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The effect of collaborative teaching on the academic achievement, incidence of discipline referrals, and attitudes toward school of fourth, fifth, and sixth grade regular and special education students

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THE EFFECT OF COLLABORATIVE TEACHING ON THE ACADEMIC ACHIEVEMENT, INCIDENCE OF DISCIPLINE REFERRALS, AND ATTITUDES TOWARD SCHOOL OF FOURTH, FIFTH, AND SIXTH GRADE REGULAR AND SPECIAL EDUCATION STUDENTS

by
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ABSTRACT

Papa, Kathleen N. The Effect of Collaborative Teaching on the Academic Achievement, Incidence of Discipline Referrals, and Attitudes Toward School of Fourth, Fifth, and Sixth Grade Regular and Special Education Students, 2002.
Thesis Advisor: Dr. Louis Molinari
Elementary Education

The purpose of this study was to determine if collaborative teaching had a positive effect on the academic achievement, incidence of discipline referrals, and attitudes toward school of fourth, fifth, and sixth grade regular and special education elementary school students.

The report card grades and incidence of discipline referrals (demerits, detentions, and suspensions) from the first two marking periods of the 2000 -2001 school year (prior to collaborative teaching) were averaged and compared the report card grades and incidence of discipline referrals of the first two marking periods of the 2001 -2002 school year of fourth, fifth, and sixth grade students currently enrolled in collaboratively taught classrooms. A t-test for non-independent samples was used to analyze the compiled data.

The Distribution of T table at the point 05 probability level was then utilized to determine whether or not the t-value was inside of allotted range, indicating statistical significance had not been achieved, and that acceptance of the null hypothesis was indicated, or outside of the allotted range, indicating that statistical significance had in fact, been achieved and rejection of the null hypothesis was in order.

The fourteen major hypotheses stated that there would be no significant effect of collaborative teaching on the academic achievement and incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education students enrolled in cooperatively taught classrooms. Statistical significance was achieved in four of the fourteen hypothesis generated.

MINI-ABSTRACT

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The fourteen null hypotheses generated stated that collaborative teaching would not have an effect on the academic achievement or incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education students in collaboratively taught classrooms.

Ten of the fourteen null hypotheses were accepted, indicating that collaborative teaching did not cause a statistical difference in the academic achievement and incidence of discipline referrals in these students. This was perhaps due to the fact that this was the first year collaborative teaching was implemented in the district, and that half of the collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program.

Four of the null hypotheses were rejected, indicating that a statistical difference had been acheived in those instances. This effect may have been a result of the effects of the collaborative teaching program, as well as the character education program implemented in the district.

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CHAPTER ONE

SCOPE OF THE STUDY

Due to demographic changes in the United States, students from differing cultural backgrounds and economically deprived families are comprising an increasingly larger portion of the student population. Consequently, teachers are encountering an increasingly representative student body with a greater variety of significant learning and behavior problems formerly addressed in special education classrooms (Bauwens and Hourcade, p. 19). As educators struggle to find the most effective means of meeting the educational needs of these students, a system of trial and error has emerged which has come to place the traditional working relationship between general and special education under increasing attack (Bauwens, Friend, and Hourcade, p. 17).

For example, the disjointed arrangement of pulling special needs students out of the regular classroom to attend instruction with special education teachers who possess specialized skills has not produced the expected results in academic, social, or vocational areas. To begin, several major studies have shown that it is difficult to classify children accurately, and that the classification systems for placing students in special programs are seriously flawed (Baker, Walberg, and Wang, p. 33). Furthermore, students do not tend to generalize the skills and knowledge learned in pull out settings to other areas of instruction, thus loosing the ground they gained by leaving the classroom once they have returned. Finally, the attached stigmatism of having to leave the regular classroom for special education services may often bring humiliation and a loss of self-esteem to the individuals in question.

A recently proposed method to solve the problems created by maintaining two educational systems is to merge special and regular education into one unified system of regular education structured to meet the needs of all students. (Bunch, Stainback, and Stainback, p. 15). In fact, many experts such as Stainback and Stainback have stated that all

students learn better within a single system approach, instead of a system whereby general and special education services are separated (Elliot and McKenney, p. 12).

Inclusion, or the full integration of students with disabilities, assumes that all children belong in chronologically, age appropriate, regular classroom settings. Inclusive classrooms start with a philosophy that all children belong and can learn in the mainstream of school and community life. Diversity is valued, because it is believed that diversity strengthens the class, and offers all its members greater opportunities for learning. In fact, inclusion deliberately promotes the concept that the community, like the school, is comprised of many types of individuals, each with unique characteristics and abilities, thereby preparing the students for real life, human encounters after they leave the educational arena (Inclusion - A Teacher's Guide AGH Associates, Inc., p. 16).

One form of inclusion rapidly growing in popularity is collaborative teaching, whereby a general and special educator teach heterogeneously grouped students simultaneously in a general education setting. To date, little information is available to demonstrate that co-teaching is an effective strategy for any particular group of students with disabilities, or for students as a whole. A few studies (Harris et al, 1997) have shown that students prefer co-taught classrooms, however far more information is needed to make informed decisions about committing to collaborative teaching as a service delivery approach (Cook, Friend, and Reising, p 37). For while many experts believe that the benefits of collaborative teaching are great, a final determination has yet to be made concerning the academic significance of this approach.

STATEMENT OF THE PROBLEM

Could it be that collaborative teaching will have a positive effect on the academic achievement, incidence of discipline referrals, and attitudes toward school of fourth, fifth, and sixth grade regular and special education elementary school students?

PURPOSE OF THE STUDY

The purpose of this study was to determine if collaborative teaching has a positive effect on the academic achievement, incidence of discipline referrals , and attitudes towards school of fourth, fifth, and sixth grade regular and special education elementary school students.

SPECIFIC HYPOTHESES

In order to investigate the problem of this study, the following general hypotheses, along with a number of sub-hypotheses, were generated:

General Hypothesis 1. There will be no significant effect of collaborative teaching on the academic achievement of fourth, fifth, and sixth grade regular and special education elementary school students as measured by a comparison of their report card grades from last year in non collaboratively taught classrooms, to this year in collaboratively taught classrooms.

Sub Hypothesis 1a: There will be no significant effect of collaborative teaching on the academic achievement of fourth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1b: There will be no significant effect of collaborative teaching on the academic achievement of fifth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1c: There will be no significant effect of collaborative teaching on the academic achievement of sixth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1d: There will be no significant effect of collaborative teaching on the academic achievement of fourth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1e: There will be no significant effect of collaborative teaching on the academic achievement of fifth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1f: There will be no significant effect of collaborative teaching on the academic achievement of sixth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

General Hypothesis 2: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2a: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2b: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fifth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2c: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of sixth grade regular education elementary school students

as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2d: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2e: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fifth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2f: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of sixth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

METHOD OF STUDY

Two hundred twenty-four fourth, fifth, and sixth grade elementary school students at Fountain Woods Elementary School in Burlington Township, New Jersey involved in collaboratively taught classrooms were studied. Out of those two hundred twenty-four students, seventy-five were classified as special education students, forty of whom were classified as having specific learning disabilities, six listed as having other health impairments, thirteen with multiple disabilities, seven with speech/language deficits, and three students each being classified as visually impaired, emotionally disturbed, and having a traumatic brain injury.

The report card scores of these collaboratively taught students in language arts, social studies, math and science from the first two marking periods of the 2000-2001 school year (before collaborative teaching was implemented) were gathered and averaged to form one

composite academic average for each individual student for that school year. Then, these same students scores' in language arts, social studies, math and science from the first two marking periods of the 2001-2002 school year (in which the students **were** involved in collaboratively taught classrooms) were gathered and averaged to form a composite academic average for each individual student for that school year. The two sets of averages (by grade level) were entered into a program for t-tests for non-independent samples which produced, among other information, the t-value and degrees of freedom for each hypothesis. Finally, the Distribution of T chart at the .05 probability level was utilized to determine a range for each particular t-value calculated, and consequently whether or not a statistical significance had in fact been achieved for both regular and special education students in each grade level, and for each hypothesis generated.

The incidence of discipline referrals (demerits, detentions, and suspensions) of these students from first two marking periods of the 2000-2001 school year (before collaborative teaching was implemented) and the first two marking periods of the 2001-2002 school year (in which the students **were** involved in collaborative taught classrooms) were also studied and compared to determine if collaborative teaching was beneficial in reducing the incidence of discipline referrals of these students. A t-test for non-independent samples was again utilized in a similar fashion as above to determine the t-value and degrees of freedom for each hypothesis. A range for each particular t-value was again calculated from the same Distribution of T chart mentioned earlier (again at the point five probability level) to determine whether or not a statistical significance had in fact been achieved for each hypothesis generated.

INSTRUMENTATION

A comparison of the report card grades and incidence of discipline referrals (demerits, detentions and suspensions) from the first and second marking periods of the 2000 -2001 school year (prior to the implementation of collaborative teaching) to the first and second marking periods of the 2001 - 2002 school year (after the implementation of collaborative teaching) was made of students currently enrolled in collaborative classrooms to see if

collaborative teaching had a positive effect on the academic achievement and behavior of fourth, fifth, and sixth grade general and special educations students. A t-test for non-independent samples was utilized to determine the t-value and degrees of freedom for each hypothesis so a range of t could be formulated. It was then determined from the Distribution of T chart (again using the .05 probability level) whether a statistical significance was obtained and consequently whether each hypothesis should be accepted or rejected.

