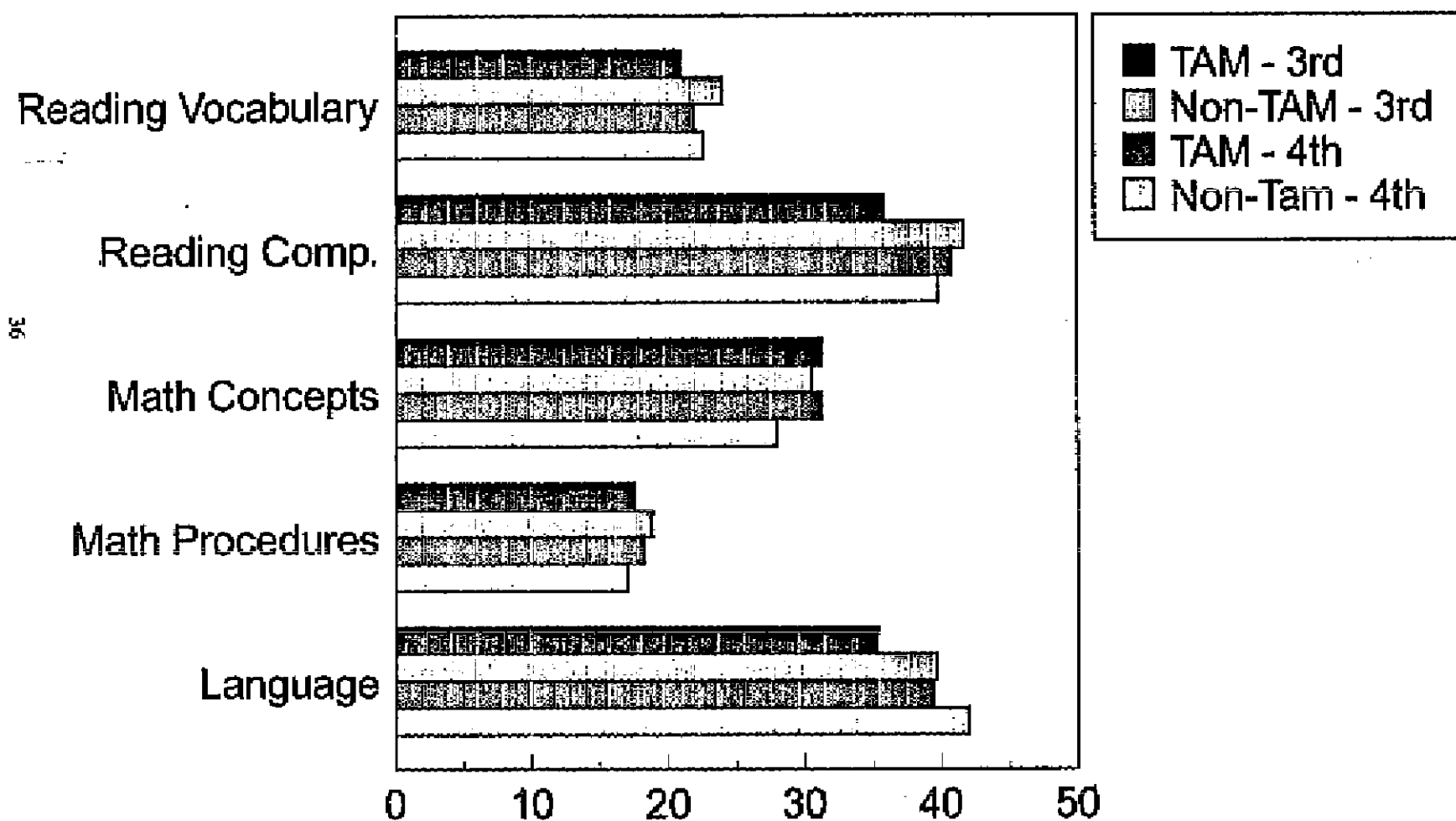
Chart 4.1



Metropolitan Achievement Test

Comparison of Mean Scores

Chart 4.2



Summary

The results of the data analysis presented in this chapter show that the growth of the students in the TAM program exceeded that of the Non TAM students. It appears that the use of TAM techniques have had a positive effect on the students' achievement scores.