Furthermore, the Minnesota School Attitude Survey (Ahlgren, 1983) Upper Form (Educational Testing Service Tracking Number: TC012400) was administered to determine these students' attitudes toward school in general. A survey was also administered to the collaborative teaching staff to formulate their impressions about the effectiveness of the program.

LIMITATIONS OF STUDY

This study only investigated the possible effects of collaborative teaching on students in one elementary school. Therefore, results may not be able to be generalized to a larger population of students. Furthermore, since this was not a longitudinal study, general data collected was gathered only for the present and previous school year. This may also serve as a limiting factor. Furthermore, improvements in grades and discipline referrals may be due to many other factors besides collaborative teaching, such as maturation of the students from one school year to the next, and the character education program (The Giraffe Program) implemented at Fountain Woods Elementary School.

ORGANIZATION OF THESIS

This thesis is divided into five main chapters. Chapter one includes the scope of the study, statement of the problem, purpose of the study, general hypotheses and sub hypotheses generated, method of study, instrumentation utilized, limitations of the study, definition of significant terms, and organization of the thesis.

Chapter two presents a review of the pertinent literature, which includes a genesis of the

origins of collaborative teaching, the possible benefits of collaborative teaching on individuals with and without disabilities, and a description the different methods of collaborative teaching presently utilized.

Chapter three describes the study in detail, including a description of the setting, population, and sample, the type of data collected, instruments utilized, and scoring procedures employed to analyze the data obtained.

Chapter four presents and analyzes statistical arguments which support or reject the hypotheses, while chapter five summarizes the findings of the preceding chapters, draws conclusions, and makes recommendations for further study.

DEFINITION OF TERMS

alternative teaching - a method of collaborative teaching where one teacher works with a small group of students to pre-teach, reteach, supplement, or enrich, while the other instructs the large group

collaborative teaching - an instructional delivery approach in which a classroom teacher and a special education teacher share responsibility for planning, delivering, and evaluating instruction for a heterogeneous group of students, some of whom have exceptional needs, within the context of a single classroom.

grazing - a method of collaborative teaching in which one teacher stands in front of the room providing explanation or instruction, while the other teacher moves from student to student

individualized education plan - (IEP) written document required by P.L. 94-142 for every child with a disability; includes statements of present performance, annual goals, short-term instructional objectives, specific educational services needed, relevant dates, regular education program participation, and evaluation procedures; must be signed by the parents as well as educational personnel.

inclusion - refers to the meaningful participation of students with disabilities and other special needs in general education classrooms and programs

least restrictive environment - the educational setting in which a child with disabilities can receive an appropriate education which is most like the regular classroom

one teach, one assist - a method of collaborative teaching whereby both teachers are present, however one (usually the general educator) takes the lead

parallel teaching - a method of collaborative teaching in which the general and special educator jointly plan instruction, but each delivers it to half of the group or class

Public Law 94 - 142 - Individuals with Disabilities Education Act - legislation which states that "all children with disabilities between the ages of three and twenty-one, regardless of the type or severity of their disability, shall receive a "free, appropriate public education which emphasizes special education and related services designed to meet their unique needs".

station teaching - a method of collaborative teaching in which the general and special educator divide the content to be delivered, each taking responsibility for a portion of it

students with behavioral disorders - individuals who have adequate intelligence yet demonstrate inappropriate school behavior which may manifest itself as disobedience

students with communication disorders -individuals who possess speech and language impairments such as disorders of articulation, voice, and fluency, and/or difficulties in receptive or expressive language

students with learning disabilities - individuals with adequate intelligence who encounter difficulty in specific school subjects due to difficulty processing information and utilizing poor strategies for learning

students with mild mental retardation- individuals who have impaired general aptitude for learning. Must have impaired adaptive behavior in two or more of the following skill areas: communication, self-care, social skills, self-direction, and/or functional academics

students with physical and/or health impairments - students whose health problems (such as cerebral palsy and epilepsy) affect school performance due to excessive absences

students with special needs - may include students with learning disabilities, mental retardation, behavioral disorders, communication disorders, autism, visual/hearing impairments, physical/health impairments, and traumatic brain injury

students with visual/hearing impairments - includes students identified as blind, low vision, deaf, and hard of hearing. These students are only considered disabled if their vision or hearing problems do not respond to treatment or aides such as eyeglasses.

supportive learning activities approach - a method of collaborative teaching which has the special education teacher overseeing activities such as partner or group learning or peer tutoring, while the general educator delivers the curriculum

team teaching - a method of collaborative teaching in which both teachers share the instruction of students. They may take turns leading a discussion, demonstrating a concept, etc.

t-test for non-independent samples - a parametric test of significance used to determine whether there is a significant difference between the means of two matched, or non-independent samples at a selected probability level.

CHAPTER TWO

REVIEW OF LITERATURE

Changing philosophies about the educational needs of students with disabilities, as well as evolving school reform and restructuring movements, have increased pressure for more use of inclusive practices in schools (Forest, Stainback, and Stainback, p. 81). For example, although special education is technically a subsystem of regular education, a dual system of education had been in effect throughout the first portion of our country's educational history. This began to change in 1954 with the court ruling of Brown versus the Board of Education, which stated that "separateness in education (of any kind) is inherently unequal;" and that by assigning some students to special education, teachers physically separate these individuals from their peers. The court went on to state that carrying the label of "special" may. further serve to separate these students psychologically in the minds of their teachers and peers as well (Cook and Friend, p 56).

Years later, Public Law 94-142 with its advocation of placing special education students in the "least restrictive environment," seemed to concur with that court's ruling, and educators were required to instruct students in general classrooms as frequently as the students' abilities would allow. As recently as 1993, the federal court again upheld the sentiment in Brown versus the Board of Education in the ruling of Oberti versus Clementon, whereby the rights of children with disabilities to be educated in regular classrooms with their non-disabled peers was reasserted (Baker, Walberg, and Wang, p. 44).

One result of these rulings has been that general education teachers, special education teachers, and other service providers have had to create ways to offer students their specialized instruction while helping them remain a part of the regular classroom community, which is referred to as inclusion. Collaborative teaching is one form of inclusion for delivering special and related services to students.

Collaborative teaching refers to 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 . Specifically, in collaborative teaching both general and special education teachers are simultaneously present in the general classroom, maintaining joint responsibility for specified classroom planning and instruction that occurs within that setting (Bauwens, Friend, and Hourcade, p.18).

The collaborative teaching model was initially developed in schools throughout the Pacific Northwest, and its roots can be found in the traditional hierarchy of services which advocates placement of all students in general education settings, as well as the practice of team teaching among general education teachers at the middle and high school levels.

A few quantitative studies are beginning to point to positive academic benefits for students in inclusive, especially collaboratively taught classrooms. A 1996 review of research about collaborative teaching by Reinhiller examined studies about the effectiveness of the practice. Out of ten studies, two offered quantitative data related to student outcomes in which the results could be attributed directly to the collaborative teaching arrangement.

Furthermore, Baker, Walberg, and Wang state that three meta- analyses in educational literature address the issue of the most effective setting of the education of special needs students. These meta analyses generate a common measure, called an effect size, which demonstrate a small to moderate beneficial effect of inclusion on the academic outcomes of special needs students. The average effect sizes range from .08 to .44, which means that special needs students educated in regular classrooms do better academically and socially than comparable students in noninclusive settings (Baker, Walberg, and Wang, p. 23). Bauwens and Hourcade state that this effect may be in part due to the fact that, in collaboratively taught classrooms, special needs students can receive the curricular or instructional changes they need immediately, and intensively. Bauwens, Friend, and Hourcade concur that one of the most significant benefits of collaborative teaching is that students evidencing academic difficulties can receive needed instructional and curricular modifications early and intensively (Bauwens, Friend, and Hourcade, p.19).

An additional benefit of inclusion is that it allows for more realistic assessment of what special needs students can and cannot do, an assessment which is based on performance rather than individually administered tests. Furthermore, the classroom teacher also becomes more involved in the writing and reviewing the child's individualized educational plan (IEP) allowing them to take greater ownership of the students.

Furthermore, in collaboratively taught classrooms students with disabilities learn to imitate the language and attitudes of their school mates. They learn to model age appropriate school and social behaviors, and thus develop new skills simply by having opportunities to interact with a wider variety of people. Other reported advantages for special education students in collaboratively taught classrooms include more contact time with teachers, additional opportunities for reinforcement of classwork, and an enhanced sense of responsibility and self-esteem (Dover, p. 53).

Any discussion of the effects of inclusion or collaborative teaching inevitably brings up questions as to its effect on non-disabled students. Only a limited research base exists documenting the impact of inclusion on the academic or developmental progress of non-disabled children. A few studies have used quasi-experimental designs to compare the progress of non-disabled children in inclusive classrooms to that of matched children enrolled in classrooms that do not include students with disabilities. These studies have found no deceleration of academic progress for non-disabled children enrolled in inclusive classrooms (Peck and Staub, p. 57). For example, when Odom and colleagues compared the progress of matched groups of non-disabled children in inclusive and noninclusive classrooms on standardized measures of cognitive, language, and social development, they found no significant differences in developmental outcomes (Peck and Staub, p. 63).

Furthermore, studies also indicate that non-disabled children will not loose teacher time and attention when educated with special education students. Hollowood and colleagues found that the presence of students with severe disabilities had no effect on levels of allocated or engaged time. In addition, time lost to interruptions of instruction was not significantly different in inclusive and non-inclusive classrooms (Peck and Staub, p. 64).