Chapter Five Summary and Discussion

Summary

It was the goal of this study to evaluate the effectiveness of the Team Approach to Mastery (TAM) program on the Metropolitan Achievement Test (MAT) scores of regular education students in the TAM classroom. The hypothesis suggested that the TAM students would do as well as or better than the students in the Non-TAM classroom. In Chapter Two, studies were cited that showed similar team teaching situations having a positive impact on both special and regular education students.

The design of the study was presented in Chapter Three. The study observed the progress of twenty-nine students in a pretest posttest design. The dependent variable was the MAT, and the independent variable was the TAM program.

An outcome of the design presented in Chapter Three, was the results that appear in Chapter Four. An analysis of the t-scores reveal a significant difference in scores on the MAT between the TAM and Non-TAM students. An interpretation of these results would indicate that the TAM program had a positive affect on the academic progress of the regular education students participating in the experimental group.

Conclusions

Based on the results seen in Chapter Four, this conclusion can be reached. The data supports the idea that the null hypothesis, $H_0 : M_1 = M_2$ be rejected in favor of the alternate hypothesis for the experimental group. The alternate hypothesis, $H_1 : M_1 > M_2$ is proven.

Discussion

Based on the outcome of this experiment, I believe that the TAM program would be beneficial to children in the elementary school setting. The children already participating in the program would also benefit if the program were to follow them through their schooling. The reasoning behind this is multidimensional. One of the eight elements for the rational for integration as listed by the Center for Developmental Disabilities, The

University Affiliated Program of New Jersey, is that integration should facilitate the development of positive attitudes by non disabled peers towards students with disabilities which prepares them for an adult society in which diverse people are expected to live and work together.(Voeltz, 1980; 1982)

The students in the TAM classroom work day in, and day out, side by side with special needs peers. They develop friendships, not doubts. They support each other, instead of using harsh words and deeds to ridicule. There are seven other elements in the rationale for integration, that are provided in Chapter One, and I believe that they are all met within the TAM program.

Not only do the students in the TAM classroom improve socially, they improve academically. The students in the TAM program achieved higher scores on the MAT, than their peers in the Non - TAM classroom. This success could promote an inner feeling of self worth and pride. Not to mention the future success that can be predicted for children that are doing well in school.

As stated in Chapter Two, one reason for studies in this area of education is the concern over the ability of regular education teachers to deal with special education children. Regular education teachers need intense training to become more flexible with their approach to teaching. Another

concern was the fact that change causes stress for the children. The constant moving from special education classroom to regular education classroom, not only causes stress for the special needs student, but it also causes stress for the regular education students and the teacher. Ultimately, it is the goal of all education systems to find and implement the most effective method to educate each and every child. The TAM program has shown itself to be a productive and worthwhile approach to teaching. It addresses the need for a Special Education teacher and it eliminates the stress of moving from room to room. While meeting these two needs, it is also helping the students to become high achievers.

Inclusion is happening here, and now. Special Education students are to be placed in the least restrictive environment, to the maximum extent appropriate, with children that are not educationally disabled. The TAM program is a successful approach to maintain high levels of quality education for all segments of the academic spectrum.

Implications For Further Research

- 1.) This study could be extended to include the other existing fourth grade Team Approach to Mastery (TAM) classrooms in the district. This would allow comparison to be made between a wider range of students.

Researchers could see if the results apply similarly to a different set of children.

2.) This study could also be expanded to include special education students. A study of the academic growth of the special education students that participated in the TAM program would help researchers to determine the success or failure of the program for special education students.

3.) A repeat of this study could be applied to grade levels other than fourth. The same procedures could be followed to produce information that would allow the growth of students in third and fifth grade to be analyzed.

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