Lastly, parents and teachers seem to indicate that non-disabled children had not picked up undesirable behaviors from children with disabilities (Peck and Staub, p. 66).

Non-disabled students in fact, seem to actually benefit from time spent in inclusive classroom settings. For example, in addition to feeling more accepting of others, these students said that they came to value the contributions that all individuals make due to working closely with special needs students in everyday educational settings (Peck and Staub, p. 67). In addition, researchers have found that elementary school children learn skills that enable them not only to communicate more effectively with their non-disabled peers, but also to be more supportive of them in daily interactions (Peck and Staub, p. 67).

Furthermore, many non-disabled students have experienced an increase in self-esteem as a result of their relationships with individuals with disabilities. Having a role as a caretaker or peer tutor for a classmate with disabilities seems to give them a sense of belonging and personal satisfaction. Finally, many non-disabled students experienced a growth in their commitment to personal moral and ethical principals as a result of their relationship with students possessing disabilities. Parents reported that their children showed less prejudice toward people who behaved, acted, or looked differently from themselves after time spent in inclusive classroom settings (Peck and Staub, p. 70). Additional reported benefits for non-disabled students in collaboratively taught educational settings include more contact time with teachers, and a stronger educational emphasis on organization and learning skills (Dover, 156).

Basso and McCoy believe that many of the aforementioned academic benefits evidenced from collaborative teaching are due to the fact that when a general and special education teacher collaborate, they combine the expertise of each individual teacher, bringing together the knowledge and skills each possesses and sharing the benefits of those combined characteristics with their students (Basso and McCoy, p. 15). For while the special education teacher possess expertise in behavior modifications, learning styles, diagnostic and prescriptive teaching, and learning strategies, the general education teacher is well versed in content area, scope and sequence, large group management, and presentation of

curriculum. Furthermore, special educators are trained, even required by federal law, to base lesson plans on individualized learner goals (IEP's). The IEP steps are based on traditional, linear lesson planning models that begin with goals and objectives and end with evaluation (Dyke, Pemberton, and Syndle, p. 90). Conversely, general education teachers usually do not engage in a linear planning process even though they are likely to have been taught how to use it. They generally start planing lessons with a focus on content and activities for the entire group, followed by consideration of the objectives or specific outcomes for the group, and then ways to evaluate them. Having access to all of these varied skills, approaches, and knowledge in combination allows collaborative teachers to plan instruction which benefits all students, providing them with (as Voltaire would say) the"best of all possible worlds".

The instructional potential of collaborative teaching makes it incumbent on those involved to collaborate effectively in designing and delivering instruction interventions that will best meet the unique learning needs of the students. To that end, several collaborative teaching approaches have been established and are currently in practice, which Forest, Stainback and Stainback state are as follows:

1. one teaching, one observing - When one professional teaches and the other observes, one teacher has primary responsibility for designing and delivering instruction to the entire group. The other teacher has the goal of observing a single student or group of students for behaviors the professionals have previously agreed should be noted.

2. grazing - In this approach one teacher maintains the primary role for managing the classroom and leading instruction, while the other walks around the room to assist students who need support or have questions about their schoolwork.

3. station teaching - Here collaborative teachers divide the instructional content and each takes responsibility for teaching part of it. Students move from one station to another according to a predetermined schedule. A third station may be used for students to complete independent work, participate in peer tutoring, or work under supervision of another adult who is available.

4. parallel teaching - In this type of collaborative teaching, the teachers jointly plan the instruction, but each delivers it to a heterogeneous group comprised of half the students in the class. Teachers do not exchange groups, and the primary purpose of this approach is to lower the teacher - student ratio.

5. alternative teaching - With this method, one teacher works with a small group of students while the other instructs the large group in some content or activity that the small group can afford to miss.

6. team teaching - Here both teachers are responsible for planning , and both also share the instruction of all students. Teachers who team teach frequently report that it results in a synergy that invigors them and enhances student participation.

As stated in chapter one, although evidence is mounting which indicates that positive effects are obtained academically and socially by children in collaboratively taught classrooms, much more evidence is needed to confirm these initial findings, and extensive research is needed on the impact of collaborative teaching on students before it can be accepted and implemented as a valid instructional model.

CHAPTER THREE

DESIGN OF STUDY

INTRODUCTION

The major purpose of this study was to determine if collaborative teaching has a positive effect on the academic achievement, incidence of discipline referrals, and attitudes toward school of fourth, fifth, and sixth grade regular and special education elementary school students.

SETTING

Burlington Township is a suburban school district in Burlington County, New Jersey consisting of 14.7 square miles which completely surrounds the city of Burlington, New Jersey on the Delaware River. This integrated community has approximately twenty thousand people living in a variety of individual homes, apartments, and farms. The school district itself consists of approximately three thousand, six hundred and six students (2001 figures) attending grades K-12 in its five schools, Young School (Pre K-2), Springside School (Grade 3), Fountain Woods School (Grades 4-6), Thomas O. Hopkins Middle School (Grades 7-8), and Burlington Township High School (Grades 9-12). Burlington Township School District offers a wide variety of programs and services to all students, which include but are not limited to, an enrichment program for grades K-3, a program for gifted and talented students in grades four through twelve, enrichment and remedial courses during summer months, and a complete program for students with special educational needs. Students who have needs which cannot be met in Burlington Township are sent to the Special Services School district of Burlington County or other local private schools.

Fountain Woods Elementary School is a recently constructed, state-of-the-art school located on Fountain Avenue and Jacksonville Road in Burlington Township. Opening in September of 1999, it sits on a thirty acre plot of land. The area surrounding the school was

once known as Fountain Woods, hence the school's name. The school houses approximately eight-hundred eighty nine students in grades four through six, (2001 figures) and boasts of an office complex, thirty five classrooms, five small group instruction rooms, an art room with a kiln, a computer lab, a media center, a science room with lab facilities, a gymnasium/auditorium with a stage between the gym and cafeteria. A courtyard off the media center provides a space for students to participate in science and environmental related activities. Presently, the land surrounding the school is under construction to build an additional wing to the building to accommodate the overcrowding experienced by the rapid growth in the district.

DESCRIPTION OF THE POPULATION

Two hundred twenty-four fourth, fifth, and sixth grade elementary school students at Fountain Woods Elementary School in Burlington Township, New Jersey involved in collaboratively taught classrooms were studied. Out of those two hundred twenty-four students, seventy-five were classified as special education students, forty of whom were classified as having specific learning disabilities, six listed as having other health impairments, thirteen with multiple disabilities, seven with speech/language deficits, and three students each being classified as visually impaired, emotionally disturbed, and having a traumatic brain injury.

The report card scores of these students in language arts, social studies, math, and science from the first two marking periods of the 2000-2001 school year (before collaborative teaching was implemented) were gathered and averaged to for one composite academic score for each individual student studied. Next, the averages of these same students in language arts, social studies, math, and science for the first two marking periods of the 2001-2002 school year (in which the students were involved in collaboratively taught classrooms) were gathered and averaged to form one composite academic score for each individual student for that school year. The two sets of individual averages (by grade level) were compared using a t-test for non-independent samples to determine the degrees of freedom and t-value for each hypothesis generated. Using the Distribution of T chart, a

range for each t-value was determined at the .05 probability level to decide whether or not statistical significance had been achieved, and whether or not each hypothesis should be accepted or rejected.

The incidence of discipline referrals (demerits, detentions, and suspensions) of these students from first two marking periods of the 2000-2001 school year (before collaborative teaching was implemented) and the first two marking periods of the 2001-2002 school year (in which the students were involved in collaboratively taught classrooms) were then totaled and compared using a t-test for non-independent samples in a similar fashion as stated above to determine if collaborative teaching had any significant statistical effect on the incidence of discipline referrals of the students studied. The Minnesota School Attitude Survey (Ahlgren, 1983). (Upper Form)(Educational Testing Service Tracking Number: TC012400) was also administered to determine these students' attitudes and feelings toward their school situation in general.

DESCRIPTION OF MEASURE

The Minnesota School Attitude Survey (Ahlgren, 1983) (Educational Testing Service Tracking Number: TC012400) is used to assess students' feelings about many aspects of their school experience. It was originally developed under a state government grant as the Minnesota School Affect Assessment. There are two forms of the Minnesota School Attitude Survey: lower form and upper form. The lower form is for use in grades one through three, and the upper form is for use in grades four through twelve. The test is written at the grade three reading level. Part one of each form assesses students' reactions to academic subjects, school personnel, self-expression, their peers, and various learning modes and situations. Part two of each form assesses students' feelings of support, pressure, motivation, acceptance and exclusion, cooperation and competition, and self-worth within the school setting. The test possess content validity and adequate group regularity, as well as adequate group reliability.

TESTING PROCEDURES

The preannounced and explained test was given to all fourth, fifth, and sixth grade students by their collaboratively taught teachers who were present on Tuesday, March 5, 2002, beginning at 8:00 a.m. The entire test was administered in one session with no time limitations. It was assumed that the children responded honestly.

SCORING PROCEDURES

Since the Minnesota School Attitude Survey was **not** administered to the students in this study last year, a comparison of their feelings toward school pre and post collaborative teaching was not possible. However, the results of the test were useful in establishing a general consensus of how students in collaboratively taught classrooms currently feel about various aspects of their school situation. The attitude test responses in section one were given numerical values ranging from 5 to 1 for each circle present in the important-unimportant row, and numerical values ranging from 5 to 1 for every circle present in the pleasant to unpleasant row. In section two, attitude responses were given a numerical value ranging from 4 to 1 for each circle present in the true - to false row. The highest possible score a student could earn in section one was four hundred forty points, while the minimum score earned would be eighty-eight points. In section two, the highest possible score a student could earn would be one hundred sixty points, while the lowest possible score earned would stand at forty points. Therefore, the highest possible score for both sections of the test combined would stand at six hundred, while the lowest possible score would be one hundred -twenty eight. The total scores were interpreted using the following guide: A student earning a score ranging from 600 to 400 indicated a positive response to their school environment. A student earning a score from 399 to 200 indicated a mixed response their the school situation. Finally, a student scoring anywhere from 199 to 128 points indicated a negative feeling toward their school situation. Total scores for regular and special education students in each of the collaboratively taught classrooms by grade level were derived, and data was analyzed to determine these students feelings toward their classroom environment

CHAPTER FOUR

ANALYSIS OF DATA

The purpose of this study was to determine if collaborative teaching has a positive effect on the academic achievement and incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education students.

In the course of this study, fourteen total hypothesis were generated:

General Hypothesis 1: There will be no significant effect of collaborative teaching on the academic achievement of fourth, fifth, and sixth grade regular and special education elementary school students as measured by a comparison of their report card grades from last year in non collaboratively taught classrooms, to this year in collaboratively taught classrooms.

Sub Hypothesis 1a: There will be no significant effect of collaborative teaching on the academic achievement of fourth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1b: There will be no significant effect of collaborative teaching on the academic achievement of fifth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1c: There will be no significant effect of collaborative teaching on the academic achievement of sixth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1d: There will be no significant effect of collaborative teaching on the academic achievement of fourth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1e: There will be no significant effect of collaborative teaching on the academic achievement of fifth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 1f: There will be no significant effect of collaborative teaching on the academic achievement of sixth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

General Hypothesis 2: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2a: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2b: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fifth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2c: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of sixth grade regular education elementary school students

as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2d: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2e: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fifth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

Sub Hypothesis 2f.: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of sixth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms.

The first hypothesis states: "There will be no significant effect of collaborative teaching on the academic achievement of fourth, fifth, and sixth grade regular and special education elementary school students as measured by a comparison of their report card grades from last year in non collaboratively taught classrooms, to this year in collaboratively taught classrooms." The t-value of 1.33 for this hypothesis was well inside the range of -2.88 to 2.88 as determined at the .05 probability level, therefore no statistical significance was achieved, and the null hypothesis was accepted. This data is entered as Chart 1 in Appendix B.

Sub Hypothesis 1a states: "There will be no significant effect of collaborative teaching on the academic achievement of fourth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms" . The t-value of 2.13

for this hypothesis was well inside the range of -2.31 to 2.31 as determined by the .05 probability level, therefore no statistical significance was achieved, and the null hypothesis was again accepted. This data is entered as Chart 2 in Appendix B.

Sub Hypothesis 1b states: "There will be no significant effect of collaborative teaching on the academic achievement of fifth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". The t-value of .55 for this hypothesis was also inside the range of -2.42 to 2.42 as determined by the .05 probability level, therefore no statistical significance was achieved, and the null hypothesis was accepted. This data is entered as Chart 3 in Appendix B.

Sub Hypothesis 1c states: "There will be no significant effect of collaborative teaching on the academic achievement of sixth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". The t-value of 1.91 was again inside the range of -2.52 to 2.52 as determined by the .05 probability level, therefore no statistical significance was achieved, and the null hypothesis was accepted. This data is entered as Chart 4 in Appendix B.

Sub Hypothesis 1d states: "There will be no significant effect of collaborative teaching on the academic achievement of fourth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". The t-value of 4.64 for this hypothesis **was not** inside the range of -2.11 to 2.11 as determined by the .05 probability level, **therefore statistical significance was achieved, and the null hypothesis was rejected.** This data is entered as Chart 5 in Appendix B

Sub Hypothesis 1e states: "There will be no significant effect of collaborative teaching on the academic achievement of fifth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". The t-value of .39 generated

for this hypothesis was indeed inside the range of -2.09 to 2.09 generated at the .05 probability level, consequently no statistical significance was achieved, and the null hypothesis was accepted. This data is entered as Chart 6 in Appendix B.

Sub Hypothesis 1f: states: "There will be no significant effect of collaborative teaching on the academic achievement of sixth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". The t-value of -0.11 generated by this hypothesis was inside of the range of -2.13 to 2.13 created at the .05 probability level, therefore no statistical significance was achieved, and the null hypothesis was accepted. This data is entered as Chart 7 in Appendix B.

General Hypothesis 2 states: "There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". Here, the t-value of -3.28 was outside of the range of -2.76 to 2.76 created at the .05 probability level, therefore for the second time, **statistical significance was achieved, and the null hypothesis was rejected.** This data is entered as Chart 8 in Appendix B.

Sub Hypothesis 2a: states: "There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". The t-value for this hypothesis was 0.00, which was inside the range of -12.71 to 12.71 created at the .05 probability level, therefore once again no statistical significance was achieved, and the null hypothesis was accepted. This data is entered as Chart 9 in Appendix B.

Sub Hypothesis 2b: states: "There will be no significant effect of collaborative teaching on incidence of discipline referrals of fifth grade regular education elementary

school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". In this instance, the t value of -2.79 was outside of the range of -2.06 to 2.06 determined at the .05 probability level, therefore statistical significance was achieved and the null hypothesis was rejected. This data is entered as Chart 10 in Appendix B.

Sub Hypothesis 2c: states: "There will be no significant effect of collaborative teaching on the incidence of discipline referrals of sixth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". The t-value of -1.24 in this hypothesis was inside the range of -2.01 to 2.01 as determined at the .05 probability level, therefore no statistical significance was achieved, and the null hypothesis was accepted. This data is entered as Chart 11 in Appendix B.

Sub Hypothesis 2d: states: "There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". In this hypothesis, the t- value generated of -1.00 was again inside the range of -4.303 to 4.303 generated at the .05 probability level, therefore no statistical significance was achieved, and the null hypothesis was accepted once again. This data is entered as Chart 12 in Appendix B.

Sub Hypothesis 2e states: "There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fifth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". Here, the t-value of -2.67 was not inside the range of -2.09 to 2.09 generated at the .05 probability level, **therefore statistical significance was achieved, and the null hypothesis had to be rejected.** This data is entered as Chart 13 in Appendix B.

Finally, **Sub Hypothesis 2f**: states: "There will be no significant effect of

collaborative teaching on the incidence of discipline referrals of sixth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms". In this last hypothesis, the t-value of -2.03 was inside the range of -2.16 to 2.16 as generated by the .05 probability level, therefore no statistical significance was achieved, and the null hypothesis was accepted. This data is entered as Chart 14 in Appendix B.

In the Minnesota School Attitude Survey (Upper Form), results demonstrated that most students in collaboratively taught classrooms have a positive attitude toward their school environment. For example, among the forty -two fourth grade regular education students tested, thirty six scored in the positive response range, (scores in the 600 to 400 point range) with four students demonstrating a mixed response to their school environment, (scores in the 399 to 200 point range) and only two students viewing school negatively. (scores in the 199 to 128 range) Fourth grade special education students followed suit, with fifteen scoring in the positive range, five having mixed emotions toward their schooling, and three not viewing school positively at all.

Similarly out of the sixty fifth grade regular education students tested, forty-nine showed by their scores that they enjoyed their learning environment, six students demonstrated mixed feelings toward their educational arena, and five students had scores which depicted a negative response toward their place of schooling. Among fifth grade special education students, twenty individuals scored in the positive response range, with eight having mixed response scores, and four scoring in the negative response range.

Finally, with sixth grade regular education students, forty individuals scored in the positive response range, five indicated mixed emotions toward school, and two viewed school negatively. Among sixth grade special education students tested, scores indicated that eighteen students enjoyed their school environment, with one student each having mixed and negative feelings toward school in general. This data as entered in Appendix D.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

The idea for this study was conceived as a result of collaborative teaching being implemented for the first time in the Burlington Township School District, specifically at Fountain Woods Elementary School, and the desire of the school's principal for empirical data to support the justification of the program's continued implementation. The project was then discussed with Dr. Louis Molinari, who considered it worthy of investigation.

The purpose of this study was to determine if collaborative teaching has a positive effect on the academic achievement and incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education students.

The subjects of this study were two hundred twenty-four fourth, fifth, and sixth grade elementary school students at Fountain Woods Elementary School in Burlington Township, New Jersey involved in collaboratively taught classrooms were studied. Out of those two hundred twenty-four students, seventy-five were classified as special education students, forty of whom were classified as having specific learning disabilities, six listed as having other health impairments, thirteen with multiple disabilities, seven with speech/language deficits, and three students each being classified as visually impaired, emotionally disturbed, and having a traumatic brain injury.

The report card scores of these students in language arts, social studies, math, and science from the first two marking periods of the 2000-2001 school year (before collaborative teaching was implemented) were gathered and averaged to for one composite academic score for each individual student studied. Next, the averages of these same students in language arts, social studies, math, and science for the first two marking periods of the 2001-2002 school year (in which the students were involved in collaboratively taught classrooms) were gathered and averaged to form one composite academic score for each

individual student for that school year. The two sets of individual averages (by grade level) were compared using a t-test for non-independent samples to determine the degrees of freedom and t-value for each hypothesis generated. Using the Distribution of T chart, a range for each t-value was determined at the point 05 probability level to decided whether or not statistical significance had been achieved and if each hypothesis should be accepted or rejected.

The incidence of discipline referrals (demerits, detentions, and suspensions) of these students from first two marking periods of the 2000-2001 school year (before collaborative teaching was implemented) and the first two marking periods of the 2001-2002 school year (in which the students were involved in collaboratively taught classrooms) were also studied and compared using a t-test for non-independent samples in a similar fashion as stated above) to determine if collaborative teaching had any significant statistical effect on the incidence of discipline referrals of the students studied. The Minnesota School Attitude Survey (Ahlgren, 1983). (Upper Form)(Educational Testing Service Tracking Number: TC012400) was also administered to determine these students' attitudes and feelings toward their school situation in general, with scores indicating that most regular and special education students demonstrating a positive response to their school environment.

In the course of this study, fourteen total hypothesis were generated:

General Hypothesis 1: There will be no significant effect of collaborative teaching on the academic achievement of fourth, fifth, and sixth grade regular and special education elementary school students as measured by a comparison of their report card grades from last year in non collaboratively taught classrooms, to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that collaborative teaching was a newly implemented program in the district, and approximately half of collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program.

Sub Hypothesis 1a: There will be no significant effect of collaborative teaching on the academic achievement of fourth grade regular education students as measured by a

comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that collaborative teaching was a newly implemented program in the district, and approximately half of collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program. In addition, one of the fourth grade collaborative teachers was found to be ineffective, which may also have contributed to a lack of improvement in students' academic scores and thus to the acceptance of the null hypothesis.

Sub Hypothesis 1b: There will be no significant effect of collaborative teaching on the academic achievement of fifth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that collaborative teaching was a newly implemented program in the district, and approximately half of collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program.

Sub Hypothesis 1c: There will be no significant effect of collaborative teaching on the academic achievement of sixth grade regular education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that collaborative teaching was a newly implemented program in the district, and approximately half of collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program.

Sub Hypothesis 1d: There will be no significant effect of collaborative teaching on the academic achievement of fourth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was rejected, perhaps due to the positive effects of collaborative teaching,, on the academic progress of the individuals in question.

Sub Hypothesis 1e: There will be no significant effect of collaborative teaching on the academic achievement of fifth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that collaborative teaching was a newly implemented program in the district, and approximately half of collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program.

Sub Hypothesis 1f: There will be no significant effect of collaborative teaching on the academic achievement of sixth grade special education students as measured by a comparison of their report card grades from last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that collaborative teaching was a newly implemented program in the district, and approximately half of collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program.

General Hypothesis 2: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was rejected, the improvement is discipline referrals perhaps being attributed to the effects of collaborative teaching, as well as the character education program implemented in the district.

Sub Hypothesis 2a: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that this was the first year collaborative teaching was implemented in the district, and half of the collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program. In addition, one

of the fourth grade collaborative teahers was found to be ineffective, thus potentially prohibiting behavioral progress in some of those students.

Sub Hypothesis 2b: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fifth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was rejected, the improvement is discipline referrals perhaps being attributed to the effects of collaborative teaching, as well as the character education program implemented in the district.

Sub Hypothesis 2c: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of sixth grade regular education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that this was the first year collaborative teaching was implemented in the district, and half of the collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program

Sub Hypothesis 2d: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fourth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms to this year in collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that this was the first year collaborative teaching was implemented in the district, and half of the collaborative teachers surveyed felt as if they did not receive adequate training prior to beginning the program. In addition, one of the fourth grade collaborative teahers was found to be ineffective, thus potentially prohibiting behavioral progress in some of those students.

Sub Hypothesis 2e: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of fifth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught

classrooms to this year in collaboratively taught classrooms. his null hypothesis was rejected, the improvement is discipline referrals perhaps being attributed to the effects of collaborative teaching, as well as the character education program implemented in the district.

Sub Hypothesis 2f: There will be no significant effect of collaborative teaching on the incidence of discipline referrals of sixth grade special education elementary school students as measured by a comparison of discipline incidence last year in non-collaboratively taught classrooms. This null hypothesis was accepted, perhaps due to the fact that this was the first year collaborative teaching was utilized in the district, and half of the collaborative teachers surveyed felt as if they did not receive adequate training prior to starting the program

The fourteen major hypotheses stated that there would be no significant effect of collaborative teaching on the academic achievement and incidence of discipline referrals of fourth, fifth, and sixth grade regular and special education students enrolled in cooperatively taught classrooms. Out of those fourteen null hypotheses generated, statistical significance was only achieved in four instances, leaving those particular hypothesis to be rejected. There was no statistical significance achieved in the other ten null hypotheses, leaving those to be accepted.

The acceptance of most of the null hypotheses indicates that collaborative teaching did not yet have a positive statistical effect on the academic achievement and incidence of discipline referrals of most fourth, fifth, and sixth grade elementary school students in this study. However, this may in part, be due to some of the limitations of the study discussed previously in chapter one as well as those reasons listed above.

Based on the findings of this study, the author suggests the following recommendations:

1. That the scope of the study be broadened to include students in other school districts to see if the findings of this study can be generalized to other settings and populations.
2. That a longitudinal study be conducted where a particular class of students be studied through several grade levels with collaborative teachers to see if similar patterns are achieved.

APPENDIX A

Charts Comparing Students' Academic Averages And Incidence Of Discipline Referrals From The 2001 - 2002 School Year (prior To Collaborative Teaching) To The 2002-2001 School Year (after Collaborative Teaching Was Implemented)

Mr Folayan's Fourth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Folayan	85.5	88.0	0	0
Reg Ed Student #2	Folayan	94.5	97.1	0	0
Reg Ed Student #3	Folayan	84.1	90.6	0	0
Reg Ed Student #4	Folyan	85.1	91.1	0	0
Reg Ed Student #5	Folayan	88.6	93.8	0	0
Reg Ed Student #6	Folayan	90.8	91.2	0	0
Reg Ed Student #7	Folayan	85.4	87.3	1	0
Reg Ed Student #8	Folayan	89.5	91.0	0	0
Reg Ed Student #9	Folayan	86.6	88.4	0	0
Reg Ed Student #10	Folayan	95.2	97.4	0	0
Reg Ed Student #11	Folayan	94.6	98.0	0	0
Reg Ed Student #12	Folayan	95.0	97.1	0	0
Reg Ed Student #13	Folayan	95.3	98.9	0	0
Reg Ed Student #14	Folayan	93.3	97.6	0	0
Reg Ed Student #15	Folayan	96.1	97.9	0	0
Reg Ed Student #16	Folayan	88.7	90.5	0	0
Reg Ed Student #17					
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Folayan	80.1	84.4	0	1
Spec Ed Student #2	Folayan	74.9	89.5	0	0
Spec Ed Student #3	Folayan	76.6	88.9	0	0
Spec Ed Student #4	Folayan	71.5	83.4	0	0
Spec Ed Student #5	Folayan	91.6	93.1	0	0
Spec Ed Student #6	Folayan	72.8	86.0	0	0
Spec Ed Student #7	Folayan	91.0	90.1	0	0
Spec Ed Student #8	Folayan	84.3	90.1	0	1
Spec Ed Student #9	Folayan	76.4	81.9	0	4
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Mrs. Krassan's Fourth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Krassan	96.5	98.9	0	0
Reg Ed Student #2	Krassan	90.1	94.0	0	0
Reg Ed Student #3	Krassan	74.4	80.1	0	0
Reg Ed Student #4	Krassan	94.9	91.3	1	0
Reg Ed Student #5	Krassan	79.5	79.8	0	1
Reg Ed Student #6	Krassan	95.6	93.9	0	0
Reg Ed Student #7	Krassan	89.6	95.0	0	0
Reg Ed Student #8	Krassan	85.4	86.9	0	0
Reg Ed Student #9	Krassan	86.4	83.0	1	0
Reg Ed Student #10	Krassan	86.4	95.9	0	0
Reg Ed Student #11	Krassan	80.6	87.4	0	4
Reg Ed Student #12	Krassan	95.5	95.8	0	1
Reg Ed Student #13	Krassan	89.5	95.8	0	0
Reg Ed Student #14					
Reg Ed Student #15					
Reg Ed Student #16					
Reg Ed Student #17					
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Krassan	89.1	95.8	0	0
Spec Ed Student #2	Krassan	81.8	89.4	0	0
Spec Ed Student #3	Krassan	81.6	78.8	0	0
Spec Ed Student #4	Krassan	73.0	87.6	0	0
Spec Ed Student #5	Krassan	71.8	89.1	1	0
Spec Ed Student #6	Krassan	84.7	89.1	0	0
Spec Ed Student #7	Krassan	89.2	88.3	0	0
Spec Ed Student #8					
Spec Ed Student #9					
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Mr. Tyler's Fourth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Tyler	90.3	95.4	0	0
Reg Ed Student #2	Tyler	86.6	88.9	0	0
Reg Ed Student #3	Tyler	98.1	98.0	0	0
Reg Ed Student #4	Tyler	79.1	89.5	0	0
Reg Ed Student #5	Tyler	94.5	94.3	1	0
Reg Ed Student #6	Tyler	88.4	94.0	0	0
Reg Ed Student #7	Tyler	89.6	93.3	0	0
Reg Ed Student #8	Tyler	75.3	81.3	1	0
Reg Ed Student #9	Tyler	84.2	91.5	0	0
Reg Ed Student #10	Tyler	88.8	88.9	0	0
Reg Ed Student #11	Tyler	80.5	82.9	0	1
Reg Ed Student #12	Tyler	95.0	95.5	0	0
Reg Ed Student #13	Tyler	77.1	80.4	0	1
Reg Ed Student #14					
Reg Ed Student #15					
Reg Ed Student #16					
Reg Ed Student #17					
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Tyler	83.0	86.3	0	0
Spec Ed Student #2	Tyler	80.8	85.8	1	1
Spec Ed Student #3	Tyler	81.5	87.9	0	1
Spec Ed Student #4	Tyler	85.3	85.3	0	1
Spec Ed Student #5	Tyler	86.2	87.6	0	0
Spec Ed Student #6	Tyler	91.5	85.4	0	0
Spec Ed Student #7	Tyler	90.6	83.8	0	1
Spec Ed Student #8					
Spec Ed Student #9					
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Mr. Caracci's Fifth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Caracci	95.3	96.0	0	0
Reg Ed Student #2	Caracci	94.8	95.0	0	0
Reg Ed Student #3	Caracci	99.0	96.5	0	0
Reg Ed Student #4	Caracci	93.4	94.6	0	0
Reg Ed Student #5	Caracci	91.5	90.9	2	1
Reg Ed Student #6	Caracci	89.1	91.5	0	0
Reg Ed Student #7	Caracci	88.6	87.6	0	0
Reg Ed Student #8	Caracci	94.3	94.9	0	0
Reg Ed Student #9	Caracci	85.4	85.6	0	0
Reg Ed Student #10	Caracci	95.4	96.2	0	0
Reg Ed Student #11	Caracci	94.9	92.1	0	0
Reg Ed Student #12	Caracci	92.0	95.8	0	0
Reg Ed Student #13	Caracci	90.1	88.5	2	1
Reg Ed Student #14	Caracci	93.8	89.1	0	0
Reg Ed Student #15	Caracci	88.5	83.5	0	0
Reg Ed Student #16	Caracci	89.8	90.8	2	1
Reg Ed Student #17	Caracci	77.4	79.1	6	2
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Caracci	89.8	80.8	0	1
Spec Ed Student #2	Caracci	82.8	84.8	0	4
Spec Ed Student #3	Caracci	80.3	80.0	6	1
Spec Ed Student #4	Caracci	68.0	77.3	0	0
Spec Ed Student #5	Caracci	97.0	96.4	0	0
Spec Ed Student #6	Caracci	65.3	73.5	2	1
Spec Ed Student #7	Caracci	80.4	86.9	0	0
Spec Ed Student #8	Caracci	88.7	90.6	3	2
Spec Ed Student #9	Caracci	75.1	73.8	0	0
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Ms. Perry's Fifth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Perry	83.1	88.5	7	6
Reg Ed Student #2	Perry	84.5	90.3	6	0
Reg Ed Student #3	Perry	91.0	84.1	0	0
Reg Ed Student #4	Perry	79.8	81.3	3	1
Reg Ed Student #5	Perry	89.0	81.3	0	0
Reg Ed Student #6	Perry	96.8	92.9	0	0
Reg Ed Student #7	Perry	92.5	88.0	3	1
Reg Ed Student #8	Perry	81.4	88.6	2	1
Reg Ed Student #9	Perry	91.8	87.3	0	0
Reg Ed Student #10	Perry	79.5	85.6	0	0
Reg Ed Student #11	Perry	83.1	86.9	0	0
Reg Ed Student #12	Perry	95.0	92.4	0	0
Reg Ed Student #13					
Reg Ed Student #14					
Reg Ed Student #15					
Reg Ed Student #16					
Reg Ed Student #17					
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Perry	71.4	77.3	5	5
Spec Ed Student #2	Perry	91.1	86.4	0	0
Spec Ed Student #3	Perry	78.8	84.4	0	0
Spec Ed Student #4	Perry	89.4	88.8	0	0
Spec Ed Student #5	Perry	84.4	86.1	2	2
Spec Ed Student #6	Perry	86.1	85.5	0	0
Spec Ed Student #7	Perry	76.5	71.6	0	5
Spec Ed Student #8					
Spec Ed Student #9					
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Mrs. Kennedy's Fifth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Kennedy	91.3	94.6	0	0
Reg Ed Student #2	Kennedy	90.9	92.5	0	0
Reg Ed Student #3	Kennedy	87.3	91.8	0	0
Reg Ed Student #4	Kennedy	87.3	86.5	0	0
Reg Ed Student #5	Kennedy	87.5	92.8	7	4
Reg Ed Student #6	Kennedy	80.9	83.6	0	0
Reg Ed Student #7	Kennedy	85.1	85.0	7	8
Reg Ed Student #8	Kennedy	81.1	86.5	0	0
Reg Ed Student #9	Kennedy	88.4	92.5	0	0
Reg Ed Student #10	Kennedy	75.9	80.3	3	1
Reg Ed Student #11	Kennedy	95.0	95.3	1	0
Reg Ed Student #12	Kennedy	95.0	86.1	0	0
Reg Ed Student #13	Kennedy	74.0	73.9	0	0
Reg Ed Student #14	Kennedy	83.9	92.0	0	0
Reg Ed Student #15					
Reg Ed Student #16					
Reg Ed Student #17					
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Kennedy	86.3	85.3	0	0
Spec Ed Student #2	Kennedy	81.4	82.4	2	1
Spec Ed Student #3	Kennedy	65.6	65.5	24	16
Spec Ed Student #4	Kennedy	80.3	79.5	4	3
Spec Ed Student #5	Kennedy	67.8	68.9	0	1
Spec Ed Student #6	Kennedy	80.3	85.8	0	0
Spec Ed Student #7	Kennedy	65.4	64.8	0	0
Spec Ed Student #8	Kennedy	90.7	91.8	0	0
Spec Ed Student #9					
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Mrs. Spano's Fifth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Spano	68.1	82.6	0	0
Reg Ed Student #2	Spano	92.7	93.8	0	0
Reg Ed Student #3	Spano	79.5	81.8	0	0
Reg Ed Student #4	Spano	68.3	75.3	3	2
Reg Ed Student #5	Spano	93.5	92.3	0	0
Reg Ed Student #6	Spano	79.8	77.8	9	6
Reg Ed Student #7	Spano	79.8	92.6	0	0
Reg Ed Student #8	Spano	91.3	93.9	0	0
Reg Ed Student #9	Spano	86.4	84.4	0	0
Reg Ed Student #10	Spano	96.4	93.8	0	0
Reg Ed Student #11	Spano	89.5	91.4	0	0
Reg Ed Student #12	Spano	89.9	82.3	0	0
Reg Ed Student #13	Spano	89.9	91.1	0	0
Reg Ed Student #14	Spano	79.9	85.4	0	0
Reg Ed Student #15	Spano	91.6	91.6	0	0
Reg Ed Student #16	Spano	90.3	87.8	0	0
Reg Ed Student #17	Spano	83.9	84.4	7	4
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Spano	82.8	83.9	5	4
Spec Ed Student #2	Spano	64.5	75.8	10	3
Spec Ed Student #3	Spano	82.1	81.4	0	1
Spec Ed Student #4	Spano	85.5	79.5	2	1
Spec Ed Student #5	Spano	80.2	83.5	1	2
Spec Ed Student #6	Spano	91.5	86.0	0	0
Spec Ed Student #7	Spano	78.4	77.5	0	0
Spec Ed Student #8	Spano	83.7	85.8	0	0
Spec Ed Student #9					
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Mrs. Tiedeken's Sixth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Tiedeken	81.0	88.1	0	0
Reg Ed Student #2	Tiedeken	87.8	89.5	0	0
Reg Ed Student #3	Tiedeken	80.1	81.5	5	5
Reg Ed Student #4	Tiedeken	84.1	85.6	0	0
Reg Ed Student #5	Tiedeken	88.4	88.5	0	0
Reg Ed Student #6	Tiedeken	94.9	96.4	0	0
Reg Ed Student #7	Tiedeken	86.9	84.6	0	1
Reg Ed Student #8	Tiedeken	85.9	86.3	0	0
Reg Ed Student #9	Tiedeken	95.7	95.9	0	0
Reg Ed Student #10	Tiedeken	86.4	87.6	1	1
Reg Ed Student #11	Tiedeken	83.8	84.4	0	0
Reg Ed Student #12	Tiedeken	96.0	94.1	0	1
Reg Ed Student #13	Tiedeken	70.9	74.5	5	0
Reg Ed Student #14	Tiedeken	89.1	90.8	2	1
Reg Ed Student #15					
Reg Ed Student #16					
Reg Ed Student #17					
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Tiedeken	85.1	79.6	0	0
Spec Ed Student #2	Tiedeken	68.3	75.5	35	27
Spec Ed Student #3	Tiedeken	84.6	87.4	0	0
Spec Ed Student #4	Tiedeken	90.1	88.0	0	0
Spec Ed Student #5	Tiedeken	81.0	76.1	0	0
Spec Ed Student #6	Tiedeken	78.6	79.3	0	0
Spec Ed Student #7	Tiedeken	81.5	80.5	0	0
Spec Ed Student #8	Tiedeken	80.9	82.0	0	0
Spec Ed Student #9					
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Mr. Ryan's Sixth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Ryan	92.4	91.8	0	0
Reg Ed Student #2	Ryan	66.0	80.5	0	0
Reg Ed Student #3	Ryan	87.1	92.0	1	0
Reg Ed Student #4	Ryan	94.4	95.0	0	0
Reg Ed Student #5	Ryan	84.5	86.1	5	3
Reg Ed Student #6	Ryan	90.8	92.3	0	0
Reg Ed Student #7	Ryan	84.6	85.5	2	1
Reg Ed Student #8	Ryan	93.4	91.6	0	0
Reg Ed Student #9	Ryan	81.4	91.1	0	0
Reg Ed Student #10	Ryan	86.2	85.6	5	5
Reg Ed Student #11	Ryan	84.9	81.1	0	0
Reg Ed Student #12	Ryan	88.4	92.4	1	0
Reg Ed Student #13	Ryan	81.8	80.3	0	0
Reg Ed Student #14	Ryan	87.1	86.6	0	0
Reg Ed Student #15	Ryan	78.9	76.8	0	0
Reg Ed Student #16	Ryan	90.1	89.0	0	0
Reg Ed Student #17	Ryan	72.8	73.4	0	0
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Ryan	86.1	80.1	0	0
Spec Ed Student #2	Ryan	89.8	98.8	0	0
Spec Ed Student #3	Ryan	86.6	82.0	0	0
Spec Ed Student #4	Ryan	76.0	77.8	22	9
Spec Ed Student #5	Ryan	85.5	84.6	4	1
Spec Ed Student #6					
Spec Ed Student #7					
Spec Ed Student #8					
Spec Ed Student #9					
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

Mr. Morolda's Sixth Grade Data

Student's Name	Teacher's Name	Academic Avg 2000-2001	Academic Avg 2001-2002	Discipline Refers 2000-2001	Discipline Refers 2001-2002
Reg Ed Student #1	Morolda	83.6	83.4	0	0
Reg Ed Student #2	Morolda	85.6	88.6	0	0
Reg Ed Student #3	Morolda	89.8	90.5	0	0
Reg Ed Student #4	Morolda	76.6	79.1	0	0
Reg Ed Student #5	Morolda	95.1	91.8	0	0
Reg Ed Student #6	Morolda	95.4	92.3	6	5
Reg Ed Student #7	Morolda	89.3	90.5	0	0
Reg Ed Student #8	Morolda	82.8	84.1	7	7
Reg Ed Student #9	Morolda	81.8	83.9	3	3
Reg Ed Student #10	Morolda	87.0	90.8	0	0
Reg Ed Student #11	Morolda	79.3	80.5	0	1
Reg Ed Student #12	Morolda	89.0	89.5	1	0
Reg Ed Student #13	Morolda	83.0	84.4	6	5
Reg Ed Student #14	Morolda	93.1	92.8	0	0
Reg Ed Student #15	Morolda	84.1	82.5	0	0
Reg Ed Student #16	Morolda	88.2	87.0	0	0
Reg Ed Student #17					
Reg Ed Student #18					
Reg Ed Student #19					
Reg Ed Student #20					
Reg Ed Student #21					
Reg Ed Student #22					
Reg Ed Student #23					
Reg Ed Student #24					
Reg Ed Student #25					
Spec Ed Student #1	Morolda	79.2	78.0	4	5
Spec Ed Student #2	Morolda	76.6	78.1	14	12
Spec Ed Student #3	Morolda	86.8	80.9	0	0
Spec Ed Student #4	Morolda	80.5	82.1	0	0
Spec Ed Student #5	Morolda	87.3	86.4	2	0
Spec Ed Student #6	Morolda	77.4	78.9	5	0
Spec Ed Student #7	Morolda	76.3	83.6	6	1
Spec Ed Student #8					
Spec Ed Student #9					
Spec Ed Student #10					
Spec Ed Student #11					
Spec Ed Student #12					
Spec Ed Student #13					
Spec Ed Student #14					
Spec Ed Student #15					

APPENDIX B

Results Of T-test For Non-independent Samples

Hypothesis Charts

APPENDIX B

CHART 1

GENERAL HYPOTHESIS 1: FOURTH, FIFTH, AND SIXTH GRADE REGULAR AND SPECIAL EDUCATION STUDENTS' ACADEMIC RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		176		81.8		84.4
SUM OF D'S		1161.2		87		78.0
MEAN OF D'S		6.6		79.3		78.1
SUM OF D'S SQUARED		764928.8		89		80.9
T-VALUE		1.33		83		82.1
DEGREES OF FREEDOM		175		76.6		86.4

APPENDIX B

CHART 2

SUB HYPOTHESIS 1A: FOURTH GRADE REGULAR EDUCATION STUDENTS' ACADEMIC RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		35		90.1		80.1
SUM OF D'S		97.20		74.4		91.3
MEAN OF D'S		2.78		94.9		79.8
SUM OF D'S SQUARED		2266.56		79.5		93.9
T-VALUE		2.13		95.6		95.0
DEGREES OF FREEDOM		34		89.6		86.9

APPENDIX B

CHART 3

SUB HYPOTHESIS 1B: FIFTH GRADE REGULAR EDUCATION STUDENTS' ACADEMIC RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		49		79.8		92.6
SUM OF D'S		34.50		79.8		93.9
MEAN OF D'S		.70		91.3		84.4
SUM OF D'S SQUARED		3853.07		86.4		93.8
T-VALUE		.55		96.4		91.4
DEGREES OF FREEDOM		46		89.5		82.3

APPENDIX B

CHART 4

SUB HYPOTHESIS 1C: SIXTH GRADE REGULAR EDUCATION STUDENTS' ACADEMIC RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		38		89.8		90.5
SUM OF D'S		60.60		76.6		79.1
MEAN OF D'S		1.59		95.1		91.8
SUM OF D'S SQUARED		1078.48		95.4		92.3
T-VALUE		1.91		89.3		90.5
DEGREES OF FREEDOM		37		82.8		84.1

APPENDIX B

CHART 5

SUB HYPOTHESIS 1D: FOURTH GRADE SPECIAL EDUCATION STUDENTS' ACADEMIC RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		18		73.0		90.1
SUM OF D'S		1123.40		71.8		81.9
MEAN OF D'S		6.86		80.1		95.8
SUM OF D'S SQUARED		1514.88		74.9		89.4
T-VALUE		4.64		76.6		78.8
DEGREES OF FREEDOM		17		75.1		87.6

APPENDIX B

CHART 6

SUB HYPOTHESIS 1E: FIFTH GRADE SPECIAL EDUCATION STUDENTS' ACADEMIC RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		20		91.1		68.9
SUM OF D'S		16.20		78.8		64.8
MEAN OF D'S		.93		89.4		91.8
SUM OF D'S SQUARED		2160.77		84.4		83.9
T-VALUE		.39		86.1		75.8
DEGREES OF FREEDOM		19		76.5		81.4

APPENDIX B

CHART 7

SUB HYPOTHESIS 1F: SIXTH GRADE SPECIAL EDUCATION STUDENTS'ACADEMIC RECORD

STATISTIC	VALUES	GROUP X	GROUP Y
NUMBER OF PAIRS	16	86.1	82.0
SUM OF D'S	-3.80	89.8	77.8
MEAN OF D'S	-0.24	86.8	78.1
SUM OF D'S SQUARED	1145.88	76.0	80.9
T-VALUE	-0.11	85.5	82.1
DEGREES OF FREEDOM	15	76.6	86.4

APPENDIX B

CHART 8

GENERAL HYPOTHESIS 2: FOURTH, FIFTH, AND SIXTH GRADE REGULAR AND SPECIAL EDUCATION STUDENTS' DISCIPLINE RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		84		2		1
SUM OF D'S		-123.00		4		3
MEAN OF D'S		-1.46		12		11
SUM OF D'S SQUARED		1569.00		2		2
T-VALUE		-3.28		1		4
DEGREES OF FREEDOM		83		1		1

APPENDIX B

CHART 9

SUB HYPOTHESIS 2A: FOURTH GRADE REGULAR EDUCATION STUDENTS' DISCIPLINE RECORD

STATISTIC	VALUES	GROUP X	GROUP Y
NUMBER OF PAIRS	2	1	1
SUM OF D'S	0.00	1	1
MEAN OF D'S	0.00	0	1
SUM OF D'S SQUARED	0.00	0	1
T-VALUE	0.00	0	2
DEGREES OF FREEDOM	1.0	0	2

APPENDIX B

CHART 10

SUB HYPOTHESIS 2B: FIFTH GRADE REGULAR EDUCATION STUDENTS' DISCIPLINE RECORD

STATISTIC	VALUES	GROUP X	GROUP Y
NUMBER OF PAIRS	27	1	1
SUM OF D'S	-36.00	1	1
MEAN OF D'S	-1.33	2	1
SUM OF D'S SQUARED	208.00	1	1
T-VALUE	-2.79	1	4
DEGREES OF FREEDOM	29	1	6

APPENDIX B

CHART 11

SUB HYPOTHESIS 2C: SIXTH GRADE REGULAR EDUCATION STUDENTS' DISCIPLINE RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		21		1		4
SUM OF D'S		-13.00		1		1
MEAN OF D'S		-0.62		1		3
SUM OF D'S SQUARED		113.00		4		5
T-VALUE		-1.24		6		2
DEGREES OF FREEDOM		20		3		1

APPENDIX B

CHART 12

SUB HYPOTHESIS 2D: FOURTH GRADE SPECIAL EDUCATION STUDENTS'DISCIPLINE RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		3		1		1
SUM OF D'S		-1.00		1		1
MEAN OF D'S		-0.33		2		1
SUM OF D'S SQUARED		1.00		0		1
T-VALUE		-1.00		0		1
DEGREES OF FREEDOM		2		0		3

APPENDIX B

CHART 13

SUB HYPOTHESIS 2E: FIFTH GRADE SPECIAL EDUCATIN STUDENTS' DISCIPLINE RECORD

STATISTIC		VALUES		GROUP X		GROUP Y
NUMBER OF PAIRS		21		9		1
SUM OF D'S		-44.00		4		2
MEAN OF D'S		-2.10		11		4
SUM OF D'S SQUARED		350.00		4		1
T-VALUE		-2.67		5		2
DEGREES OF FREEDOM		20		2		3

APPENDIX B

CHART 14

SUB HYPOTHESIS 2F: SIXTH GRADE SPECIAL EDUCATION STUDENTS' DISCIPLINE RECORD

STATISTIC	VALUES	GROUP X	GROUP Y
NUMBER OF PAIRS	14	6	7
SUM OF D'S	-39.00	2	2
MEAN OF D'S	-2.79	14	5
SUM OF D'S SQUARED	451.00	2	1
T-VALUE	-2.03	2	3
DEGREES OF FREEDOM	13	4	1

APPENDIX C

Minnesota School Attitude Survey

APPENDIX C MINNESOTA SCHOOL ATTITUDE SURVEY

UPPER FORM

Part One: Fill in one circle in each row to show how your feel about what is written across the top of the box

1. Learning math

important	00000	unimportant
pleasant	00000	unpleasant

2. Learning to read better

important	00000	unimportant
pleasant	00000	unpleasant

3. Learning about our country

important	00000	unimportant
pleasant	00000	unpleasant

4. Learning about other countries

important	00000	unimportant
pleasant	00000	unpleasant

5. Learning language (English)

important	00000	unimportant
pleasant	00000	unpleasant

6. Learning spelling

important	00000	unimportant
pleasant	00000	unpleasant

7. Learning about music

important	00000	unimportant
pleasant	00000	unpleasant

8. Learning science

important	00000	unimportant
pleasant	00000	unpleasant

9. Following school rules

important	00000	unimportant
pleasant	00000	unpleasant

10. Listening to the teacher

important	00000	unimportant
pleasant	00000	unpleasant

11. Choosing who I want to work with in class

important	00000	unimportant
pleasant	00000	unpleasant

12. Writing stories or reports

important	00000	unimportant
pleasant	00000	unpleasant

13. Watching plays

important	00000	unimportant
pleasant	00000	unpleasant

14. Doing schoolwork by myself

important	00000	unimportant
pleasant	00000	unpleasant

15. Going to school sporting events

important	00000	unimportant
pleasant	00000	unpleasant

16. Using the school library

important	00000	unimportant
pleasant	00000	unpleasant

17. Drawing or painting in art class

important	00000	unimportant
pleasant	00000	unpleasant

18. Doing science experiments

important	00000	unimportant
pleasant	00000	unpleasant

19. Having recess or free periods in school

important	00000	unimportant
pleasant	00000	unpleasant

20. Reading poems

important	00000	unimportant
pleasant	00000	unpleasant

21. Learning about history

important	00000	unimportant
pleasant	00000	unpleasant

22. Being a good student

important	00000	unimportant
pleasant	00000	unpleasant

23. Being in school clubs

important	00000	unimportant
pleasant	00000	unpleasant

24. Using workbooks

important	00000	unimportant
pleasant	00000	unpleasant

25. Doing a school project on my own

important	00000	unimportant
pleasant	00000	unpleasant

26. Teachers

important	00000	unimportant
pleasant	00000	unpleasant

27. The principal

important	00000	unimportant
pleasant	00000	unpleasant

28. Teacher aides

important	00000	unimportant
pleasant	00000	unpleasant

29. Counselors

important	00000	unimportant
pleasant	00000	unpleasant

30. Answering questions I have already heard before

important	00000	unimportant
pleasant	00000	unpleasant

31. Answering questions I have never heard before

important	00000	unimportant
pleasant	00000	unpleasant

32. Taking physical education (gym)

important	00000	unimportant
pleasant	00000	unpleasant

33. Learning on a computer in school

important	00000	unimportant
pleasant	00000	unpleasant

34. Students who aren't as smart as I am

important	00000	unimportant
pleasant	00000	unpleasant

35. Students who are smarter than I am

important 00000 unimportant
pleasant 00000 unpleasant

36. Watching films in school

important 00000 unimportant
pleasant 00000 unpleasant

37. Getting good grades

important 00000 unimportant
pleasant 00000 unpleasant

38. Talking in a small group about my own ideas

important 00000 unimportant
pleasant 00000 unpleasant

39. Talking in a small group about my own feelings

important 00000 unimportant
pleasant 00000 unpleasant

40. Taking tests

important 00000 unimportant
pleasant 00000 unpleasant

41. My friends

important 00000 unimportant
pleasant 00000 unpleasant

42. Talking to the whole class about my own ideas

important 00000 unimportant
pleasant 00000 unpleasant

43. Talking to the whole class about my own feelings

important 00000 unimportant
pleasant 00000 unpleasant

44. Choosing what I want to learn about in school

important 00000 unimportant
pleasant 00000 unpleasant

Part Two: Fill In One Circle For Each Sentence To Show How True It Is For You

1. I have to hurry to finish my work in school.

true 0000 false

2. My teachers care about how much I learn.

true 0000 false

3. My teachers like me the way I am.

true 0000 false

4. I like to have other students help me learn.

true 0000 false

5. My teachers grade my work fairly.

true 0000 false

6. I would rather work with other students than by myself.

true 0000 false

7. I do schoolwork to make my teachers happy.

true 0000 false

8. I do schoolwork to make my parents happy.

true 0000 false

9. I do schoolwork to keep my teachers from getting mad at me.

true 0000 false

10. I do schoolwork because it is interesting.

true 0000 false

11. I do schoolwork so other students will like me.

true 0000 false

12. I do schoolwork because it's fun.

true 0000 false

13. My teachers are interested in what I have to say.

true 0000 false

14. My friends do better work than I do.

true 0000 false

15. I like to be told exactly what to do in class.

true 0000 false

16. My teachers care about my feelings.

true 0000 false

17. I like to learn in school.

true 0000 false

18. I like to do better work than my friends.

true 0000 false

19. My teachers help me learn.

true 0000 false

20. I am just as important in the school as any other student.

true 0000 false

21. Some of my teachers understand me pretty well.

true 0000 false

22. My teachers give me too much work to do.

true 0000 false

23. I am doing a good job of learning in school..

true 0000 false

24. I feel I am part of what is going on in school.

true 0000 false

25. My teachers like me as much as they like other students.

true 0000 false

26. I wish there were more rules in school.

true 0000 false

27. Work in school is often too hard for me.

true 0000 false

28. I like to study what the teacher tells me to.

true 0000 false

29. I like to get better grades than other students do.

true 0000 false

30. My teachers think it is important to be my friend.

true 0000 false

31. I have to many questions I don't get to ask.

true 0000 false

32. I like to help other students learn.

true 0000 false

33. I like to have the teacher see my work.

true 0000 false

34. I don't learn well if I'm given a lot of free time.

true 0000 false

35. My teachers like to see my work.

true 0000 false

36. Other students like me.

true 0000 false

37. I get as much of a chance as other students to do special things.

true 0000 false

38. My grades in school really show how much I know.

true 0000 false

39. My teachers are fair in making me follow rules.

true 0000 false

40. I feel that school is preparing me for life's work.

true 0000 false

APPENDIX D

Minnesota School Attitude Survey

Results Chart

APPENDIX D

Chart Reflecting Students' Scores On Minnesota School Attitude Survey - Upper Form

SCORE	POSITIVE RESPONSE 600-400	MIXED RESPONSE 399-200	NEGATIVE RESPONSE 199-128
4th Grade Regular Education Students	36	4	2
4th Grade Special Education Students	15	5	3
5th Grade Regular Education Students	49	6	5
5th Grade Special Education Students	20	8	4
6th Grade Regular Education Students	40	5	2
6th Grade Special Education Students	18	1	1

APPENDIX E

Collaborative Teaching Survey

APPENDIX E

Collaborative Teaching Survey

1. Please explain how you came to participate in the cooperative teaching program. (Was your participation voluntary, was it requested that you participate, etc.?)

2. How did you come to be paired with your current cooperative teaching partner? (Did yourequest a specific partner, were you assigned to work with a specific staff member? etc.)

3. Do you feel you received adequate training prior to beginning the cooperative teaching program? (Please briefly list any training received.)

4. Do you feel you have received adequate administrative support prior to and while participating in this program? (example: enough planning time with teaching partner, etc.)

5. Have you seen academic improvement in your students which you feel can be attributed to cooperative teaching? Please explain.

6. Have you seen a behavioral improvement in your students which you feel can be attributed to cooperative teaching? Please explain.

7. Would you participate in this program again? Why or why not?

8. Would you teach again with your current cooperative teaching partner? Why or why not?

9. Please briefly describe the strengths and weaknesses of the cooperative teaching program in your view.

10. Please briefly explain what you perceive as both parental and student attitudes toward the cooperative teaching program.

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